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Comments by the International Center for Technology Assessment
And the Center for Food Safety
On the Food and Drug Administration proposed
Guidance for Industry
Regulation of Genetically Engineered Animals
Containing Heritable rDNA Constructs
November 18, 2008

Overview

It is our position that FDA drug regulation is inadequate alone for the oversight of GE animals. FDA needs a new legal framework, with new, more comprehensive and specific legal authority to oversee GE animals properly. Until that time, FDA should shelf this proposal and refuse to approve any GE animals until it has adequate authority.

We appreciate FDA's attempt to use the authority it has, but without more legal authority, it bears fundamental flaws that must be addressed. Particularly glaring are that: 1) regulation as new drugs provides little public transparency, and none until the end of the process; and 2) FDA's authority only encompasses what is safe and effective rather than expressly including broader environmental and socio-economic concerns. Regarding the latter of these two failings, we appreciate the role that the National Environmental Policy Act (NEPA) plays in the process and FDA's willingness to engage on how it believes NEPA applies here. As will be discussed in detail below, we strongly disagree with FDA's position on NEPA that it has discretion on how and when to apply it – for something as new and risky as GE animals it is a mandatory review that requires much more assessment, including a Programmatic Environmental Impact Statement (PEIS) and case-specific Environmental Impact Statements (EIS). FDA's attempt to broaden its "enforcement discretion" in this regard is unlawful and dangerous. That said, NEPA is still only a procedural vehicle, it is not decisional; FDA needs to have a proper substantive criteria to these animals, as we have in other environmental laws. There must

be full premarket and substantive environmental review for adverse impacts. It should be precautionary in nature and not permit any GE animals to be approved unless there is substantial proof of no environmental danger. Crucially, lack of evidence of harm should not be a proxy for reasonable certainty of safety to humans and the environment. At the very least there needs to be a cost-benefit analysis included on these substantive harms, again similar to what is statutorily required in other environmental contexts. Conflict of interest problems need to be addressed. The agency, not the propriety interest, must produce and review the data. There is a new set of questions to address than just animal drugs. This is not like testing a chemical; this is not traditional genetics. There is significant uncertainty about what the right questions to ask are, as illustrated by the open-ended nature of the guidance. There must be post-market tracking. The agency needs more resources and more statutory authority to address these fundamental problems. In addition to FDA, where are the other agencies? What is their role, their authority, on an issue with the capacity to impact in new and novel ways both public health and the environment? Where is the overarching federal policy? Until and unless this happens, the proposal to move forward with GE animals should be immediately halted.

Moreover, returning to the former failing, transparency, the use of the drug provisions conflicts with NEPA's mandates for public participation, process and information. FDA has a fundamental conflict in applying the drug provisions as is with complying with NEPA. This is not just a process for the agency. This is a societal question – do we or don't we as a society want this fundamental change and new GE products? Finally, labeling for something as fundamentally novel as a GE animal must be required as part of this new oversight framework. In addition, consultation with appropriate state regulatory agencies regarding proposed uses of GE animals should be a mandatory component of federal policy approaches. Regulation should be clear that FDA authority does not exempt or preempt state laws or regulations regarding GE animals. Industry should be required to consult with relevant state authorities as well.

As such, we are opposed to FDA going ahead and attempting to regulate GE animals without further statutory authority. We urge the agency to shelf this proposal and request further authority from Congress. At the very least, the agency should wait until the new administration begins to take ANY further action.

If the agency remains determined to go ahead unjustifiably with its proposal in the face of overwhelming public opposition, lack of proper legal authority and lack of scientific evidence of safety or even benefit, we include the following analysis on why the current proposal is wholly inadequate.

Problems with the Guidance for Industry document

The introduction of the proposed Guidance for Industry document correctly notes that guidance is not binding on either the public or the FDA. For this reason, we believe that the FDA guidance document should be reworked as draft regulations that would be binding on the FDA and the producers and sellers of genetically engineered (GE)

animals. Ironically, the title contains the phrase “regulation of genetically engineered animals”, but then the text explains that the FDA does not intend to regulate. The FDA decision not to seek new legislation and propose binding regulations continues its trend towards promoting unregulated markets that breed insecurity, public distrust and shifts the health risks of the product from the producer to the consumer

FDA plans do not require or even suggest labeling for most kinds of GE animals. Yet, given the fact that the new genes engineered into these animals, create not only novel foods but also entirely new animals species, GE animals should be labeled. After all, the law already requires that milk from species other than cows to be labeled as coming from the species that produced it.¹ Surely, if the public deserves to know that it is consuming goat milk instead of cow milk, it deserves to know when it is consuming genetically engineering meat or milk.

The implied assumption that the manner of heritability of rDNA constructs is well enough known to proceed with approving GE animals has been called into question by recent scientific research.² Recent genome-wide association studies of a variety of animals demonstrate that there are many variants in genes and that genes cooperate to create many more gene products than scientists believed to exist only a few years ago. None of the subsequent discussion in the document addresses this missing science.

I. Statutory and Regulatory Authority

A. The Regulated Article

We agree that an rDNA construct in a GE animal meets the FFDCA drug definition, but as noted above, we also believe that new legislation needs to be developed to address more adequately the special aspects of GE animals. We also believe that since where a rDNA construct goes in the germline of an animal varies from one attempt to another, that each animal line derived from a separate transformation event should be considered a new animal drug. However, since some animals may be derived from an animal that was genetically engineered or derived from a clone of the original GE animal, we recommend that the cloned line and the traditionally bred line is treated differently and given separate INAD files. Several studies cited in the FDA risk assessment on cloning indicate that the cloning process itself may introduce changes into the genome of the animal. It cannot, therefore, be assumed that all generations of offspring from the original insertion of the rDNA construct are identical, even if the rDNA construct remains in the same location in the clones and their offspring. Since cloning, in essence, represents a different manufacturing method for the “drug”, as discussed in 21 CFR 514.1 (b) (5), cloned

¹ See “Grade A Pasteurized Milk Ordinance (2003 Revision) G7F1258” at <http://www.cfsan.fda.gov/~ear/pmo03-2.html> Section 4. Labeling says at 3. “The common name of a hooved mammal producing milk shall precede the name of the milk or milk product when the product is made from other than cattle’s milk. As an example, “Goat”, “Sheep”, “Water Buffalo”, or “Other Hooved Mammal” milk or milk products respectively.”

² See, for example, a discussion of the problems of understanding heritability in NATURE Vol 456 6 November 2008, p. 18-21. See also, the discussion of genes as ‘multitaskers’ in NATURE online 2 November 2008 doi:10.1038/news.2008.1199

animals need to be evaluated separately from animals that have been derived through micro-injection followed by more traditional breeding techniques. The requirements of that would require disclosure of the expertise of the cloning scientists used to make the clone is important because cloning studies indicate a great deal of variability exists between the labs and the cloning techniques employed by the various laboratories.

