FAQ H. 143

What is the practical difference for your members between being regulated as manufacturing and being regulated as solid waste?

There are three considerations for specifying that advanced recycling is a manufacturing process and not solid waste management:

1. **Appropriate regulation:** It's important to appropriately regulate both solid waste management and advanced recycling (AR). Because the purposes and operations of advanced recyclers are quite different from solid waste management facilities, it's important that the rules applicable to both types of facilities are properly tailored. For example, you wouldn't regulate a plumber like an accountant. Why? Because you create unnecessary requirements, and you don't regulate what you should. In this example, making the plumber take the uniform CPA exam probably doesn't help protect the public. Additionally, the accountancy rules are not likely to cover workers' health and safety, because those are not typical accounting issues.
2. **Legal certainty:** This bill helps condition the environment for this innovative technology by providing legal certainty. Clarifying the law will:
    a. Make it clear what the requirements are, and
    b. Provide a stable and predictable legal environment – which is important to business and investors.
3. **Practical effect:** There are three primary effects of making this clarification (Table 1). First, SWM is subject to numerous planning requirements that are applicable to and integrated element of the SWM system. Those requirements do not make sense for a manufacturer like AR (see, plumber/accountant example above). Second, SWM and AR facilities are zoned differently and should have very different zoning requirements. Lastly, the emissions requirements (Appendix A) are also very different and should be regulated as such.

Table 1

Practical Examples of SWM and Manufacturing Requirements

Example	**Solid waste management (SWM)**	**Advanced recycling (AR)**
Solid waste management plan	SWM plan typically required. Could include waste stream analysis, collection, disposal, and handling capacity, etc.,	AR facilities are not an integrated part of the SWM process. AR facilities create feedstock from recyclables separated from the waste stream.
Zoning	SWM facilities are not typically zoned for industrial areas (e.g., MRFs, landfills, incinerations). These facilities have unique zoning considerations (e.g., community nuisance, insects, rodents, fire, etc.)	AR facilities are typically located in industrial areas and would be required to meet all relevant zoning requirements. Traffic, odor, and vermin are not typically associated with AR operations and could require unnecessary planning or requirements.
Environmental:	*Note.* Incineration and pyrolysis recycling have very different air emission profiles (*see,* Appendix A).	

Are you open to amendments that provide legal certainty, but also address any concerns related to storage and nuisance issues?

Yes. It is impossible to address every potential situation. To address concerns raised, we suggest an amendment that requires the department to develop additional regulations (Table 2) and require that post-used plastic be processed into feedstock.

Table 2

Concerns Raised and Suggested Amendment

Concern	Example	Rulemaking Amendment
Litter	Pre-processed plastics, escaping the facility.	Wind and surface control rules and recovery plan.
Hazard or nuisance	Pre-processed plastics attracting vermin or creating a fire hazard.	Specific rules to help mitigate these risks.

How does this reduce energy consumption?

AR energy footprint: The energy footprint of an AR facility depends on the source and scale of the facility. For example, the heat used in pyrolysis recycling could be derived from electricity, natural gas, propane, or non-condensable gases.[1] The amount of energy consumed would depend on the specific technology being used at the facility and the amount of post-use plastic processed. Electrical-sourced operations would need to comply with local grid requirements like other manufacturing operations.

While energy consumption depends on scale and sourcing, emissions from a pyrolysis recycling facility that processes 55,000 T annually could help provide perspective. According to one report,[2] such a facility could have:

1. **VOC and PM10** emissions similar to smaller than average food processing plant,
2. **Sulfur dioxide** (SO2) emissions roughly comparable to smaller than average institutions such as hospitals, universities, and prisons,
3. **Nitrogen oxides** (NOx) emissions similar to larger than average institutions such hospitals, universities, and prisons, and
4. **Carbon monoxide** (CO) emissions comparable to average auto manufacturing operations.

