Fordham Environmental Law Review

Volume 25, *Number* 3 2015 *Article* 3

There's More Energy in Coffee than Just The Caffeine: A Proposal to Revise the Non-Hazardous Secondary Materials Rule Using the Principles of Integrated Solid Waste Management

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THERE'S MORE ENERGY IN COFFEE THAN JUST THE CAFFEINE: A PROPOSAL TO REVISE THE NON-HAZARDOUS SECONDARY MATERIALS RULE USING THE PRINCIPLES OF INTEGRATED SOLID WASTE MANAGEMENT

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INTRODUCTION

Garbage, litter, refuse, and trash are all words to describe the 251 million tons of municipal solid waste (MSW) that Americans generated in 2012,[1] which represents only a fraction of the total solid waste[2] generated in the United States. MSW, to put it simply, is only the solid waste material that is generated by the residential and commercial sectors and collected by either municipal or private haulers for disposal.[3] By one estimate, the total solid waste generated

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1. *Municipal Solid Waste*, U.S. ENVTL. PROT. AGENCY, http://www.epa.gov/waste/nonhaz/municipal (last updated Feb. 28, 2014).

2. The term solid waste has several statutory and regulatory definitions. *See, e.g.*, 1 RCRA AND SUPERFUND: A PRACTICE GUIDE § 2:9 (3d ed., 2013). As used in this Note, however, "solid waste" is defined broadly to include all materials that may be managed as part of an integrated solid waste management system, including materials that may be reused, source reduced, recycled, composted, incinerated, landfilled, or disposed of in an alternative disposal technology, such as gasification or pyrolysis.

3. Examples of MSW include garbage (e.g., milk cartons and coffee grounds), refuse (e.g., metal scrap, wall board, and empty containers), sludge from a waste treatment plant, a water supply treatment plant, or an air pollution control facility (e.g., scrubber sludge), other discarded material, including solid, semi-solid, liquid,

in the United States from all sources may have been as large as 621.5 million tons in 2011.[4] The Environmental Protection Agency (EPA) estimates that Americans generate 4.38 pounds (1.99 kilograms) per person per day of trash,[5] about sixty-six percent more than the global average estimate of 1.2 kg (2.6 pounds) per person per day.[6] If all of this waste that Americans generate was not properly managed, it could, among other things, create serious hazards to the public health, pollute air and water resources, and create a public nuisance.[7]As it stands, a $55 billion dollar industry has grown in the United States to manage solid waste.[8]

Solid waste is typically regulated at the state and local levels with some overarching federal regulations,[9] but the day-to-day management is typically the responsibility of local governments or regional authorities.[10] Federal laws governing non-hazardous solid waste set standards,[11] such as criteria for landfills,[12] and provide

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or contained gaseous material resulting from industrial, commercial, mining, agricultural, and community activities (e.g., boiler slag or fly ash). *Summary of the EPA Solid Waste Program*, U.S. ENVTL. PROT. AGENCY, http://www.epa.gov/reg3wcmd/solidwastesummary.htm (last updated Oct. 31, 2012).

4. *Waste Market Overview & Outlook 2012*, WASTE BUS. J., http://www.wastebusinessjournal.com/overview.htm (last visited Mar. 22, 2014).

5. *Municipal Solid Waste*, *supra* note 1.

6. *See* DANIEL HOORNWEG & PERINAZ BHADA-TATA, WORLD BANK, URBAN DEVELOPMENT SERIES NO. 15, WHAT A WASTE: A GLOBAL REVIEW OF SOLID WASTE MANAGEMENT 8 (2012), *available at* http://documents.worldbank.org/curated/en/2012/03/16537275/waste-global-review-solid-waste-management.

7. Solid Waste Disposal Act, Pub. L. No. 89-272, § 202(a)(4), 79 Stat. 992, 997 (1965).

8. *U.S. Solid Waste Industry Reaches $55 Billion in Revenues—Innovative Conversion Technologies Poised to Shake Up the Industry*, ENVTL. BUS. INT'L, http://ebionline.org/updates/1244-us-solid-waste-industry-reaches-55-billion-in-revenues-innovative-conversion-technologies-poised-to-shake-up-the-industry (last visited Mar. 22, 2014).

9. 42 U.S.C. § 6901(a)(4) (2012); *see* House Comm. on Energy & Commerce, State Control of Management of Municipal Solid Waste, H.R. Rep. No. 103-738 (1994); *see also* BARRY S. SHANOFF, 5A-35 ENVIRONMENTAL LAW PRACTICE GUIDE § 35.01 (2013) (discussing community management of MSW and the historical role of governments).

10. 42 U.S.C. § 6901(a)(4); *What Is Integrated Solid Waste Management?*, U.S. ENVTL. PROT. AGENCY, http://epa.gov/climatechange/wycd/waste/downloads/overview.pdf (last visited Mar. 25, 2014) (hereinafter *What Is ISWM?*).

11. *What Is ISWM?*, *supra* note 10.

12. 40 C.F.R. pts. 257, 258 (2013).

financial and technical assistance and "leadership in the development, demonstration, and application of new and improved methods and processes to reduce the amount of waste and unsalvageable materials and to provide for proper and economical solid waste disposal practices."[13] State governments help monitor and enforce these standards.[14] They may also set minimum diversion standards[15] or create incentives or infrastructure, for example to promote recycling through bottle bills.[16] Local governments usually handle the day-to-day operations of the solid waste collection, sorting, processing, and disposal.[17]

Efforts to regulate solid waste management at the federal level began when Congress passed the Solid Waste Disposal Act of 1965 (SWDA), which was the first major federal law to set standards for regulating municipal waste disposal technology while recognizing that solid waste disposal is essentially a local issue.[18] Eleven years later, the SWDA was overhauled by the Resource Conservation and Recovery Act of 1976 (RCRA),[19] wherein Congress gave the EPA extensive authority to regulate hazardous waste[20] and also expanded the federal government's ability to regulate solid waste, with an emphasis on protecting groundwater, surface water, the air, and the land from contamination from solid waste.[21]

Integrated Solid Waste Management (ISWM) refers to a set of comprehensive waste management principles that considers how to effectively protect human health and the environment by preventing,

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13. 42 U.S.C. § 6901(a)(4).

14. *What Is ISWM?*, *supra* note 10.

15. *See, e.g.*, CAL. PUB. RES. CODE § 41780 (Deering 2014).

16. *See, e.g.*, MICH. COMP. LAWS ANN. §§ 445.571–576 (West 2014) (beverage containers law); *see also Michigan*, BOTTLE BILL RES. GUIDE, http://www.bottlebill.org/legislation/usa/michigan.htm (last updated June 10, 2013) (discussing Michigan's bottle bill and its impact on recycling rates).

17. *See What Is ISWM?*, *supra* note 10.

18. *Solid Waste Management on Tribal Lands*, U.S. ENVTL. PROT. AGENCY, http://www.epa.gov/region9/waste/tribal/reg.html (last updated Oct. 25, 2013).

19. Resource Conservation and Recovery Act of 1976, Pub. L. 94-580, 90 Stat. 2795 (1976).

20. *Summary of the Resource Conservation and Recovery Act*, U.S. ENVTL. PROT. AGENCY, http://www2.epa.gov/laws-regulations/summary-resource-conservation-and-recovery-act (last updated Mar. 16, 2014).