B. Enforcement Discretion:³

We recommend that the FDA subject all animals to premarket approval requirements, regardless of whether they are intended for food. This is especially important for animals that commonly are eaten as food but may be raised to produce drugs in their milk or other bodily fluids. On several occasions, animals raised as pharmaceutical animals have been intentionally or accidentally released into the human food supply.⁴

Disposition of Animals:

The FDA guidance document mentions, “there are concerns over the disposition of GE animals that could pose human, animal, or environmental risks,” but it makes no direct recommendations regarding the disposal of animals. Given the fact that many dead animals on farms are now sent directly to rendering facilities where they are made into animal feed or fats used in human cosmetics and other products used by humans, it seems prudent for a guidance on the rendering of animals to accompany this document.

II. Investigational Use of GE animals

A. Shipping and Labeling of Investigational GE Animals and their products:

The FDA is relying on 21 CFR 511.1(b) to regulate GE animals as a “new animal drug”. The challenges of doing so are profound because the regulation is designed for drugs that are administered to regulate an animal whose every cell contains the “drug” at all phases of its life. Animal drugs ordinary can be expected to pass out of the animal after they are used. Viewing rDNA constructs as a new animal drug means that the FDA would be introducing a new concept of a drug that is intended to reside in every cell of an animal for its entire life span. This renders meaningless the concept of regulating drug residues. Indeed, if the rDNA construct does not remain in the animal, then it is a failed

³ See our longer discussion of this issue at the end of this document.

⁴ See, for example, discussion of a release from the transgenic pig research program at the University of Illinois’s Champaign-Urbana. The FDA required the researchers to destroy all of the transgenic pigs after the research was completed, but in April of 2001, 386 of the pigs born of transgenic parents were sold to a livestock dealer. Associated Press, FDA investigates Biotech Pigs, *New York Times*, Feb. 6, 2003
FDA Talk Paper, Feb. 5, 2003 <http://www.fda.gov/bbs/topics/ANSWERS/2003/ANS01197.html>

See, also, discussion of a 2001 incident that may represent the first case of US consumers eating genetically engineered meat. Meat from transgenic pigs at the University of Florida was made into sausages after an employee stole and sold three pigs. The pigs were modified to carry a copy of the rhodopsin gene, which affects eye function.

Sylvia Pagán Westphal, Pigs Out, *New Scientist Magazine*, issue 2301, July 28, 2001

experiment. Again, the FDA needs new law and regulations that address this aspect of the GE animal and makes the current drug regulations inadequate for the oversight of GE animals.

Labeling will apparently be required, but it is obvious that the text of the required label in the current regulations was not intended to apply to whole animals. The label states: *“Caution. Contains a new animal drug for use only in investigational animals in clinical trials. Not for use in humans. Edible products of investigational animals are not to be used for food unless authorization has been granted by the U.S. Food and Drug Administration or by the U.S. Department of Agriculture.”* Even the alternative labeling still recommends that the label wording be included on the carton, if not the drug itself. Unless the FDA plans to require such labeling on every barn that holds a GE animal and every vehicle that transports a GE animal, this would not work.

In at least two instances, food from GE animals may have already been eaten by humans. As this suggests, clearer labels that attach to the animal may be needed to prevent unauthorized consumption of GE animals. The FDA and the USDA need to develop a foolproof system of labeling system. Labeling should be required on both the investigational animals and food from animals that are permitted for human consumption. The label needs to include common name/breed/line/genus/species/cloning status, which specific rDNA constructs have been added or deleted, and where the rDNA constructs have been placed in the genome. If and when the FDA approves an animal for food, only the specific breed/line/cloning status that was studied should be approved.

Since FDA and USDA have limited nutritional profiles for meat and milk and already require labeling of milk from different species, both agencies should require any change in an animal’s rDNA constructs to be labeled and any products from the animals to be labeled.

C. Investigational Food Use Authorizations

A major defect in using the new animal drug guidelines to approve GE animals for food becomes clear from a reading of 21 CFR 514. Clearly, the guidelines in 21 CFR 514 were not written with the approval of entire animals as a drug in mind. The standards do not address “drugs” like a new rDNA construct that will be in the animal for its entire lifecycle, during which the proteins expressed by the sequence may vary as a consequence of normal aging or aging that is accelerated by the insertion of the rDNA construct itself. The 514 guidelines do not require assessment of the suitability of the animal as food throughout its entire lifecycle. They do not even require testing of the animals during the time(s) of their lives when they are most likely to be consumed. No tests for toxicity, allergenicity, greater susceptibility to pathogens, how the change affects the animals’ ability to metabolize food or the life-cycle health of the animal, including the likelihood of cancers being caused by a new rDNA construct.

THE FDA NEEDS NEW LEGISLATION THAT AMENDS THE NEW ANIMAL DRUG REVIEW PROCESS to make it more amenable to assessing the problems

associated with the production of GE animals. It must not rely upon research protocols and reviews designed for drugs that are not intended to be in the animals for their entire lifespan.

The research-sampling plan should require a minimum number of animals that is at least as large as sampling plans required for widely used drugs. It also needs to include data from as many generations as possible⁵ and to include animals from alternating generations, as suggested by FDA. (e.g. F5 and F7).

Section 514.1 (b) (6) requires that samples of the new animal drugs are submitted to the CVM division of FDA if requested by the FDA. This needs to be made mandatory. The FDA must require samples of the animals taken throughout the animal's entire lifespan so that epigenetic changes caused by inserting the rDNA construct into the animals can be tracked throughout their life.

We appreciate the expectation that the developers of GE animals will be required to include "method of detection that can be used to identify the inserted GE construct in the resulting GE animal." We would further urge the FDA to require an "economical method of detection", i.e., a simple test for the presence of the construct that is easy for both the FDA and other researchers to implement.

Section 514.1 (b)(8) already requires that sponsors submit to the FDA all "information relevant to safety and effectiveness for a new animal drug, favorable and unfavorable", but without complete transparency, we doubt that it could thoroughly evaluate all of the data it received as effectively as a more public process. The data that the FDA receives should include data on the types of animal feed used and which drugs they received. If GE animals require special feeds or medicines to survive, the public has a right to know. Moreover, laboratory studies should replicate, as closely as is feasible, the actual conditions that the animals will live in as production animals.

The issues of secrecy raised in 514.11 on data confidentiality undermines any possibility of trust in the FDA process. It is simply unacceptable to withhold information about a new animal drug application wherein the application of a new GE animal is kept secret from the public until the FDA makes a decision. Unlike the standard drug application process, wherein the standards of review are clear and generally understood by both the applicants and the public, the standards for the review of GE animals are evolving with the applications that the FDA receives and processes. . The standards of scientific review used by the FDA must be of the highest scientific caliber and conducted by reviewers with no conflict of interest. Both the standards that the FDA will use and the complete biography and employment history of both FDA staff reviewers and outside peer reviewers must be disclosed. To encourage trust in its process, FDA MUST REQUIRE

⁵ Dr. John Phillips, the University of Guelph researcher, whose team has developed a line of pigs that includes genetic changes that allow the animals to better process phosphates, told us that he now has ninth generation pigs. This is perhaps a suitable lineage for sampling.

FULL DISCLOSURE OF ALL DATA FOR AND AGAINST AN APPLICATION FOR A GE ANIMAL.