AR helps reduce greenhouse gas (GHG) emissions: Due to the relationship between GHG emissions and energy use, it is useful to consider that AR has been found to help reduce GHG equivalent in plastics. A recent literature review found that:[3]

1. **Lower GHG in feedstock:** The majority of LCA results indicate that AR technologies produce plastic and chemical products with reduced global warming potential compared to products made from virgin resources.

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[1] Good Company, "Comparison of Pyrolysis-Based Advanced Recycling Air Emissions to Common Manufacturing Emissions," Life cycle assessment, March 2021, 4, https://static1.squarespace.com/static/5e1380910c47256ea5b5c982/t/60535908f6ee2e1aff1bc2bf/1616075028828/Advanced+Recylcing_Emissions_Whitepaper_Report-3.18.21.pdf.

[2] Good Company, 8.

[3] Lauren T Creadore and Marco J Castaldi, "Quantitative Comparison of LCAs on the Current State of Advanced Recycling Technologies" (New York, NY: City University of New York, October 2022), https://ccnyeec.org/wp-content/uploads/2022/10/comparisonOfAdvRecyclingLCAs.pdf.

2. **Lower GHG at end of life:** AR can reduce CO2 equivalent emissions compared to today's typical end-of-life processes, such as landfill and waste-to-energy, by more than 100%.

How are advanced recycling facilities regulated?

General regulation: Advanced recycling facilities are subject to federal, state, and local-level land use authorizations, permits, and regulatory approvals – similar to manufacturing facilities with comparable environmental footprints.[4]

Alaska specific regulations: Similar to other manufacturing facilities, advanced recycling facilities would be required to comply with all relevant state-level environmental regulations for manufacturing facilities under the Alaska Administrative Code (AAC). Specifically, advanced recycling facilities would be required to:

1. **Air construction permit:** Obtain applicable air construction and operating permits pursuant to 18 AAC 50. This includes compliance with all applicable ambient air limits, including for particulate matter, fine particulate matter, sulfur dioxide; nitrogen dioxide, volatile organic compounds, lead, and carbon monoxide, as well as all applicable hazardous air pollutant emissions levels.
2. **Water quality:** Obtain all applicable regulations governing water quality, including but not limited to stormwater and wastewater discharge permits (i.e., Alaska Pollutant Discharge Elimination System (APDES) permits) pursuant to 18 AAC 72 and 18 AAC 83.
3. **Aboveground storage compliance:** Comply with applicable regulations for the design, installation and operation of aboveground storage tank systems, including Spill Prevention Control and Countermeasures (SPCC) regulations pursuant to 18 AAC 75.

How are we to deal with that as a legal matter for those plastics that don't get into the manufacturing stream?

We are attempting to exclude post-use polymers and recovered feedstocks AT advanced recycling facilities from the definition of solid waste (*see* Bill Section 1, at subsection (26), page 4, line 17, et seq.).

1. Materials that don't end up at an advanced recycling facility would not be exempt from the definition of solid waste.
2. The key difference being that post-use polymers and recovered feedstocks that end up **at** an advanced recycling facility have often been sorted and cleaned up to 3 times prior to reaching the facility.

That is, plastics not at an advanced recycling facility would not be covered by this legislation.

[4] Plastic Division, "Advanced Recycling Facilities Regulation Requirements Fact Sheet," Industry report (American Chemistry Council, April 25, 2023), https://www.americanchemistry.com/better-policy-regulation/plastics/advanced-recycling/resources/advanced-recycling-facilities-regulation-requirements-fact-sheet.

Economic Considerations

The following FAQs focuses on the *economic considerations* of advanced recycling. That is, the market considerations of recycled content supply and demand.

Is there demand for recycled plastics?