21. *Id.*; 42 U.S.C. § 6907(a)(2) (2012).

recycling, and disposing of solid waste.[22] It involves considering local needs and conditions, then selecting and implementing waste management policies and programs that most appropriately address those needs and conditions.[23] ISWM typically involves creating a local or regional plan that considers the goals and needs of the community, such as increasing the local recycling and composting rate or protecting the local water supply. With these goals in mind, the plan should select the combination of waste management activities and processes that best suit these needs while considering institutional, social, financial, economic, technical, and environmental factors.[24]

Non-hazardous secondary materials (NHSMs) are those materials that do not meet the definition of hazardous[25] and are not the primary product produced by a manufacturing, mining, agriculture, or other industrial process.[26] They are a discrete category of materials that, for the most part, have traditionally been discarded as solid waste, but are increasingly being used as ingredients in manufacturing processes and as fuels in boilers, incinerators, and other combustion units.[27] In response to the use of NHSMs as fuel in boilers and incinerators, Congress directed the EPA under Section 129(g)(6) of the Clean Air Act[28] (CAA) to define under RCRA when NHSMs would be considered solid waste when combusted in a boiler or incinerator.[29] Whether an NHSM is a solid waste or not then determines how the boiler or incinerator is regulated under the CAA. Incinerators and

22. *What Is ISWM?*, *supra* note 10; *Integrated Waste Management*, U.S. ENVTL. PROT. AGENCY, http://www.epa.gov/osw/wycd/catbook/iwm.htm (last updated Nov. 15, 2012).

23. *What Is ISWM?*, *supra* note 10.

24. *Id.*

25. For the definition of hazardous material, see *infra* note 73 and accompanying text.

26. For a more complete definition of secondary material, see *infra* note 71 and accompanying text.

27. *See EPA's Air Toxics Standards: Major and Area Source Boilers and Certain Incinerators Technical Overview Adjustments from March 2011 Final Standards*, U.S. ENVTL. PROT. AGENCY, at 2, http://www.epa.gov/airquality/combustion/docs/20121221_tech_overview_boiler_ciswi_fs.pdf (last visited Dec. 16, 2013).

28. 42 U.S.C. § 7429(g)(6) (2012).

29. The Clean Air Section 129(g)(6) act actually required the EPA Administrator to define the term "solid waste" in the Clean Air Act (CAA) pursuant to the Solid Waste Disposal Act. *See* 42 U.S.C. § 7429(g)(6).

boilers that burn non-solid waste NHSMs will be regulated under Section 112,[30] while those that burn solid waste NSHMs will be regulated under Section 129,[31] under which units are subject to stricter, and therefore more expensive, pollution controls.[32] This led to the EPA issuing the "Identification of Non-Hazardous Secondary Materials That Are Solid Waste" rule (NHSM rule) on February 7, 2013.[33]

This Note examines the NHSM Rule using the principles of integrated waste management and the EPA's waste management hierarchy. The Note will explore if and how the principles of ISWM were incorporated into the rule and will then suggest revisions to the rule to better promote ISWM. Part I of this Note will discuss the development of federal solid waste regulations, the principles of ISWM, and the waste management hierarchy. Part II will then discuss the NHSM rule's rulemaking and the content of the NHSM rule, as well as present some of the legal challenges to the final rule. Part III will then discuss the NHSM rule in the context of integrated solid waste management and suggest revisions to the rule that would better reflect the goals of the waste management hierarchy.

I. FEDERAL REGULATION OF SOLID WASTE AND INTEGRATED SOLID WASTE MANAGEMENT

A. History of Integrated Solid Waste Management

Prior to the creation of the federal regulatory scheme for solid waste, the United States generated as much as 88 million tons of MSW per year, which was roughly thirty-five percent of the MSW

30. 42 U.S.C. § 7412 (2012).

31. 42 U.S.C. § 7429 (2012).

32. Identification of Non-Hazardous Materials That Are Solid Waste, 74 Fed. Reg. 41, 53 (advanced notice of proposed rulemaking Jan. 2, 2009); Richard G. Stoll & Catherine M. Basic, *EPA's Non-Hazardous Secondary Material Rule: 'A Combination of Flexibilities'*, 44 ENR 314 (BNA) (2013); *EPA Revises Non-Hazardous Secondary Materials Rule*, ROONEY RIPPIE & RATNASWAMY LLP (May 31, 2013), http://www.r3law.com/epa-revises-non-hazardous-secondary-materials-rule.

33. Commercial and Industrial Solid Waste Incineration Units: Reconsideration and Final Amendments; Non-Hazardous Secondary Materials That Are Solid Waste, 78 Fed. Reg. 9,112 (Feb. 7, 2013) (to be codified at 40 C.F.R. pts 60, 241).

that was produced in 2012.[34] During this time, Americans would generally either take their trash to the local dump[35] or, in a more rural environment, discard it in a variety of convenient, open spaces such as "any old canyon" or on the "back 40."[36] These unregulated disposal practices led to a myriad of problems, including scenic blights, serious hazards to the public health, pollution of air and water resources, accident hazards, increases in rodent and insect vectors of disease, adverse effects on land values, public nuisances, and other interferences with community life and development.[37]

In enacting the SWDA, Congress recognized that the problems from improper waste management practices had become "a matter national in scope and in concern" that required federal action but that "the collection and disposal of solid wastes should continue to be primarily functions of the State, regional, and local agencies . . . ."[38] The purpose of the SWDA was to research and develop improved programs for solid waste disposal and to provide technical and financial assistance to interstate agencies and state and local governments for solid-waste disposal programs.[39]

The SWDA was amended a few years later by the Resource Recovery Act of 1970 (RRA),[40] which increased federal involvement in the management of solid waste, encouraged waste reduction and resource recovery, and created disposal criteria for hazardous wastes.[41] The RRA mandated the creation of guidelines for "solid waste recovery, collection, separation, and disposal systems . . . which shall be consistent with public health and welfare, and air and water quality standards and adaptable to appropriate land-use

34. *See supra* note 1 and accompanying text.

35. *See e.g.*, C & A Carbone, Inc. v. Town of Clarkstown, 511 U.S. 383, 412 (1994).

36. Kim Diana Connolly, *Small Town Trash: A Model Comprehensive Solid Waste Ordinance for Rural Areas of the United States*, 53 CATH. U. L. REV. 1, 8 (2003).

37. Solid Waste Disposal Act, Pub. L. No. 89-272, § 202(a)(4), 79 Stat. 992, 997 (1965).

38. *Id.* § 202(a)(6), 79 Stat. at 997.

39. *Id.* § 202(b), 79 Stat. at 997.

40. Resource Recovery Act of 1970, Pub. L. 91-512, 84 Stat. 1227 (1970).

41. *Solid Waste Management on Tribal Lands*, *supra* note 18.

plans."[42] It also called for the creation of "model codes, ordinances and statutes" designed to implement the purposes of the RRA.[43]

In 1976, the SWDA was substantially overhauled by RCRA, which gave the EPA significant authority over hazardous waste under Subtitle C of RCRA and also gave the federal government oversight over the disposal, management, and cleanup of solid waste under Subtitle D of RCRA.[44] RCRA was enacted to promote the "environmentally sound" methods of solid waste disposal and to "maximize the utilization of valuable resources including energy and materials which are recoverable from solid waste and to encourage resource conservation."[45] The goals of RCRA were to be accomplished through "Federal technical and financial assistance to States or regional authorities for comprehensive planning pursuant to Federal guidelines designed to foster cooperation among Federal, State, and local governments and private industry."[46] RCRA includes three main elements for the regulation of non-hazardous solid waste: criteria for sanitary landfills,[47] the prohibition of open dumping,[48] and state solid waste management plans.[49]

While the federal government was developing their regulatory scheme for solid waste, the concept of ISWM was concurrently developing.[50] ISWM is a systems approach to waste management, and was first described in 1962 as "viewing the problem in its entirety as an interconnected system of component operations and functions."[51] The systems approach incorporated the idea of using systems analysis and mathematical modeling to optimize waste management operations and strategy development.[52] The concept further evolved within solid waste authorities in the United States,

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42. Pub. L. 91-512, § 104, 84 Stat. 1227, 1232.

43. *Id.*

44. Resource Conservation and Recovery Act of 1976, Pub. L. 94-580, 90 Stat. 2795 (1976).

45. 42 U.S.C. § 6941 (2012).

46. *Id.*

47. 40 C.F.R. pts. 257, 258 (2013).