VI Imports

We urge the FDA to deny approval of the imports of any GE animals (or their products) that have not been subject to a review process in the exporting country that is at least as rigorous as the US process. Moreover, they should not be imported until they have.

Again, we strongly urge FDA to discontinue its current efforts at commercializing GE animals until and unless new statutory authority is granted alleviating the fundamental gaps and flaws in using FDA's out-dated FFDCa. Hence, if FDA unjustifiably determines that GE animals are approved for the market via imports, then regulations must be adopted to address the unique food safety concerns that may develop during the production and processing of GE animals. Under the FFDCa, an "adulterated" food cannot enter interstate commerce.⁶ An "adulterated" food includes food that contain poisonous or deleterious substances or food that has been "prepared, packed, or held under insanitary conditions."⁷ To prevent contamination, FDA must require adequate monitoring, reporting, and inspecting of potential food safety hazards by domestic producers and importers before GE animals enter the market. Furthermore, FDA must conduct its own inspections to ensure that the public does not consume food harmful to their health.

Regulation of GE Animals as a Food Additive is Also Required

Although FDA has stated it is regulating transgenic animals as, even if they have some similarities to other GE animal drugs, producers of these animals clearly intend in most, if not all, cases to market them as food. Accordingly, in addition to regulating the process of transgenic animals as new animal drugs, these products must not be has been approved for use in food unless or until they are regulated in accordance with FDA's statutory requirements for regulating food additives.⁸ Under the FFDCa, the FDA must

⁶ 21 U.S.C. § 331.

⁷ *Id.* § 342(a).

⁸ Under 21 U.S.C. § 321(s)(5), a new animal drug is excluded from the definition of food additive. However, previously the agency has admitted that future GE animals could be regulated as a food additive instead of as an animal drug; accordingly, FDA must immediately take steps to insure that there are no regulatory gaps allowing GE animals to allude mandatory pre-market safety review. Here is another clear example of the inadequacies of what FDA is proposing. GE animals are clearly food additives in ways that other new drugs are not. Accordingly, FDA must make the regulatory exemption not apply here and require review under both provisions. See generally Office of Technology Assessment, Harmful Non-Indigenous Species in the United States, available at <http://www.wws.princeton.edu/~ota/disk1/1993/9325.html>

regulate all food additives to ensure their safety of use prior to their appearance on the market. For example, a transgenic salmon containing an inserted growth hormone gene that meets the definition of food additive should also be regulated as a food additive.

The FFDCFA, as amended by the Food Additive Act of 1958, defines a “food additive” as follows:

any substance the intended use of which results or may reasonably be expected to result, directly or indirectly, *in its becoming a component or otherwise affecting the characteristics of any food* (including any substance intended for use in producing, manufacturing, packing, processing, preparing, treating, packaging, transporting, or holding food; and including any source of radiation intended for any such use), if such substance is not generally recognized, among experts qualified by scientific training and experience to evaluate its safety, as having been adequately shown through scientific procedures (or, in the case of a substance used in food prior to January 1, 1958, through either scientific procedures or experience based on common use in food) to be safe under the conditions of its intended use . . . (emphasis added)⁹

In a GE salmon’s case for example, the transgene and its expression products are additives to a conventional fish that will be present throughout the fish, consumed when eaten, and reasonably affect the characteristic of the food. The growth hormone transgene affects the characteristics of the fish by causing it to grow as much as ten to thirty times faster than wild salmon. Transgenic fish have demonstrated levels of growth hormone more than thirty times that of conventional fish.¹⁰ Moreover, the agency has already conceded that, but for the “generally recognized as safe” exclusion, the transferred genetic material and intended expression products used in plant-based genetically engineered foods meet the statutory definition of “food additive.”¹¹

The FFDCFA excludes from the definition of “food additive” only substances that are generally recognized as safe “GRAS” either: (1) because they were used in foods before January 12, 1958; or (2) because they have been proven GRAS through scientific procedures. Neither exclusion applies to GE animals. First, because genetic engineering (including rDNA) technology was not used in food animals prior to 1958, substances used and expressed through this technology cannot be exempted from the definition of food additive on grounds of “prior safe use.” Second, GE animals have never shown through scientific procedures to be GRAS.¹² To the contrary, there remains substantial

⁹ 21 U.S.C. § 321(s)(emphasis added).

¹⁰ U.S. Patent No. 5,998,697 (issued Dec. 7, 1999).

¹¹ 57 Fed. Reg. at 22990 (explaining that “in the case of foods derived from new plant varieties, it is the transferred genetic material and the intended expression product or products that could be subject to food additive regulation, if such material or expression products are not GRAS.”).

¹² The proponent of a GRAS exemption bears the full burden to prove that the use of a substance is GRAS. Emali Herb, Inc. v. Heckler, 715 F.2d 1385, 1391 (9th Cir. 1983). Specifically, the FFDCFA imposes on the GRAS proponent a two part legal standard requiring: (1) technical evidence that a particular use is safe and (2)

disagreement within the scientific community as to the safety of GE animals. Therefore, before any GE animals are permitted to be marketed as a food, FDA should require producers to undergo FDA's petition process to demonstrate the safety of the food additive.

If toxicology tests are inadequate for assessing the safety of transgenic animals, then FDA must develop and mandate specific testing protocols to determine whether there are toxicity and other unintended effects within transgenic animals that may affect human health. Any approval of a GE animal application prior to the agency requiring such testing data would be inconsistent with the intent and scope of the FFDCRA, which places the legal burden upon the applicant to establish safety.

Given the uncertain and potentially dangerous human health effects of GE animals, FDA must mandate a comprehensive pre-market safety review of such products under both the animal drug and food additive requirements

The FDA Must Establish Full Transparency and Public Involvement in Any Established Regulatory Approval Process for GE animals

As the FDA is well aware, the introduction of GE animals into the food supply is a major issue of interest and concern among the American public. Despite the failings of its statutory authority regarding standards for review, if FDA is still determined to go forward unjustifiably with GE animals, the agency must at the very least make the FDA regulatory process addressing approvals of GE animals engage public comment prior to decision making. FDA must adopt regulatory procedures ensuring full public involvement prior to any agency action taken concerning transgenic animals. In announcing use of the new animal drug application procedures, FDA has taken actions that will prevent adequate public participation in this regulatory process. Under the new animal drug application process notice to the public about a GE animal will only be made after an order is issued by the FDA establishing a regulation approving commercialization.¹³ Such limited public involvement is inconsistent with the spirit of recent federal pronouncements on democratic governance and will only serve to sap the public's confidence in the FDA's oversight processes. Under Executive Order No. 12,866, each federal agency is directed "to provide the public with meaningful participation in the regulatory process."¹⁴ This meaningful opportunity to comment on regulatory proposals in most cases "should include a comment period of not less than 60 days."¹⁵ A regulatory process that fails to provide a comment period prior to the approval of transgenic foods will prevent any public participation.

a finding that this technical evidence of safe use is "generally known and accepted" among qualified scientists in the field. 21 U.S.C. § 321(s). In the case of GE animals, neither of these legal burdens has been met.

¹³ 21 U.S.C. § 360b(i); 21 C.F.R. § 514.105(a).