Yes. There are two factors increasing demand for recycled plastics:

1. **Market shift:** Due to consumer demand, packaging decision makers are shifting to recycled content.[5] More companies are making public commitments to increase recycled content. According to the U.S. Plastics Pact's 2022 annual report, for example, its members have committed to include 30% recycled content or biobased plastic packaging by 2025.[6] The pact has 136 members that includes brands and retailers.
2. **Legal requirements:** In addition to market shifts, state policy is also increasing demand for recycled plastics. Washington State[7] and New Jersey[8] have enacted minimum recycled content requirements for certain non-beverage bottle plastic packaging. Additionally, states that have enacted packaging extended producer responsibility (EPR) and other laws are expected drive increased use of recycled material. For example, in Oregon, the EPR fees must consider the recycled content of a covered item.[9]

How does feedstock from advanced recycling help meet that demand?

Advanced recycling creates recycled feedstock (i.e., supply) for use in many products, including food and medical grade packaging. Plastic packaging is often used in food applications.[10] As outlined in a consultant report, advanced recycling helps remove some of the barriers and limitations that mechanically recycling can face.[11] Both processes, mechanical and advanced recycling, complement each other by increasing the range of plastics that can be recycled and expanding the end-markets that recycled plastics can go into (Figure 1). It will be difficult to meet this growing demand without advanced recycling.

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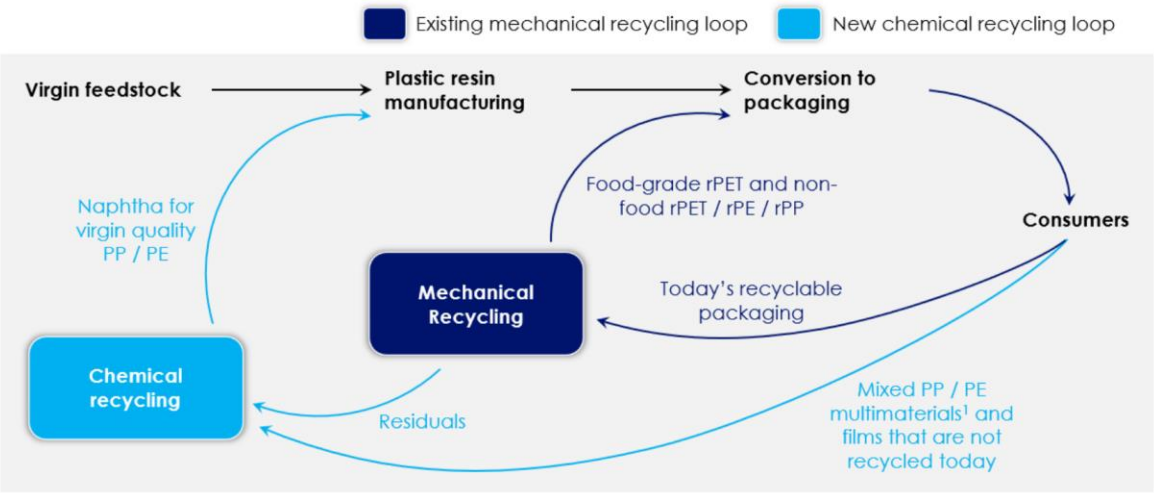
[5] David Feber et al., "2022 and beyond for the Packaging Industry's CEOs: The Priorities for Resilience," Consultant report (McKinsey & Company, March 2022), fig. 2, https://www.mckinsey.com/industries/packaging-and-paper/our-insights/2022-and-beyond-for-the-packaging-industrys-ceos-the-priorities-for-resilience#/.
[6] U.S. Plastics Pact, "2022 Annual Report," Annual report, 2022, https://usplasticspact.org/.
[7] Das, "Recycling and Waste and Litter Reduction," Pub. L. No. S. 5022, Ch. 313, Laws of 2021 (2021), https://lawfilesext.leg.wa.gov/biennium/2021-22/Pdf/Bills/Session%20Laws/Senate/5022-S2.SL.pdf?cite=2021%20c%20313%20%C2%A7%201.
[8] "Calculation of Postconsumer Recycled Content," Pub. L. No. 391, N.J. Laws (2021), https://www.njleg.state.nj.us/bill-search/2020/S2515/bill-text?f=PL21&n=391_.
[9] "Plastic Pollution and Recycling Modernization Act," Pub. L. No. Ch., 681, S. 582 (2021), sec. 11, https://www.oregonlegislature.gov/bills_laws/lawsstatutes/2021orlaw0681.pdf.
[10] Alexandra Carr et al., "Towards a Circular Plastics Economy: Policy Solutions for Closing the Loop on Plastics" (Policy report, Ann Arbor, University of Michigan, Center for Sustainable Systems, 2019), tbl. 1, https://css.umich.edu/publications/research-publications/towards-circular-plastics-economy-policy-solutions-closing-loop.
[11] Zhou Peng et al., "Advanced Recycling: Opportunities for Growth," Consultant report, May 2022, https://perma.cc/6R3L-X3JY, https://www.mckinsey.com/industries/chemicals/our-insights/advanced-recycling-opportunities-for-growth#/.