48. 42 U.S.C.A. § 6945 (2012).

49. *Id.* § 6946 (2012).

50. *See* A. J. Nordone et al., *Integrated Waste Management*, in ENCYCLOPEDIA OF LIFE SUPPORT SYSTEMS (2002).

51. FORBES R. MCDOUGAL ET AL., INTEGRATED SOLID WASTE MANAGEMENT: A LIFE CYCLE INVENTORY 21 (2d. ed. 2001).

52. *Id.*

which began to integrate solid waste transportation, processing, recycling, resource recovery, and disposal technologies into a combined waste management program.[53] Another step in the development of ISWM occurred when, in 1978, an EPA analyst stated that waste management "methods, equipment, and practices should not be uniform across the country since conditions vary, and it is vital that procedures be varied to meet them."[54] This statement provided recognition that ISWM would need to be implemented on a case-by-case basis.[55]

B. Integrated Solid Waste Management Today

Modern ISWM involves the creation of a plan to manage a community's solid waste in an environmentally friendly, socially acceptable, and economically affordable way.[56] Such a plan should use a broad definition of solid waste that includes all solid waste that will need to be or has the potential to be prevented, recycled, composted, or disposed within the area,[57] not just those materials that are solid wastes under the RCRA definition. An ISWM plan considers institutional, social, financial, economic, technical, and environmental factors.[58] An effective ISWM system will be market-oriented, in that it recognizes that there will need to be a market to receive any outputs from the system, such as compost, energy, or recyclable materials.[59] An effective ISWM system will also require flexibility to be able to adapt to technological, social, economic, and environmental changes.[60] An ISWM system should consider all available options for each material, such as considering whether paper should be recycled, composted, converted to energy, or

53. *Id.*; Nordone et al., *supra* note 50.
54. MCDOUGALL ET AL., *supra* note 51, at 21.
55. Nordone et al., *supra* note 50.
56. *Id.*
57. *What Is ISWM?*, *supra* note 10.
58. *Id.*
59. MCDOUGALL ET AL., *supra* note 51, at 19.
60. *Id.*

landfilled.[61] ISWMs may also target specific environmental impacts, such as short-lived climate pollutants.[62]

With the powers granted by RCRA and subsequent amendments, the EPA, recognizing that there is no single approach that is effective for managing all types of solid waste in all circumstances, developed a hierarchy that ranks the strategies for managing solid waste.[63] The most preferred options are source reduction and reuse, which are methods to reduce waste before it is generated by, for example, reusing or donating items, buying in bulk, reducing packaging, redesigning products, and reducing toxicity.[64] The next and second most preferred option is composting and recycling, which generally refers to any process that takes materials that would otherwise be waste, sorts and processes them, and produces a new raw material that is remanufactured into a new product.[65] The next and third most preferred option is energy recovery, also known as waste to energy, which is the conversion of waste materials into usable heat, electricity, or fuel through a variety of processes, including combustion.[66] The final and least preferred method is treatment and disposal, which may include landfilling or incineration.[67] Some commentators and proponents of holistic ISWM approaches argue that such hierarchical approaches have little scientific or technical basis and do not properly account for costs or the wide variety of

61. *See Waste Management Resources*, U.S. ENVTL. PROT. AGENCY, http://www.epa.gov/tribalcompliance/wmanagement/wmwastedrill.html (last updated Oct. 16, 2008).

62. *Integrated Solid Waste Management: Key Concepts and Benefits*, CLIMATE & CLEAN AIR COAL., http://waste.ccac-knowledge.net/sites/default/files/CCAC_images/documents/CCAC_IntegratingSolidWasteManagement-12212013.pdf (last visited Mar. 26, 2014).

63. *Non-Hazardous Waste Management Hierarchy*, U.S. ENVTL. PROT. AGENCY, http://www.epa.gov/waste/nonhaz/municipal/hierarchy.htm (last updated Nov. 22, 2013).

64. *Id.*

65. *Id.*

66. *Id.*

67. *Id.*

specific local situations.[68] Despite this and other criticism, such hierarchical approaches are still used.[69]

II. THE NON-HAZARDOUS SECONDARY MATERIALS RULE

Secondary materials represent a distinct class of materials that, under an ISWM system, have the potential for a variety of waste management techniques, including source reduction, energy recovery, and landfilling. Secondary materials are materials that are not the primary product of a manufacturing or commercial process, and can include post-consumer material, off-specification commercial chemical products or manufacturing chemical intermediates, post-industrial material, and scrap.[70] They may result from a variety of sources, including manufacturing, mining, agriculture, construction, and demolition.

The category of secondary materials is divided into two subcategories: hazardous and non-hazardous. Hazardous secondary materials are those materials or combinations of materials, which, because of their quantity, concentration, or physical, chemical, or infectious characteristics, may "(A) cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (B) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed."[71] The combustion of hazardous secondary materials is regulated under RCRA[72] and the CAA.[73] NHSMs are those secondary materials that do not meet the definition of hazardous. Examples of NHSMs include scrap tires, dewatered pulp and paper sludge, manure, food scraps, and crop residues.[74]

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68. MCDOUGALL ET AL., *supra* note 51, at 24; Nordone et al., *supra* note 50; *Integrated Solid Waste Management*, SCIENCE-IN-THE-BOX, http://www.scienceinthebox.com.de/en_UK/sustainability/solid_waste_management_en.html (last visited Mar. 26, 2014).

69. *See Non-Hazardous Waste Management Hierarchy*, *supra* note 63.

70. 40 C.F.R. § 241.2 (2013).

71. 42 U.S.C. § 6903(5) (2012).

72. 40 C.F.R. §§ 266.100–266.112 (2013).

73. 40 C.F.R. pt. 63 subpt. EEE (2013).

74. Identification of Non-Hazardous Materials That Are Solid Waste, 74 Fed. Reg. 41, 45 (advanced notice of proposed rulemaking Jan. 2, 2009).

A. Statutory Authority for the NHSM Rule

The EPA's statutory authority to promulgate the NHSM rule comes from CAA § 129(a)(1)(D), which directs the EPA to establish "[s]tandards under section 7411 of this title and this section applicable to solid waste incineration units combusting commercial or industrial waste . . . ."[75] Additionally, § 129(g)(6) states "[t]he term[] 'solid waste' . . . shall have the meaning[] established by the Administrator pursuant to the Solid Waste Disposal Act."[76] RCRA Section 1004(27), which amended the SWDA, provides the following definition of solid waste:

> The term "solid waste" means any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and **other discarded material**, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities . . . .[77]

Section 2002(a)(1) of RCRA allows the EPA to promulgate regulations as necessary to function under RCRA.[78]

To promulgate these rules, the EPA uses the informal rulemaking process from Section 553 of the Administrative Procedure Act (APA),[79] also known as notice-and-comment rulemaking. During the informal rulemaking process, agencies are required to take a series of steps. The agency must publish notice of the proposed rule in the Federal Register,[80] give interested parties the opportunity to submit a written comment,[81] publish the final rule with a statement of the rule's basis and purpose,[82] and grant interested parties "the right to

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75. 42 U.S.C. § 7429(a)(1)(D) (2012).
76. 42 U.S.C. § 7429(g)(6) (2012).
77. 42 U.S.C. § 6903(27) (2012).
78. 42 U.S.C. § 6912(a)(1) (2012).
79. 5 U.S.C. § 553 (2012).
80. 5 U.S.C. § 553(b).
81. 5 U.S.C. § 553(c); *see also* 3-15 ADMINISTRATIVE LAW § 15.06 (2013) (discussing the informal rulemaking process).
82. 5 U.S.C. § 553(c).

petition for the issuance, amendment, or repeal of a rule."[83] In addition, the APA allows for the judicial review of any "agency action made reviewable by statute."[84]

B. Background Case Law

In analyzing RCRA Section 1004(27), the courts have used the precept of *ejusdem generis* and determined that this section only grants the EPA authority over discarded material, and that they may not regulate materials that have neither been disposed of nor abandoned.[85] The Court first dealt with the definition of "discard" under RCRA in *American Mining Congress v. EPA* in 1987.[86] In *American Mining Congress*, the Court determined that Congress intended to use the word "discarded" in its ordinary sense, meaning "disposed of" or "abandoned."[87] As such, the Court interpreted that Congress was limiting the scope of the EPA's reach and only granting the EPA authority over materials "that are truly discarded, disposed of, thrown away, or abandoned" and not opening up "the federal regulatory reach of an entirely new category of materials . . . ."[88] The Court also determined that materials were not discarded just because they were "no longer useful in their original capacity . . . ."[89] Therefore, the EPA is limited in its ability to designate materials as solid waste under RCRA and may not, for example, classify all byproducts as solid waste.