¹⁴ Exec. Order No. 12,866, 58 Fed. Reg. 51735 (1993).

¹⁵ Id.

We request the FDA to amend its public notice procedures for any regulatory action taken on GE animals to be consistent with the Food Additive Petition public notice provisions. Under such requirements, the public would be notified in the Federal Register of any receipt of a GE animal's application¹⁶ and of any order approving commercialization.¹⁷ The public would also be able to object to any approval of GE animals and request a public hearing concerning the approval order.¹⁸

The agency should grant the requests outlined above, otherwise the validity of any FDA decision on matters concerning GE animals could be subject to challenge because of potential violations of the APA.¹⁹ Courts have repeatedly recognized the laudable goals of the APA's notice and comment requirement to increase public participation and fairness in agency decision making. The law is well settled that the APA requires the FDA.

Provide notice of its proposed rulemaking adequate to afford 'interested parties a reasonable opportunity to participate in the rulemaking process.' Such notice must not only give adequate time for comments, but also must provide sufficient factual detail and rationale for the rule to permit interested parties to comment meaningfully.²⁰

FDA Is Required Under The National Environmental Policy Act To Review The Impacts To Human Health And The Environment

The National Environmental Policy Act ("NEPA") is the "basic national charter for protection for the environment."²¹ NEPA is intended to "promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man."²² The duties under this section are not "inherently flexible."²³ In fact, "[c]onsideration of administrative difficulty, delay or economic cost will not suffice to strip the section of its fundamental importance."²⁴ The purpose behind NEPA is to "insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken."²⁵

Recognizing the affects of new technologies on the environment, Congress explicitly states in NEPA that "new and expanding technological advances" are activities that could threaten the environment.²⁶ In the legislative history, Congress expressed its concern

¹⁶ 21 U.S.C. § 348(b)(5); 21 C.F.R. §§ 171.1(i)(2), 571(i)(2).

¹⁷ 21 U.S.C. § 348(e); 21 C.F.R. §§ 171.100(a), 571.102(a).

¹⁸ 21 U.S.C. § 348(f)(1); 21 C.F.R. §§ 171.110, 571.110. Any objections and request for hearings are governed by 21 C.F.R. Part 12.

¹⁹ 5 U.S.C. § 553.

²⁰ Florida Power & Light Company, et al. v. NRC, 846 F.2d 765, 771 (D.C. Cir. 1988). See also Connecticut Light & Power Co. v. NRC, 673 F.2d 525, 530-31 (D.C. Cir.1982); Home Box Office, Inc. v. FCC, 567 F.2d 9, 35 (D.C. Cir. 1977).

²¹ 40 C.F.R. § 1500.1.

²² 42 U.S.C. § 4321.

²³ Calvert Cliffs Coordinating Comm. Inc. v. U.S. Atomic Energy Comm'n, 449 F.2d 1109 (D.C. Cir. 1971).

²⁴ Id.

²⁵ 40 C.F.R. § 1500.1(b),(c).

²⁶ 42 U.S.C. § 4331(a).

with “[a] growing technological power * * * far outstripping man’s capacity to understand and ability to control its impact on the environment.”²⁷ Thus, in order to understand and control the effects of this new technology, Congress requires federal agencies to consider the environmental effects of new technology by complying with the requirements of NEPA. In addition to environmental concerns, the proposed action’s possible direct, indirect, and cumulative impacts on public health must be reviewed.²⁸

As mandated by Congress, FDA must comply with NEPA before approving the commercialization of GE animals. FDA’s decision on whether or not to approve GE animals as an animal drug and a food additive is a major federal action that may significantly affect the environment. Therefore, before this decision is reached, FDA is required to consider fully and completely the human health and environmental impacts as part of the NEPA process.

(1) FDA’s responsibilities under the National Environmental Policy Act

To accomplish NEPA’s purposes, all federal agencies are required to prepare a “detailed statement” regarding all “major federal actions significantly affecting the quality of the human environment . . .”²⁹ This statement - - known as an Environmental Impact Statement (“EIS”) - - must describe (1) the “environmental impact of the proposed action,” (2) any “adverse environmental effects which cannot be avoided should the proposal be implemented,” (3) “alternatives to the proposed action,” (4) “the relationship between local short-term uses of man’s environment and the maintenance and enhancement of long-term productivity,” and (5) any “irreversible or irretrievable commitment of resources which would be involved in the proposed action should it be implemented.”³⁰

To determine whether an EIS is required, federal agencies must prepare an Environmental Assessment (“EA”), that provides sufficient evidence and analysis to support the agency’s determination on whether a proposed action will significantly affect the environment. The Council on Environmental Quality (“CEQ”) factors for determining the “significance” of an action include: (1) “the degree to which the proposed action affects public health or safety,” (2) “the degree to which the effects on the quality of the human environment are likely to be highly controversial,” (3) “the degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks,” (4) “[t]he degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration,” or (5) “the degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical

²⁷ Found. on Economic Trends v. Heckler, 756 F.2d 143, 147 (D.C. Cir. 1985) quoting S. Rep. No. 91-296 (1969).

²⁸ 40 C.F.R. § 1508.8(b); Baltimore Gas & Elec. Co. v. NRDC, 462 U.S. 87, 106 (1983)(explaining that “NEPA requires an EIS to disclose the significant health, socioeconomic, and cumulative consequences of the environmental impact of a proposed action.”).

²⁹ 42 U.S.C. § 4332 (C).

³⁰ Id.

under the Endangered Species Act of 1973.”³¹ The “presence of one or more of these factors should result in an agency decision to prepare an EIS.”³²

As a limited exception to NEPA’s requirements, agencies may categorically exclude a class of actions. However, if the proposed action may “significantly affect the quality of the human environment,” then the agency must prepare an EA/EIS.³³ Furthermore, FDA’s own regulations require an EA/EIS when the action may seriously harm the environment or an endangered species.³⁴

(2) Human Health Dangers Require FDA to Conduct an EIS for GE Animals

FDA must comply with NEPA before GE animals are approved as a safe food product.³⁵ If FDA allows GE animals to be consumed by the public, this will represent the first time that a transgenic animal will be part of the food supply. Due to this significant unprecedented action, FDA must perform an EA/EIS for each animal proposed for market in order to review adequately the affects of GE animals on human health.³⁶ There are numerous public health and safety issues that should be reviewed in an EIS. The Supreme Court has recognized that NEPA requires an EIS to disclose the significant health impacts of a proposed action.³⁷

(3) Environmental Impacts Require an EIS

NEPA requires FDA to conduct an individual EIS for each GE animal proposed for marketing. FDA is required to conduct an EA/EIS before any action on the Investigational New Animal Drug (“INAD”) is conducted and before approving a New Animal Drug Application (“NADA”).³⁸ In addition, approvals of food additive petitions requires an EA/EIS.³⁹

Any decision to exclude categorically these actions from NEPA should be rejected because the CEQ factors for identifying the “significance” of this action on the environment, requiring an EA/EIS, are present. Additionally, an EA/EIS must also be prepared for any action that may affect an endangered or threatened species or its

³¹ 40 C.F.R. § 1508.27(b)(2)(4)(5)(6)(9). The CEQ issued regulations implementing NEPA in response to President Carter’s Executive Order No. 11991 (1977). See Andrus v. Sierra Club, 442 U.S. 347, 357 (1979). The Executive Order directs federal agencies to “comply with the regulations issued by the Council.” See id., quoting Exec. Order 11991. The Supreme Court has held that these regulations are entitled to substantial deference by the courts. Id. at 358; Marsh v. Oregon Natural Resources Council, 490 U.S. 360, 372 (1989).

³² Public Service Co. of Colo. v. Andrus, 825 F. Supp. 1483, 1495 (D. Idaho 1993); See Friends of the Earth, Inc. v. U.S. Army Corp of Eng’rs, 2000 U.S. Dist. LEXIS 11755 (D.D.C. 2000).

³³ 40 C.F.R. § 1508.4.

³⁴ 21 C.F.R. § 25.21(stating that FDA requires an EA when the “available data establish that, at the expected level of exposure, there is the potential for serious harm to the environment” and the action may adversely affect a species or habitat of a species protected by the Endangered Species Act).

³⁵ See 42 U.S.C. § 4332 (C).

³⁶ 40 C.F.R. § 1508.27(b)(2),(6).

³⁷ Baltimore Gas & Electric Co. v. NRDC, 462 U.S. 87, 106 (1983).

³⁸ 21 C.F.R. § 25.20(m).

³⁹ Id. § 25.20(i).

habitat.⁴⁰ GE animals create a new threat that exponentially increases risk of harm from something like invasive species, which are already decimating some native species. GE animals are more like species from another planet. Their creation and consideration should per se require an EIS. The FDA is also required to conduct an EA/EIS when the effects of an action are likely to be highly controversial.⁴¹ FDA's actions in considering GE animals are beyond merely highly controversial, more like beyond the pale, and certainly meet that bar.

Additionally, “[i]f substantial questions are raised whether a project may have a significant effect upon the human environment, an EIS must be prepared.”⁴² FDA has already admitted several environmental concerns about transgenic fish for example, including, “competition with wild populations, movement of the transgene into the wild gene pool, and ecological disruptions due to changes in prey and other niche requirements in the transgenic variety versus the wild populations.”⁴³ Considering the agency's own concerns and the large amount of evidence demonstrating the potential harm of GE animals on the environment, FDA must fully and completely review the environmental impact by conducting not only an EA, but also an EIS.

Categorical exclusions from NEPA review would be arbitrary and capricious and contrary to law as well as ethically deficient. INADs (guidance, p.10) require more impacts be addressed, including intertwined socio-economic impacts.

The omission of any of these considerations will preclude a meaningful type of informed decision-making mandated by NEPA.⁴⁴ In addition to the above issues, FDA must consider the availability of alternatives.⁴⁵ The agency is responsible for rigorously exploring and objectively evaluating all reasonable alternatives.⁴⁶ The human health and environmental impacts of the proposed action and alternatives should be listed in comparative form in order for the agency and the public to review the information.⁴⁷

Consistent with CEQ's regulations, the alternative of “no action” must be included within the review.⁴⁸ After reviewing all alternatives, FDA should present the alternatives in a draft EIS for the public to review.⁴⁹

⁴⁰ 40 C.F.R. § 1508.27(b)(9); 21 C.F.R. § 25.21.

⁴¹ 40 C.F.R. § 1508.27(b)(4). See Found. for North American Wild Sheep v. U.S. Dep't of Agric., 681 F.2d 1172, 1182 (9th Cir. 1982)(explaining that the term “controversial” refers to the existence of a “substantial dispute . . . as to the size, nature, or effect” of the proposed action.); See Coalition on Sensible Transp. Inc. v. Dole, 642 F. Supp. 573, 587 (D.C. Cir. 1986).

⁴² Found for North American Wild Sheep v. USDA, 681 F.2d 1172, 1178 (9th Cir. 1982).

⁴³ Questions and Answers, supra note 95. <http://www.fda.gov/cvm/fda/infores/consumer/transgen.htm>

⁴⁴ See Found for North American Wild Sheep, 681 F.2d at 1178.

⁴⁵ 42 U.S.C. § 4332(C)(iii), 40 C.F.R. § 1508.9(b).

⁴⁶ 40 C.F.R. § 1502.14(a).

⁴⁷ Id.

⁴⁸ Id. §1502.14(d). Bob Marshall Alliance v. Hodel, 852 F.2d 1223 (9th Cir. 1988)(explaining that “[i]nformed and meaningful consideration of alternatives – including the no action alternative – is thus an integral part of the [NEPA] statutory scheme”).

⁴⁹ Id. § 1503.1.

4. FDA must conduct a Programmatic Environmental Impact Statement and Review the Impacts to Human Health and the Environment

A programmatic EIS (PEIS) is called for under the CEQ NEPA regulations, which define a “Federal action” broadly to include, in pertinent part, when there is:

Adoption of programs, such as a group of concerted actions to implement a specific policy or plan; systematic or connected agency decisions allocating agency resources to implement a specific statutory program or executive directive.⁵⁰

If FDA enacts new regulations, or amends existing regulations, or adopts an official policy in another form on GE animals, such programmatic regulatory action would necessitate a PEIS if the action “significantly affects the quality of the human environment.”⁵¹ Moreover, an agency “program” or “proposal” that exists in fact, but is not necessarily expressly declared by the agency, also requires a PEIS.⁵² Accordingly, if EPA declines to enact or amend its regulations, but instead continues acting pursuant to a “de facto” GE animal policy, such concerted action would also necessitate a PEIS.

Compliance with the Endangered Species Act

As recognized by the Supreme Court, the Endangered Species Act (“ESA”) is “the most comprehensive legislation for the preservation of endangered species ever enacted by any nation.”⁵³ The ESA obligates federal agencies “to afford first priority to the declared national policy of saving endangered species.”⁵⁴ To that end, the ESA contains numerous substantive and procedural provisions designed to protect species listed as threatened or endangered under the Act.

One such provision, Section 7, requires federal agencies to “insure that any action authorized, funded, or carried out by such agency . . . is not likely to jeopardize the

⁵⁰40 C.F.R. § 1508.18(b)(3) (defining “Federal action”). CEQ’s “Question 24a” is instructive here as it addresses programmatic compliance on the topic of: “When are EISs required on policies, plans or programs?” It provides:

An EIS must be prepared if an agency proposes to implement a specific policy, to adopt a plan for a group of related actions, or to implement a specific statutory program or executive directive. In addition, the adoption of official policy in the form of rules, regulations, and interpretations pursuant to . . . formal documents establishing governmental or agency policy which will substantially alter agency programs, could require an EIS It should be noted that a proposal may exist in fact as well as by agency declaration that one exists.

46 Fed. Reg. 18026, 18033 (Forty Most Asked Questions Concerning CEQ’s NEPA Regulations) (Question and Answer 24(a)).

⁵¹ 21 C.F.R. § 25.22(b).