In 2000, the D.C. Circuit again dealt with materials that had been designated as "solid waste" in *Association of Battery Recyclers v. EPA*.[90] Here, the Court stated that "once material qualifies as 'solid waste,' something derived from it retains that designation even if it might be reclaimed and reused at some future time."[91] Additionally,

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83. 5 U.S.C. § 553(e).

84. 5 U.S.C. §704 (2012).

85. *See e.g.*, American Mining Congress v. United States EPA, 824 F.2d 1177, 1189–90 (D.C. Cir. 1987).

86. *Id.*

87. *Id.* at 1185.

88. *Id.* at 1190.

89. *Id.* at 1185.

90. Association of Battery Recyclers v. EPA, 208 F.3d 1047, 1053 (D.C. Cir. 2000).

91. *Id.* at 1056.

materials that are stored do not automatically qualify as discarded.[92] Even further, "just because a reclaimer has purchased or finds value in the components" of a discarded material, this does not mean that a material is not a solid waste.[93]

In addition, the Ninth Circuit has held that secondary materials that are burned are not automatically discarded.[94] In *Safe Air for Everyone v. Meyer*, the Ninth Circuit, following the logic developed by the D.C. Circuit, applied a test for waste that included the following assessment:

> (1) [W]hether material is destined for beneficial reuse or recycling in a continuous process by the generating industry itself; (2) whether the materials are being actively reused, or whether they merely have the potential of being reused; (3) whether the materials are being reused by its original owner, as opposed to being used by a salvager or reclaimer.[95]

Following the case law limitation on the definition of solid waste, the EPA, in the NHSM rule, focused on the interpretation and expansion of the word "discard" as it applies to NHSMs.[96]

C. Other EPA Interpretations of "Solid Waste" under RCRA

This definition of solid waste has previously been interpreted in 40 C.F.R. § 261.2 to include "any discarded material that is not excluded under § 261.4(a) or that is not excluded by a variance . . . or that is not excluded by a non-waste determination . . . ."[97] Here, "discarded material" was defined to include any material that is abandoned,[98] recycled,[99] considered inherently waste-like,[100] or some military

92. *Id.*
93. United States v. ILCO Inc., 996 F.2d 1126, 1131 (11th Cir. 1993).
94. Safe Air for Everyone v. Meyer, 373 F.3d 1035 (9th Cir. 2004).
95. *Id.* at 1043 (internal quotation marks omitted) (internal citations omitted).
96. *See* discussion *infra* Part II.d.
97. 40 C.F.R. § 261.2(a)(1) (2013).
98. 40 C.F.R. § 261.2(a)(2)(i)(A) (2013).
99. 40 C.F.R. § 261.2(a)(2)(i)(B) (2013).
100. 40 C.F.R. § 261.2(a)(2)(i)(C) (2013).

munitions.[101] This narrow definition applies to hazardous waste governed under subtitle C of RCRA.[102]

D. History and Background of the NHSM Rulemaking

The CAA was amended in 1990[103] to include, among other things, Section 129 which specifically addresses the issue of air pollution emitted from boilers and other incineration units that combust solid waste.[104] Section 129 requires the EPA to regulate Commercial and Industrial Solid Waste Incinerators (CISWI) units,[105] which the EPA first attempted to do with the CISWI Rule issued on December 1, 2000.[106] Under this rule, the EPA set emissions limits on new and existing CISWI units for a variety of air pollutants.[107] The EPA also created emissions guidelines (EG) and new source performance standards (NSPS), which apply only to sources constructed, reconstructed, or modified after the NSPS is proposed, for CISWI units.[108] CAA Section 129 requires that the NSPS and EG use a maximum available control technology (MACT) standard, which requires the "maximum degree of reduction in emissions of air pollutants listed under section 129(a)(4) that the Administrator, taking into consideration the cost of achieving such emission reduction and any non-air quality health and environmental impacts and energy requirements, determines is achievable for new or existing units in each category."[109] In promulgating the rule, the EPA

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101. *See* 40 C.F.R. § 266.202(b) (2013).

102. *See* 1 RCRA and Superfund: A Practice Guide, 3d § 2:9 (2013) (providing additional information on the regulatory definitions of solid waste).

103. Clean Air Act Amendments of 1990, Pub. L. 101-549, 104 Stat. 2399.

104. *Fact Sheet: Identification of Non-Hazardous Secondary Materials that Are Solid Wastes Final Rule*, U.S. ENVTL. PROT. AGENCY, http://www.epa.gov/osw/nonhaz/define/final-fs.htm (last updated Nov. 15, 2012).

105. 42 U.S.C. § 7429(a), (b) (2012).

106. Standards of Performance for New Stationary Sources and Emission Guidelines for Existing Sources: Commercial and Industrial Solid Waste Incineration Units, 65 Fed. Reg. 75,338 (Dec. 1, 2000) (to be codified at 40 C.F.R. pt. 60).

107. *Id.* at 75,340 (covering the following emissions: Cadmium, Carbon Monoxide, Dioxins/Furans, Hydrogen Chloride, Lead, Mercury, Oxides of Nitrogen (NOx), particulate matter (PM), Sulfur Dioxide, and Opacity).

108. *See* Identification of Non-Hazardous Materials That Are Solid Waste, 74 Fed. Reg. 41, 43 (advanced notice of proposed rulemaking Jan. 2, 2009).

109. 42 U.S.C. § 7429(a)(2).

Administrator "may distinguish among classes, types (including mass-burn, refuse-derived fuel, modular and other types of units), and sizes of units within a category in establishing such standards."[110] As part of the NSPS, "[t]he degree of reduction in emissions that is deemed achievable for new units in a category shall not be less stringent than the emissions control that is achieved in practice by the best controlled similar unit, as determined by the Administrator."[111] Additionally:

> [E]missions standards for existing units in a category may be less stringent than standards for new units in the same category but shall not be less stringent than the average emissions limitation achieved by the best performing [twelve] percent of units in the category (excluding units which first met lowest achievable emissions rates 18 months before the date such standards are proposed or [thirty] months before the date such standards are promulgated, whichever is later).[112]

The CISWI Rule was challenged in court in *Sierra Club v. EPA*[113] and in a separate petition for reconsideration of the final rule.