⁵² See 40 C.F.R. § 1508.23 (Defining “Proposal” to include that a “proposal may exist in fact as well as by agency declaration that one exists”).

⁵³ *Babbitt v. Sweet Home Chapter of Comm. for a Great Or.*, 515 U.S. 687, 698 (1995).

⁵⁴ *Tenn. Valley Auth. v. Hill*, 437 U.S. 153, 185 (1978).

continued existence of [endangered or threatened species] or result in the destruction or adverse modification of [critical] habitat.”⁵⁵ Thus, before engaging in any type of activity that may have direct or indirect effects on endangered species or critical habitat, agencies must “consult” either the Fish and Wildlife Service (“FWS”) or the National Marine Fisheries Service (NMFS) in order to evaluate the impact of such agency action.⁵⁶ FWS regulations implementing section §7(a)(2) state that such formal or informal consultation must be initiated whenever an agency determines its action may affect a listed species, and that ongoing actions must be re-evaluated when species that may be affected by those actions are listed.⁵⁷

The Act’s consultation provision applies to “activities or programs of any kind authorized, funded, or carried out, in whole or in part, by Federal agencies in the United States or upon the high seas.”⁵⁸ The concept of agency action has been given broad application by the courts and agency regulations, including the promulgation of regulations, the granting of licenses, and actions directly or indirectly causing modifications to land, water, or air.⁵⁹ Other examples of activities include the creation of interim management strategies,⁶⁰ and ongoing activities and projects.⁶¹

If an agency action may affect a listed species, then the federal agency must engage in a formal consultation and obtain a biological opinion from sister agencies.⁶² To adequately review the effects of the action, the federal agency must provide the Secretaries with “the best scientific and commercial data available.”⁶³ Then, the Secretaries must review this information, evaluate the status of impacted species, determine the cumulative effects of the action, and issue a biological opinion as to “whether the action, taken together with cumulative effects, is likely to jeopardize the continued existence of listed species . . .”⁶⁴ If the federal agency action is likely to jeopardize a listed species, then the Secretaries must identify alternatives.⁶⁵

The ESA prohibits an agency from proceeding with an action that may impact a listed species before the analysis required by Section 7 is complete.⁶⁶ Here, FDA must complete the ESA Section 7 requirement before FDA decides whether to approve GE animals as an animal drug. It would be arbitrary and capricious and an abuse of discretion if FDA fails to engage in formal consultations.

⁵⁵ 16 U.S.C. § 1536

⁵⁶ 16 U.S.C. § 1536(a)(2).

⁵⁷ 50 C.F.R. §§ 402.14, 402.16.

⁵⁸ 50 C.F.R. § 402.02.

⁵⁹ 50 C.F.R. § 402.02.

⁶⁰ Lane Cty Audubon Soc’y v. Jamison, 958 F.2d 290 (9th Cir. 1992).

⁶¹ Klamath Water Users Protective Ass’n v. Patterson, 191 F.3d 1115 (9th Cir. 1999).

⁶² 16 U.S.C. § 1536(b).

⁶³ 50 C.F.R. § 402.14(d).

⁶⁴ Id. § 402.14(g)(1)-(4).

⁶⁵ 16 U.S.C. § 1536(b)(3)(A).

⁶⁶ Id. § 1536(a)(2)(stating that an agency must “insure” that its actions will not jeopardize a listed species).

Labeling

Should the FDA approve the domestic marketing or importation of any GE animals, FDA must, under FFDCFA §§ 321(n), 343(a)(1) and 352(a), require the labeling of any and all GE animals, or products derived from such GE animals, because of the reasonable expectation of consumers and admitted performance and organoleptic changes in such products. The agency should initiate a rulemaking requiring all producers of GE animals to comply with mandatory labeling requirements for transgenic animals as both drugs and foods.

Under the FFDCFA, a food or drug is deemed misbranded if its labeling is “false or misleading in any particular.”⁶⁷ Further, in accordance with Section 201(n), the FFDCFA provides that:

If an article is alleged to be misbranded because the labeling or advertising is misleading, then in determining whether the labeling or advertising is misleading there shall be taken into account (among other things) not only representations made or suggested by statement, word, design, device, or any combination thereof, but also the extent to which the labeling or advertising fails to reveal facts material in the light of such representations or material with respect to consequences which may result from the use of the article to which labeling or advertising relates under the conditions of use prescribed in the labeling or advertising thereof or under such conditions of use as are customary. (Emphasis added).⁶⁸

In accordance with these sections of the FFDCFA, FDA should mandate the labeling of GE animals.⁶⁹ Allowing the marketing of GE animals without labeling would be false and misleading and violate the law. Calling a GE animal a non-GE animal is patently misbranding and an erroneous identification statement, contrary to law.

(1) GE Animals Are Required To Be Labeled Under the Drug Provisions of The Federal Food Drug And Cosmetic Act

⁶⁷ 21 U.S.C. §§ 343 (a), 352(a).

⁶⁸ 21 U.S.C. § 321(n)(emphasis added)

⁶⁹ The legislative history of the FFDCFA suggests, at a minimum, that a material fact would be an omission on a food label that a reasonable person would view as important and would thus trigger a finding of misbranding under 21 U.S.C. § 343(a). Although the FFDCFA legislative history is quiet as to what type of fact is “material” stating only the “purpose is obvious,” H.R. Conf. Rep. No. 2139 at 3, the drafters explicitly connected the language of § 201(n) with the Wheeler-Lea Act language regarding false advertising. S.5, H.R. Conf. Rep. No. 2139, 75th Cong., 3rd Sess. 3 (April 14, 1938) *reprinted in* FDA, A Legislative History of the Food, Drug & Cosmetic Act, Vol. 6 at 302 (1979); *See also*, S.1077, H.R. Conf. Rep. No. 1774, 75th Cong. 3d Sess. § 15 (February 8, 1938) *reprinted in* Charles Wesley Dunn, Wheeler-Lea Act: A Statement of Legislative History (1938) at 163. In that context the language has been traced back to the 1938 Restatement of Torts §538 which defined a fact to be material “if its existence or nonexistence is a matter to which a reasonable man would attach importance in determining his choice of action in a transaction in question.” (*See also*, 1977 Restatement of Torts 2d. § 538(2)(a), retaining identical language.) Milton Handler, The Control of False Advertising under the Wheeler-Lea Act, 6 Law & Contemp. Probs. 91, 97-98 (1939).

The FDA's classification of GE animals as new animal drugs triggers the requirement for mandatory labeling of all GE animals.⁷⁰ A new animal drug applicant seeking approval of a GE animal must submit a new animal application providing specimens of the labeling proposed to be used for such drug.⁷¹ Under the FFDCA, an animal drug is deemed to be misbranded unless its label bears specific information. Among these requirements are directions for use and warnings necessary for the protection of public health.⁷²

The introduction of GE animals into the food supply raises many potential human health concerns, including the introduction of novel allergens, new food toxicity, and other unintended effects. These new potential risks to consumer safety presented by the consumption of a new animal drug are material facts that mandate labeling.⁷³ Omitting labeling requirements for GE animals may result in increased consumer exposure to health risks without the requisite notice of encountering such risks. This outcome would be contrary to the FFDCA's overriding purpose of protecting public health.