After the final CISWI Rule was promulgated, but before *Sierra Club* was decided, the D.C. Circuit issued its opinion in *Cement Kiln Recycling Coalition v. EPA*, which dealt with MACT and NSPS standards for hazardous waste combustors.[114] In *Cement Kiln*, the court rejected the EPA's position that a MACT standard must be achievable by all sources rather than reflecting what the best performers actually achieve.[115] In response to *Cement Kiln*, the EPA requested a voluntary remand of the CISWI Rule in *Sierra Club* to

110. *Id.*
111. *Id.*
112. *Id.*
113. Sierra Club v. EPA, No. 01-01048 (D.C. Cir. remanded Sept. 6, 2001).
114. Cement Kiln Recycling Coalition v. EPA, 255 F.3d 855 (D.C. Cir. 2001).
115. *Id.* at 861.

address this.[116] The Court granted the voluntary remand but did not vacate the CISWI Rule, thereby leaving its requirements in effect.[117]

After the voluntary remand, the EPA revised the rule and issued the final CISWI Definitions Rule on September 22, 2005.[118] Under the CISWI Definitions Rule, all CISWI units that recover energy for a useful purpose would not be regulated as solid waste incinerators and instead were to be regulated under CAA Section 112.[119] After this rule was promulgated, environmental and municipal groups, including the Natural Resources Defense Council and the Sierra Club, brought a judicial challenge[120] under CAA Section 307(b)(1), which provides that any final rule issued by the EPA under the CAA is subject to judicial review.[121] In its review, the court held that the EPA's definition of "'commercial or industrial waste,' as incorporated in the definition of 'commercial and industrial solid waste incineration unit' (CISWI unit), is inconsistent with the plain language of section 129" and therefore vacated this rule and remanded the issue to the EPA.[122] The court reasoned that a unit that combusts solid waste is a "solid waste incineration unit" whether or not the unit recovers energy in the process.[123] In addition, the court also vacated and remanded the Boilers Rule, which the EPA had issued in final form on September 13, 2004, because the Boilers Rule would be substantially impacted by the vacation of the CISWI Definitions Rule, and the Boilers Rule also provided for the regulation of several types of CISWI units in conflict with CAA Section 129.[124] As such, the classification of a feed material as solid

116. Motion for Voluntary Remand, *Sierra Club*. No. 01-01048 (D.C. Cir. Aug. 23, 2001).

117. Order, Sierra Club v. EPA, No. 01-01048 (D.C. Cir. Sept. 6, 2001); *see* Sierra Club. v. EPA, 374 F. Supp. 2d 30, 32–33 (D.D.C. 2005).

118. Standards of Performance for New Stationary Sources and Emission Guidelines for Existing Sources: Commercial and Industrial Solid Waste Incineration Units, 70 Fed. Reg. 55,568 (Sept. 22, 2005) (to be codified 40 C.F.R. pt. 60).

119. *See* NRDC v. EPA, 489 F.3d 1250, 1256–57 (D.C. Cir. 2007).

120. *Id.*

121. 42 U.S.C. § 7607(b)(1) (2012).

122. *NRDC*, 489 F.3d at 1254.

123. *Id.* at 1259–61.

124. *Id.* at 1261.

waste or not determines whether the combustion unit falls under CAA Section 129, subject to a few explicit statutory exemptions.[125]

1. The January 2, 2009 Advanced Notice of Proposed Rulemaking

Following the vacation and remand of the CISWI Definitions Rule, the EPA issued an Advanced Notice of Proposed Rulemaking (ANPRM) on January 2, 2009 that was intended to help clarify when NHSMs would be considered solid waste or not.[126] This ANPRM stated that the EPA intended to support "exploring regulatory alternatives" in furtherance of the goals of "[m]aximizing the usefulness of secondary materials in production, reducing or eliminating waste, conserving energy, and reducing harmful air emissions."[127] Through these goals, the EPA was trying to ensure the "protection of human health and the environment" by means of an integrated waste management approach that includes "emissions and source reduction and recycling, as well as energy capture and resource recovery from secondary materials."[128]

In the ANPRM, the EPA identified five categories of materials that the EPA believes are not solid wastes when combusted.[129] The first category is traditional fuels, such as fossil fuels and their derivatives, which have historically been combusted as fuel and managed as valuable products.[130] The second category identified by the EPA is NHSMs that are "legitimate" alternative fuels that have not been previously discarded, such as cellulosic biomass and tires used for tire-derived fuels.[131]These alternative fuels are NHSMs that are not traditional fuels but are nonetheless being used as fuels because of changes in technology and the energy market.[132] For legitimate alternative fuels, the EPA considered these secondary materials to not be solid waste "if they are handled as valuable commodities, have meaningful heating value, and contain contaminants that are not significantly higher in concentration than traditional fuel

125. *See id.*

126. Identification of Non-Hazardous Materials That Are Solid Waste, 74 Fed. Reg. 41, 53 (advanced notice of proposed rulemaking Jan. 2, 2009).

127. *Id.* at 44.

128. *Id.* at 44–45.

129. *Id.* at 53.

130. *Id.*

131. *Id.* at 56–57.

132. *Id.*

products."[133] The third category identified is discarded NHSMs that would otherwise fit into the first or secondary category that have been sufficiently processed to produce a fuel.[134] The fourth category, secondary materials used as legitimate alternative ingredients,[135] and the fifth category, hazardous secondary materials that may be excluded from the definition of solid waste under RCRA Subtitle C because they are more like commodities than wastes,[136] are outside the scope of this Note and will generally not be discussed. However, it should be noted that coal fly ash marketed to cement kilns that is handled as a commodity within continuous commerce and has not been discarded is provided as an example of a secondary material that is a legitimate ingredient.[137]

In addition, the EPA requested comment on the applicability to NHSMs of the legitimacy criteria used in the regulation of hazardous waste, which states that materials "treated as a commodity, rather than as a waste, are not discarded and are not solid wastes so long as they are legitimately recycled."[138] As such, "the same secondary material could be a solid waste or not depending on how it has been handled and managed because handling and management factors into whether or not the secondary material has been discarded."[139]

2. The June 4, 2010 Proposed Rule

On June 4, 2010, the EPA issued the proposed NHSM rule,[140] which proposed that the following would not be considered solid wastes: NHSMs that are used as fuel, meet the legitimacy criteria, and are combusted within the control of the generator; previously discarded NHSMs that otherwise meet the legitimacy criteria and have been sufficiently processed into a fuel; and NHSMs used as fuel that do not remain within the control of the generator but have been granted a "non-solid waste" determination by the EPA through a

133. *Id.* at 54.
134. *Id.* at 54, 57–58.
135. *Id.* at 58.
136. *Id.* at 58–59.
137. *Id.* at 58.
138. *Id.* at 53.
139. *Id.*
140. Identification of Non-Hazardous Secondary Materials That Are Solid Waste, 75 Fed. Reg. 31,844 (proposed June 4, 2010).

petition process.[141] For the first category, the requirement that materials remain within the control of the generator was added to help prevent "sham" recycling, which is essentially an effort by waste handlers to treat and/or dispose of material under the guise of recycling to avoid the regulatory requirements of RCRA.[142] It also may have been included because of the third factor from *Safe Air for Everyone v. Meyer*, which considers "whether the materials are being reused by its original owner, as opposed to being used by a salvager or reclaimer."[143]

The proposed rule also added another criterion to the legitimacy criteria, which required NHSMs used as fuel to be combusted in a combustion unit that recovers energy.[144] The inclusion of the energy recovery requirement serves to promote the EPA's preference of energy recovery over disposal, as stated in the solid waste management hierarchy.[145]

3. The March 21, 2011 Final Rule

On March 21, 2011, the EPA issued the final "Identification of Non-Hazardous Secondary Materials That Are Solid Waste" rule (2011 final rule), which was to become effective on May 20, 2011.[146] The largest change between the proposed rule and the first final rule was the addition of a class of NHSMs that are categorically determined to not be solid waste, such as "scrap tires used in a combustion unit that are removed from vehicles and managed under the oversight of established tire collection programs" and "resinated wood used in a combustion unit."[147] In issuing the final rule, the EPA stated that it believes NHSMs used as ingredients are more akin to "commodities managed within continuous commerce and are used as an integral part of the manufacturing process."[148] It reasoned that NHSMs function as effective substitutes for raw materials in normal

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141. *Id.* at 31,856.

142. *Id.* at 31,851–52.

143. Safe Air for Everyone v. Meyer, 373 F.3d 1035, 1043 (9th Cir. 2004).

144. 75 Fed. Reg. at 31,856.

145. *See supra* notes 63–69 and accompanying text.

146. Identification of Non-Hazardous Secondary Materials That Are Solid Waste, 76 Fed. Reg. 15,456 (Mar. 21, 2011) (codified at 40 C.F.R. pt. 241).

147. 40 C.F.R. § 241.3(b)(2) (2011) (amended 2013).

148. 76 Fed. Reg. at 15,516.

manufacturing processes "that most closely resemble normal production processes, provided they meet the legitimacy criteria."[149]

In response to the 2011 final rule, twenty-eight petitions for review were filed in the D.C. Circuit under Section 307(b)(1) of the CAA,[150] and these petitions were consolidated into *Waste Management, Inc. v. EPA*.[151] In response to these legal challenges and some other issues identified by the EPA that warrant further public comment,[152] the EPA decided to revise the March 21 rule in October 2011.[153] The court held these cases in abeyance during the revision period.[154]

4. The December 21, 2011 Proposed Revisions

On December 23, 2011, the EPA issued the proposed amendments to the 2011 final rule.[155] The notice of proposed rulemaking also announced that the EPA was requesting comment on the CISWI Rule.[156] One of the largest changes from the previous iteration of the rule was the addition of a new class of categorically exempt wastes, including scrap tires and resonated wood.[157] It also proposed adding a process for the owners or operators of a facility to submit a rulemaking petition to seek a categorical determination that other NHSMs are non-waste fuels.[158] These changes were included to help clarify for owners and operators when they are unsure of the results of the self-implemented legitimacy criteria or when they believe that

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149. *Id.*

150. 42 U.S.C. § 7607(b)(1) (2012).

151. *See* Clerk's Order, June 8, 2011, Waste Management, Inc. v. EPA, Docket no. 11-01148 (consolidating seven total cases); Clerk's Order, June 23, 2011, Waste Management, Inc. v. EPA, Docket no. 11-01148 (consolidating an additional twenty-one cases).

152. *See* Commercial and Industrial Solid Waste Incineration Units: Reconsideration and Proposed Amendments; Non-Hazardous Secondary Materials That Are Solid Waste, 76 Fed. Reg. 80,452, 80,456 (proposed Dec. 23, 2011).

153. October 14, 2011, Letter from Administrator Lisa P. Jackson to Senator Olympia Snowe, *available at* http://www.noticeandcomment.com/October-14-2011-Letter-from-Administrator-Lisa-P-Jackson-to-Senator-Olympia-Snowe-fn-4299.aspx.

154. Clerk's Order at 1, Nov. 1, 2011, Waste Management, Inc. v. EPA, Docket No. 11-1148 (D.C. Cir. 2011).

155. 76 Fed. Reg. 80,452.

156. *Id.*

157. *Id.* at 80,482–84.

158. *Id.* at 80,472.

a material does not entirely meet the contaminant legitimacy criterion but is widely used as a fuel anyways.[159]

5. The February 7, 2013 Final Revised Rule

The final revisions to the NHSM Rule were finalized on December 20, 2012 and were to go into effect February 7, 2013.[160] The final NHSM rule largely adopted the changes proposed in the 2011 proposed amendments.

E. Content of the Final Revised NHSM Rule

The final NHSM rule was divided into four sections.[161] The first two sections deal with the purpose of the regulation[162] and definitions.[163] The other two deal with NHSMs used as fuel or ingredients in a combustion unit[164] and with specific NHSMs used as fuel.[165] As was the plan from the proposed rule, the final rule kept the presumption that NHSMs are solid wastes, [166] thereby making CAA Section 129 the default regulatory scheme for combustion units that use NHSMs as fuel.

Traditional fuels that have not been discarded are not NHSMs and therefore are not subject to the NHSM rule.[167] Traditional fuels, materials that are produced as fuels and are unused products that have not been discarded, are broken into two categories. The first category of traditional fuels are fuels that have historically been managed as valuable fuel products rather than waste products, including: "fossil fuels (e.g., coal, oil, and natural gas), their derivatives (e.g., petroleum coke, bituminous coke, coal tar oil, refinery gas, synthetic fuel, heavy recycle, asphalts, blast furnace gas, recovered gaseous butane, and coke oven gas) and cellulosic biomass

159. *See id.* at 80,471–72.

160. Commercial and Industrial Solid Waste Incineration Units: Reconsideration and Final Amendments; Non-Hazardous Secondary Materials That Are Solid Waste, 78 Fed. Reg. 9,112 (Feb. 7, 2013) (to be codified at 40 C.F.R. pts 60, 241).

161. *See* 40 CFR pt. 241.

162. 40 C.F.R. § 241.1 (2013).

163. 40 C.F.R. § 241.2 (2013).

164. 40 C.F.R. § 241.3 (2013).

165. 40 C.F.R. § 241.4 (2013).

166. 40 C.F.R. §§ 241.3(a), 241.4(a).

167. 40 C.F.R. § 241.2.

(virgin wood)."[168] The other category of traditional fuels are "alternative fuels developed from virgin materials that can now be used as fuel products, including used oil which meets the specifications outlined in 40 CFR 279.11, currently mined coal refuse that previously had not been usable as coal, and clean cellulosic biomass."[169] So long as any material from either category of traditional fuels is not discarded, it does not qualify as a secondary material, therefore a combustion unit that burns them would be subject to CAA Section 112.[170]

In addition, there are four ways that NHSMs will be deemed to be non-solid wastes: (1) they are in one of the classes of categorically determined non-wastes;[171] (2) they are not discarded, meet the legitimacy criteria, and are used as fuel in a combustion unit and remain in the control of the generator before and during combustion;[172] (3) they are processed in more than a nominal fashion to produce a fuel or ingredient;[173] and (4) they are the subject of a successful petition under one of the two established petition processes.[174]

The EPA listed several materials that were to be considered categorically determined non-wastes.[175] In doing so, the EPA directly exempted these NHSMs from being considered solid waste so long as they are not discarded.[176] As written, these NHSMs are as follows:

> (1) Scrap tires that are not discarded and are managed under the oversight of established tire collection programs, including tires removed from vehicles and off-specification tires.
> (2) Resinated wood.
> (3) Coal refuse that has been recovered from legacy piles and processed in the same manner as currently-generated coal refuse.

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168. *Id.*
169. *Id.*
170. *Id.*
171. 40 C.F.R. § 241.4(a).
172. 40 C.F.R. § 241.3(b)(1)–(2) (2013).
173. 40 C.F.R. § 241.3(b)(4).
174. 40 C.F.R. §§ 241.3(c), 241.4(b).
175. 40 C.F.R. § 241.4(a).
176. *Id.*

> (4) Dewatered pulp and paper sludges that are not discarded and are generated and burned on-site by pulp and paper mills that burn a significant portion of such materials where such dewatered residuals are managed in a manner that preserves the meaningful heating value of the materials.[177]

Because these NHSMs are non-solid wastes so long as they have not been discarded, any combustion unit that burns any one of these NHSMs as fuel is subject to Section 112 of the CAA.[178] Additionally, there is no requirement that these materials must stay within the control of the generator or otherwise lose their status as non-wastes.

Under the final rule, there are three legitimacy criteria for NHSMs used as fuel in a combustion unit.[179] First, the NHSM must be managed as a valuable commodity, which means that it must be managed as though it had "been purchased or obtained at some cost, just as fuels or raw materials are."[180] In making this determination, the following factors are to be considered: whether the storage of the NHSM prior to use has exceeded a reasonable time frame, whether the NHSM is managed consistently with an analogous fuel if there is one, and if not, whether the NHSM is otherwise adequately contained to prevent a release into the environment.[181] Second, the NHSM must have a meaningful heating value and be used as a fuel in a combustion unit that recovers energy.[182] Third, the NHSM must contain contaminants or groups of contaminants at levels comparable to or less than that of a traditional fuel that the combustion unit was designed to burn, regardless of whether or not the unit is permitted to burn the traditional fuel.[183] In making this comparison, an operator may use data from nationally compiled surveys or contaminant data from the specific fuels being replaced.[184] NHSMs that meet the

177. *Id.*

178. 42 U.S.C. § 7412 (2012).