Furthermore, the FDA has consistently required potentially allergenic foods to be labeled.⁷⁴ For example, when regulating foods named by a nutrient content claim (such as "fat free") in conjunction with a traditional standardized name (for example "reduced fat sour cream"), the agency stated:

The highlighting of ingredients that are not part of the traditional standard of identity, or that are added in excess of what is permitted by that standard, is appropriate to ensure continued consumer confidence in standardized foods. FDA believes under section 201(n) and 403(d) of the act, consumers are entitled to know how the new standardized food differs from traditional standardized food. In some cases, consumers may have allergies to certain ingredients that may not be normally encountered in the standardized food. Therefore, FDA finds that these ingredients must be highlighted.⁷⁵

Thus, the combination of the FFDCA's requirements for animal drug labeling and the agency's past precedents concerning food allergens mandates that the labeling of GE animals provide consumers with the material fact that the animals are transgenic.

2. GE Animals Are Required To Be Labeled Under The Food Provisions Of The Federal Food Drug And Cosmetic Act.

⁷⁰ See 21 U.S.C. § 352.

⁷¹ 21 U.S.C. § 360b(b)(1)(F).

⁷² 21 U.S.C. § 352(f).

⁷³ FDA has explained that the presence of an increased risk to consumer safety constitutes a "material change." See 49 Fed. Reg. 13679 (explaining that a special warning label is on protein products intended for weight loss because of the health risks associated with low calorie diets).

⁷⁴ For example, the agency has noted that fish proteins are often common food allergens that may illicit allergic response and the use of such proteins in genetically engineered foods would be material under the FFDCA's labeling provisions. See 57 Fed. Reg. 22984 (May 29, 1992).

⁷⁵ 58 Fed. Reg. 2431, 2443 (Jan. 6, 1993).

The food labeling provisions of the FFDCA also mandate the labeling of all GE animals. Labeling is required **either** (1) where it is found that there are changes in a performance characteristic of a food; **or** (2) where it is found that there are organoleptic changes to the food.⁷⁶ For example, in addressing regulatory changes for food nutrient content claims, the agency has stated:

Under section 201(n) (21 U.S.C. § 321(n)) and 403 (a) of the act, the label or labeling of food must disclose to consumers what they are buying when they purchase these modified foods. Information disclosing differences in performance characteristics (e.g. physical properties, flavor characteristics, functional properties and shelf life) is a material fact under section 201(n) of the act because it bears on the consequence of the use of the article. Accordingly, this information must be communicated to the consumer on the product label, or the labeling would be misleading and the product would be misbranded under section 403(a) of the act.⁷⁷

Thus, the interpretation of § 321(n) adopted by the FDA and recognized by the courts establishes that performance changes such as alterations in food characteristics such as physical properties, flavor characteristics, functional properties and changes in shelf life must be communicated to the consumer via labeling; otherwise, such food is misleading and misbranded under § 343(a).⁷⁸ At a minimum, this agency interpretation of § 321(n) must be implemented and applied consistently and predictably.⁷⁹

The performance changes in GE animals are so evident that even the FDA itself has decided to regulate GE animals not like other animals, but rather as an animal drug. This regulatory decision requiring evidence demonstrating safety and effectiveness demonstrates that GE animals are fundamentally different from non-GE animals. Given the evidence that genetic engineering directly alters the performance characteristics of animals, including their physical and functional properties, the failure of the FDA to mandate labeling apprising consumers of such a material fact would be contrary to past agency precedent and arbitrary and capricious.

3. Patents Require Labeling

In the past, FDA has justified its failure to require labeling by claiming genetically engineered food are substantially equivalent to conventionally produced foods and thus need not be labeled. Such a position is inconsistent with the unique legal recognition granted to these food producers by the United States Patent and Trademark Office (PTO). By law, the issuance of a patent requires a determination of novelty and

⁷⁶ Stauber v. Shalala, 895 F.Supp. 1178, 1193 (W.D. Wis. 1995).

⁷⁷ 58 Fed. Reg. 2431, 2437 (June 6, 1993).

⁷⁸ If the agency now claims to depart from this existing interpretation, it must set forth a reasoned explanation from its departure of prior norms. Western States Petroleum Assoc. v. EPA, 87 F.3d 280, 284-285 (9th Cir. 1996); Telecommunications Research and Action Center v. FCC, 800 F.2d 1181, 1184 (D.C. Cir. 1986).

⁷⁹ See Morton v. Ruiz, 415 U.S. 199, 232 (1974).

nonobviousness,⁸⁰ and claims for novel disclosures are assigned one or more patent classifications. The applicant must demonstrate that the invention is novel, non-obvious, and useful.⁸¹

Such a legal prerequisite necessitates that any object “substantially equivalent” to an existing object would not be patentable subject matter. In the case of transgenic fish, for example, the PTO has clearly recognized that they are not legally “substantially equivalent” to non-transgenic fish.⁸² This legal determination clearly dictates that novel physical, organoleptic and other changes that have occur in transgenic fish are “material” fact requiring the FDA to mandate labeling.

4. Consumer Demand Necessitates Labeling

Whether GE animals are regulated as animal drugs or food additives, consumers also have a reasonable expectation that changes in their food of the magnitude created by genetic engineering will trigger labeling. Consumer demand for the labeling of a food bolsters a finding of “material fact” under the FFDCA. As the FDA has stated previously:

[T]he large number of consumer comments requesting retail labeling attest to the significance placed upon such information by consumers. Moreover, several comments argued irradiation of food altered the organoleptic properties of food thereby reducing its nutritional value. These changes in the food, the comments asserted, make the irradiation of the food a material fact that must be disclosed under section 403(a) and 201(n) of the act.⁸³

In addressing the role of public concern as it relates to labeling, the agency has further elaborated that:

In determining whether labeling is misleading, the agency must take into account the extent to which labeling fails to reveal material facts in light of representations made about the food or consequences that many result from the use of such food [section 201(n) of the act]. Therefore, the agency must decide whether the changes in the organoleptic properties of irradiated foods constitute a material fact or whether the information that a food has been irradiated constitutes information that is material to a consumer even if the organoleptic changes were not significant.⁸⁴

FDA acknowledges that the public is demanding the labeling of all genetically engineered foods. FDA states “Not surprisingly, most consumers believed that

⁸⁰ 35 U.S.C. §§ 102-103.

⁸¹ 35 U.S.C. §§ 101-103.

⁸² Devlin, Robert H. patent no. 5,998,697 (Dec. 7, 1999).

⁸³ 51 Fed. Reg. 13376, 13388 (April 18, 1986).

⁸⁴ Id. at 13390.

genetically engineered foods should be labeled.”⁸⁵ In response to its 1992 Policy Statement requesting labeling of genetically engineered foods, many people said that labels should be “clear, prominent, and not restricted to fine print.”⁸⁶ Moreover, poll after poll repeatedly shows consumer demand for the labeling of all genetically engineered foods.⁸⁷

The differences between GE animals and non-GE animals combined with consumers’ interest in knowing these differences are material fact under § 321(n), the FFDCA requires that consumers are given this information through labeling. A failure to require such labeling would be arbitrary, capricious, an abuse of discretion and contrary to law.