179. 40 C.F.R. § 241.3(d).

180. 40 C.F.R. § 241.3(d)(1)(i); Identification of Non-Hazardous Secondary Materials That Are Solid Waste, 76 Fed. Reg. 15,456 (Mar. 21, 2011) (codified at 40 C.F.R. pt. 241).

181. 40 C.F.R. § 241.3(d)(1)(i).

182. *Id.* § 241.3(d)(1)(ii).

183. *Id.* § 241.3(d)(1)(iii).

184. *Id.*

legitimacy criteria and are used as fuel in a combustion unit are considered to be non-solid waste materials.[185] "Within the control of the generator" is defined as follows:

> [T]hat the non-hazardous secondary material is generated and burned in combustion units at the generating facility; or that such material is generated and burned in combustion units at different facilities, provided the facility combusting the non-hazardous secondary material is controlled by the generator; or both the generating facility and the facility combusting the non-hazardous secondary material are under the control of the same person as defined in this section.[186]

Under this standard, a generator may generate the NHSM in Maine and transport it to California, so long as the generator transports it from a generator-owned facility to a generator-owned facility.[187] However, a generator may not transfer an NHSM to another party for combustion even if the combustion unit is located on site and the NHSM has never left the site.[188] The EPA has been issuing letters to help ease the mind of combustion unit owners as to whether a material meets the legitimacy criteria.[189]

Another way that NHSMs may be exempted from being categorized as solid wastes is to be the subject of either a rulemaking petition or a non-waste determination.[190] The rulemaking petition process applies to entire classes of materials, and any class of materials that is the subject of a successful rulemaking petition would be added to the list of categorically exempted wastes found in Part 241.4(a) of the new rule.[191] In addition, interested persons may also seek a non-waste determination from either the Regional Administrator where the combustion unit is located or the Assistant

185. 40 C.F.R. § 241.3(b)(1).

186. 40 C.F.R. § 241.2.

187. *See* Stoll & Basic, *supra* note 32.

188. *Id.*

189. *See Identification of Non-Hazardous Secondary Materials That Are Solid* Waste, U.S. ENVTL. PROT. AGENCY, http://www.epa.gov/epawaste/nonhaz/define/index.htm#gc (last updated Dec. 12, 2013).

190. 40 C.F.R. §§ 241.3(c), 241.4(b).

191. 40 C.F.R. § 241.4(b).

Administrator for the Office of Solid Waste and Emergency Response if combustors are located in multiple EPA Regions.[192] These determinations may be issued for NHSMs used as fuel that are outside of the control of the generator and are not discarded.[193] Such a determination will be reviewed based on how the NHSM is treated, whether the chemical and physical identity of the NHSM is comparable to commercial fuels, the amount of time before the NHSM will be used, whether the constituents of the NHSM are released into the air, water, or land during the period after the NHSM has been generated until just prior to the NHSM's combustion at levels comparable to those of traditional fuels, and other relevant factors.[194]

For NHSMs that have been discarded or do not otherwise qualify under any of the other categories, they are considered solid wastes unless they are processed in more than a nominal fashion.[195] The first example provided of previously discarded material that may be processed into alternative fuels is biomass with a high moisture content that has been dewatered/dried to effectively increase the Btu/lb, provided that the biomass is handled as a valuable commodity after it has been processed and that it does not have significantly higher concentrations of contaminants than comparable fuels.[196] Another example provided is wood with lead-based paint that has had the lead-based paint removed.[197] Modifying the size of a material is not enough.[198] In addition, the same legitimacy criteria for the fuel or ingredient produced applies to the NHSMs that remain within the control of the generator.

F. Legal Challenges to the Rule

As *Waste Management, Inc.* was held in abeyance during the revision process, the case has become active now that the final revised rule has been issued. In addition, the EPA filed an unopposed motion to consolidate any new challenges to the revised rule into this

192. 40 C.F.R. § 241.3(c).

193. *Id.*

194. *Id.* § 241.3(c)(1).

195. 40 C.F.R. § 241.3(b)(4).

196. Identification of Non-Hazardous Materials That Are Solid Waste, 74 Fed. Reg. 41, 57 (advanced notice of proposed rulemaking Jan. 2, 2009).

197. *Id.*

198. *See id.*

case.[199] The legal challenges to the NHSM rule have come from both industry[200] and environmental groups,[201] while some commentators have also noted potential issues with the NHSM rule.[202]

The industry groups have challenged that the entire NHSM rule and various elements of it are arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law.[203] For example, in its Nonbinding Statement of Issues, Wisconsin Electric Power Company challenged whether the EPA "acted arbitrarily, capriciously or otherwise contrary to law when establishing legitimacy criteria for non-hazardous secondary materials used as fuel in combustion units, including but not limited to the determination of meaningful heating value criterion."[204] Another

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199. Corrected Unopposed Motion to Consolidate, Waste Management, Inc. v. EPA, No. 11-01148 (D.C. Cir. May 19, 2011).

200. Industry Petitioners in Case No. 11-1148 (and consolidated cases) are American Chemistry Council, American Forest & Paper Association, American Gas Association, American Home Furnishings Alliance, Inc., American Petroleum Institute, American Wood Council, Association of American Railroads, ARIPPA, Auto Industry Forum, Biomass Power Association, Cement Kiln Recycling Coalition, CEMEX, Inc., Coalition for Responsible Waste Incineration, Council of Industrial Boiler Owners, Edison Electric Institute, Hardwood Plywood and Veneer Association, Hatfield Township Municipal Authority, Holcim (US) Inc., Lafarge Building Materials, Inc., Lafarge Midwest Inc., Lafarge North America, Inc., National Association of Clean Water Agencies, National Association of Manufacturers, National Rural Electric Cooperative Association, Portland Cement Association, Railway Tie Association, Rubber Manufacturers Association, Solvay USA Inc., Treated Wood Council, Utility Solid Waste Activities Group, Waste Management Inc., and WM Organic Growth, Inc. Joint Motion to Set Briefing Schedule at 1 n.1, Waste Management, Inc. v. EPA, No. 11-01148 (D.C. Cir. May 19, 2011).

201. Environmental Petitioners in Case No. 11-1148 (and consolidated cases) are Clean Air Council, Desert Citizens Against Pollution, Downwinders At Risk, Environmental Integrity Project, Huron Environmental Activist League, Louisiana Environmental Action Network, Montanans Against Toxic Burning, Partnership for Policy Integrity, and Sierra Club. *Id.* at 2 n.2.

202. *See* Stoll & Basic, *supra* note 32.

203. 5 U.S.C. § 706(2)(A) (2012).

204. Wisconsin Electric Power Company's Nonbinding Statement of Issues at ¶ 3, Waste Management, Inc. v. EPA, No. 11-01148 (D.C. Cir. May 19, 2011). Note that Wisconsin Electric Power voluntarily dismissed their case. Wisconsin Electric Power Company's Unopposed Motion for Voluntary Dismissal, Waste Management, Inc. v. EPA, No. 11-01148 (D.C. Cir. May 19, 2011). Despite Wisconsin Electric Power Company's, other industry petitioners have raised

common challenge against the NHSM rule is that it was arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law for the EPA to include the presumption that any NHSM that is transferred from one party to another party is discarded.[205]

The environmental petitioners have also challenged both the entire NHSM rule and certain parts thereof as arbitrary and capricious.[206] They have challenged, *inter alia*, each of the categorical exclusions of waste, the materials listed as traditional fuels, and the two petition processes.[207]

G. March 25, 2014 Proposed Amendments

On March 25, 2014, the EPA issued a notice of proposed rulemaking for amendments to the NHSM rule.[208] These amendments propose adding three materials to the categorical non-waste fuels list.[209]

III. THE NHSM RULE UNDER THE LENS OF INTEGRATED SOLID WASTE MANAGEMENT

This section will focus on the NHSM rule through the lens of ISWM and consider both how the principles of ISWM are or are not reflected in the rule.