FDA’s Enforcement Discretion Concept Fundamentally Flawed:

We recommend that the FDA subject all animals to premarket approval requirements, regardless of whether they are intended for food or not. This is especially important for animals that are commonly eaten as food, but may be raised to produce drugs in their milk or other bodily fluids.

FDA’s view of its “enforcement discretion” in this context is fundamentally flawed from a legal as well as a policy perspective. First, to assume that the agency can “discretionarily” determine it need not apply even the limited authority it has to these fundamentally different creations is an abdication of the agency’s statutory responsibilities to protect human health and safety. As this comment shows, FDA’s oversight of this issue is unfortunately limited to what it can cobble together from existing and inapposite statutory frames such as applying the animal drug provisions of the FFDCA. FDA’s response, instead of requesting adequate and further authority from Congress, or interpreting its own authority as broadly as possible, is to notify the public that it will “discretionarily” ignore GE animals that it deems low risk! This policy is beyond the pale.

Second, what FDA calls its “enforcement discretion” is unmoored from any proper legal basis and essentially creates a massive loophole in which the agency can disavow any oversight whatsoever of these GE animals. Once again, FDA ignores the overriding issue here, which is that this is a societal question that requires public input into the process and full transparency. Such agency action will ensure public rejection and legal challenge.

In FDA’s view, the exception swallows the rule. The basic standard is the opposite: Any person “adversely affected or aggrieved” by agency action; *including a “failure to act,”* is entitled to “judicial review thereof,” as long as the action is a “final agency action for which there is no other adequate remedy in a court.”⁸⁸ Enforcement discretion “is a

⁸⁵ Memorandum from Alan Heaton to James Maryanski (Nov. 3, 1993).

⁸⁶ Id.

⁸⁷ See Compilation of Public Opinion Polls at <http://www.centerforfoodsafety.org/facts&issues/polls.html>.

⁸⁸ 5 U.S.C. §§ 701-706.

very narrow exception.... The legislative history of the Administrative Procedure Act indicates that it is applicable in those rare instances where ‘statutes are drawn in such broad terms that in a given case there is no law to apply.’⁸⁹ Here, the drug provisions and food additive provisions of the FFDCA clearly apply. *See Infra*. Whether or not GE animals are new drugs is not “committed to [FDA’s] discretion; it is based on the statutorily enumerated factors and definitions of what a “new drug” is. Similarly whether an NADA is adequate or not is not committed to FDA’s discretion; it is based on the statutorily outlined process of what a new drug application must include. Finally, whether or not to approve a NADA is similarly based on enumerated statutory determinations of safety and efficacy, not a broad discretionary determination. Only the must later decision, post-approval, to enforce or prosecute violations, is left to the discretion of the agency.⁹⁰ That is the intent of the “limited” exception. Finally, the Court has been clear that the exception does expressly not apply in circumstances where it “could justifiably be found that the agency has consciously and expressly adopted a general policy that is so extreme as to amount to an abdication of its statutory responsibilities.”⁹¹ FDA’s policy is just such an abdication.

The determination of whether or not FDA has jurisdiction and authority is not an “enforcement” determination; either the agency has authority over these animals or not. If the agency does have jurisdiction, than the propriety interests behind them must comply with the statutory authority, including submission of NADAs and/or IADAs. The enforcement decisions and provisions would only apply after FDA: 1) has asserted jurisdiction; 2) applied that jurisdiction; 3) assessed the GE animal in question has applied fully with the provisions of the FFDCA, including complete full NADAs; and 4) FDA approves the GE animal. Post-approval, FDA may determine that it discretionarily does not want to have further oversight. FDA cannot abandon its authority however, at the outset. In FDA’s view, its “discretionary” determinations have no bounds or logical stopping point. This is not supported by the precedent or judicial doctrine.⁹² FDA compounds its error in grossly misinterpreting its “discretion” by then attaching to it the agency’s NEPA duties. These comments address below the agency’s NEPA duties in detail. As relevant here, the “trigger” for NEPA assessment purposes is not whether or not the agency “discretionarily” determines to disavow its authority over a GE animal. The trigger is whether the agency has taken a “major federal actions significantly affecting the quality of the human environment . . .”⁹³ The Council on Environmental Quality (“CEQ”) factors for determining the “significance” of an action include: (1) “the degree to which the proposed action affects public health or safety,” (2) “the degree to which the effects on the quality of the human environment are likely to be highly

⁸⁹ *Citizens to Preserve Overton Park v. Volpe*, 401 U.S. 402, 410 (1971).

⁹⁰ *Heckler v. Chaney*, 470 US 821, 831 (1985) (“This Court has recognized on several occasions over many years that an agency’s decision not to prosecute or enforce, whether through civil or criminal process, is a decision generally committed to an agency’s absolute discretion.”).

⁹¹ *Id.* at n.4.

⁹² FDA cites *ICTA v. Thompson*, 421 F. Supp. 2d 1 (D.D.C. 2006), but that case does not stand for any broad legal doctrine supporting the agency’s proposal. There the determination, in our view an erroneous legal one, was made in a limited fact-specific context only. As a district court case it certainly is not a controlling precedent; other courts may hold differently.

⁹³ 42 U.S.C. § 4332 (C).

controversial,” (3) “the degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks,” (4) “[t]he degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration,” or (5) “the degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.”⁹⁴ The “presence of one or more of these factors should result in an agency decision to prepare an EIS.”⁹⁵ All of these factors will be present even if FDA unlawfully determines it will not enforce the provisions of the FFDCA to a given GE animal. The GE animals *per se* raise questions of novel harms to health and the environment (1), risks that are unprecedented and uncertain (3). GE animals and their approval are controversial (2), and even more so if the agency tacitly approves any by *not* taking action or even declining to apply its own limited authority. No other agency has addressed this issue, so whatever FDA does is creating a precedent (4). And GE animals raise a fundamentally new danger to endangered species, threatening to create a new class of invasive species unlike any seen before.

Under FDA’s flawed view, should it apply its “enforcement discretion” and not act, there would then be no NEPA review necessary, which would strip the public of the only source of pre-market review and transparency into the process.

⁹⁴ 40 C.F.R. § 1508.27(b)(2)(4)(5)(6)(9). The CEQ issued regulations implementing NEPA in response to President Carter’s Executive Order No. 11991 (1977). See Andrus v. Sierra Club, 442 U.S. 347, 357 (1979). The Executive Order directs federal agencies to “comply with the regulations issued by the Council.” See id., quoting Exec. Order 11991. The Supreme Court has held that these regulations are entitled to substantial deference by the courts. Id. at 358; Marsh v. Oregon Natural Resources Council, 490 U.S. 360, 372 (1989).

⁹⁵ Public Service Co. of Colo. v. Andrus, 825 F. Supp. 1483, 1495 (D. Idaho 1993); See Friends of the Earth, Inc. v. U.S. Army Corp of Eng’rs, 2000 U.S. Dist. LEXIS 11755 (D.D.C. 2000).