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similar issues. *See, e.g.*, Petitioners' Non-Binding Statement of Issues at ¶ 3, Waste Management, Inc. v. EPA, No. 11-01148 (D.C. Cir. May 19, 2011).

205. *See, e.g.*, Holcim (US) Inc.'s Preliminary Non-Binding Statement of Issues at ¶ 1, Waste Management, Inc. v. EPA, No. 11-01148 (D.C. Cir. May 19, 2011); Petitioners' Non-Binding Statement Of Issues at ¶ 2, Waste Management, Inc. v. EPA, No. 11-01148 (D.C. Cir. May 19, 2011).

206. Non-Binding Issues Statement of Louisiana Environmental Action Network, Sierra Club, Clean Air Council, Desert Citizens Against Pollution, Partnership for Policy Integrity, Environmental Integrity Project, Montanans Against Toxic Burning, Huron Environmental Activist League, and Downwinders at Risk, Waste Management, Inc. v. EPA, No. 11-01148 (D.C. Cir. May 19, 2011).

207. *Id.* Commentators have noted that the EPA was inconsistent in the list of categorically excluded NHSMs, as scrap tires and dewatered pulp and paper sludges are expressly required to have not been discarded but resinated wood and coal refuse have no such requirement. *See* Stoll & Basic, *supra* note 32.

208. Additions to List of Section 241.4 Categorical Non-Waste Fuels, 79 Fed. Reg. 21,006 (proposed Apr. 14, 2014).

209. *Id.* at 21,006.

As discussed in Part I, an important element of ISWM in the United States is to empower states, local governments, and regional solid waste authorities to select and implement waste management policies that consider local needs and conditions.[210] In creating these plans and selecting their solid waste management systems, states, local governments, and regional solid waste authorities should consider institutional, social, financial, economic, technical, and environmental factors.[211] Effective ISWM planning should include a consideration of all options available to manage all types of solid waste within the jurisdiction of the responsible agency. In addition, all materials that are or potentially may be solid waste, not just those materials that fall under the RCRA definition, need to be accounted for in an effective ISWM plan.[212]

The legitimacy criteria require that NHSMs combusted as fuel are managed as a valuable commodity, have meaningful heating value, and have acceptable levels of contaminants.[213] The meaningful heating value and acceptable levels of contaminants criteria set a threshold and essentially require that when combusted, an NHSM must be comparable to traditional fuels in all relevant respects. The other criterion, that the material be handled as a valuable commodity, is also in part to prevent release of the NHSM into the environment. It also serves both to prevent sham recycling and to ensure that the material has not been discarded through abandonment or another means. As such, the EPA was considering the environmental and other harms as compared to the benefits of energy recovery from NHSMs and determined that energy recovery from materials comparable to traditional fuels was acceptable while essentially creating an economic barrier to energy recovery from materials with less heating value or higher contaminant levels.

The NHSM rule has created a presumption that NHSMs are solid wastes unless they are traditional fuels or fit into one of these four categories: (1) NHSMs that are categorically determined non-wastes that have not been discarded;[214] (2) NHSMs that are not discarded, meet the legitimacy criteria, and are used as fuel in a combustion unit and remain in the control of the generator before and during

210. *See supra* Part I.
211. *What Is ISWM?*, *supra* note 10.
212. *See supra* Part I.
213. 40 C.F.R. § 241.3(d).
214. 40 C.F.R. § 241.4(a).

combustion;[215] (3) NHSMs that have been processed in more than a nominal fashion to produce a fuel or ingredient;[216] and (4) NHSMs that have not been discarded and have been the subject of a successful petition.[217] As a practical effect, this creates a burden on generators of NHSMs that are neither traditional fuels nor categorically exempt by requiring these generators to either submit a petition to the EPA for a determination that the NHSM generated is not solid waste or seek a categorical non-waste determination. Either requirement creates a burden on those generators who do not have the demand or capacity to combust the NHSMs themselves, both in terms of the cost associated with filing the petition and the time that it may take for the petition to be reviewed.

Such a requirement also limits the flexibility of the market to respond to technological developments and economic changes, as petition process will create a lag between when the technology or economy has changed and when the material becomes available. In addition, there are very few units in the country that will be regulated under CAA Section 129 as compared to those regulated under CAA Section 112,[218] which limits the options of states, local governments, and regional solid waste authorities in creating an ISWM plans. As such, the EPA is essentially promoting the landfilling of these NHSMs by creating a situation wherein materials that both meet the legitimacy criteria and have been sold for a reasonable price by the generator to another party are now considered discarded, and therefore must be managed as solid waste. Such a condition exists despite the fact that the EPA has, through the legitimacy criteria, acknowledged that recovering energy from these materials through combustion is acceptable after comparing the benefits with the environmental and other negatives impacts associated with the combustion. In addition, the promotion of landfilling over energy recovery goes against the EPA's solid waste management

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215. 40 C.F.R. § 241.3(b)(2).

216. 40 C.F.R. § 241.3(b)(4).

217. 40 C.F.R. §§ 241.3(c), 241.4(b).

218. The EPA estimates that there are 1.5 million boilers and other combustion units in the country, but only 106 CISWI units. *EPA's Air Toxics Standards: Major and Area Source Boilers and Certain Incinerators Technical Overview Adjustments from March 2011 Final Standards*, U.S. ENVTL. PROT. AGENCY, at 2, http://www.epa.gov/airquality/combustion/docs/20121221_tech_overview_boiler_ciswi_fs.pdf (last visited Dec. 16, 2013).

hierarchy,[219] which treats landfilling and incineration without energy recovery as the least preferred solid waste management option.

Instead of the current language, the EPA should include, in addition to materials that remain within the control of the generator, materials that are treated as commodities and pass within continuous commerce, as was done for ingredients used in combustion units.[220] Such a change would recognize that as technologies improve, these materials are functioning as effective substitutes for raw materials and are being used and managed in a way that resembles normal energy recovery processes.[221] This would allow the market to respond more effectively to economic and technological changes. However, this change may create the potential for sham recycling, which the EPA was attempting to prevent with this requirement.[222] This newly created risk of sham recycling could be prevented by adding two requirements to materials that leave the control of the generator. First, the generator must receive a reasonable fee for the materials, the reasonableness of which could be determined in part by comparing it to the market value of a traditional fuel with a comparable heating value. In addition, the materials should require chain of custody documentation that details their management and sales history.

IV. CONCLUSION

In promulgating the NHSM rule, the EPA was trying to help categorize materials that are burned in combustion units as solid wastes, fuels, or ingredients. Materials that were designated as solid wastes would need to be burned in CISWI units that are subject to Section 129 of the CAA, while those materials that are fuels or ingredients would be burned in combustion units that are subject to the much less strict standards of CAA Section 112. In support of the precautionary principle, the EPA adopted a policy that NHSMs would by default be presumed to be solid wastes unless they were

219. *See supra* notes 63–67 and accompanying text.

220. *See supra* note 137 and accompanying text.

221. In doing this, it would be following the logic that the EPA used for allowing ingredients to pass in continuous commerce. *See supra* notes 148–149 and accompanying text.

222. Identification of Non-Hazardous Materials That Are Solid Waste, 74 Fed. Reg. 41, 51–53 (advanced notice of proposed rulemaking Jan. 2, 2009).

shown to fall into one of a few exemptions. One of these exemptions is for NHSMs that are used as fuel and that remain and are combusted within the control of the generator and meet the legitimacy criteria. To allow the NHSM rule to comply with the need for flexibility in an effective ISWM system, the EPA should amend the rule to exempt NHSMs that meet the legitimacy criteria and that have been passed within continuous commerce, so long as they are sold by the generator for a reasonable price and chain of custody documentation is kept.