Figure 1

How Advanced and Mechanical Recycling Complement Each Other



Note. Advanced recycling recycles both (1) additional plastics, e.g., mixed PP, film PE, multi-layered materials not recycled today, and (2) mechanical recycling residuals that would otherwise be landfilled. Source: "Chemical Recycling in a Circular Economy for Plastics: A Vision and Principles Paper." Industry report. By the Coalition of Action on Plastic Waste, Consumer Goods Forum, April 2022. https://www.theconsumergoodsforum.com/wp-content/uploads/2022/04/Chemical-Recycling-in-a-Circular-Economy-A-Vision-and-Principles-Paper.pdf.

Is there an economic case for advanced recycling?

A 2021 report by the Closed Loop Partners, a firm that specializes in circular economy investments, explores the business case for advanced recycling.[12] That report estimated an internal rate of return (IRR) ranging from 6 to 62% based on various factors.

The report also argues that advanced recycling feedstock will command premium prices due to:

1. **Advanced recycling creates virgin-like feedstock.** Feedstock quality is comparable to virgin comparable, so it can be used directly in food packaging, cosmetics, and healthcare applications.
2. **Demand outpaces supply.** High-quality recycled content outpaces supply. The availability of recycled content affects recycled content prices.
3. **Increased opportunity costs.** Penalties for not complying with minimum recycled content requirements and EPR fees based on recycled content use are increasing.

What investments has the industry made in this technology?

The plastic recycling industry is investing heavily in these technologies as part of efforts to meet the goal of reusing, recycling or recovering 100% of plastic packaging in the U.S. by 2040.

[12] Paula Luu, "Transitioning to a Circular System for Plastics: Assessing Molecular Recycling Technologies in the United States and Canada" (Closed Loop Partners, Center for the Circular Economy, February 2021), https://www.closedlooppartners.com/wp-content/uploads/2022/09/Molecular-Recycling-Report_FINAL.pdf.

Since 2017, companies from areas across the United States have announced $8.7 billion in investments for 83 new projects in advanced recycling and recovery, as well as mechanical recycling (as of April 2022), aimed at revolutionizing the use and reuse of plastic resources.[13]

- $8.7 B in investments
- 83 new projects in advanced recycling and recovery (mechanical recycling inclusive)

Using 2018 EPA data as a reference baseline, the American Chemistry Council (ACC) found that the U.S. could support more than 150 new advanced recycling and recovery facilities which could result in:[14]

- 48,500 jobs
- $3.3 billion in annual payrolls
- $12.9 billion in annual U.S. economic output from new advanced recycling and recovery operations

Additional examples may also be found on the Global Partners for Plastics Circularity's website.[15] A 2021 Closed Loop Partner's report discusses where certain companies are in scaling this technology.[16]

[13] Plastic Division, "The Potential Economic Impact of Advanced Recycling and Recovery Facilities in the United States," Industry report (American Chemistry Council, April 2022), https://www.americanchemistry.com/content/download/10845/file/Potential-Economic-Impact-of-Advanced-Recycling-Recovery-Facilities-in-the-US.pdf.
[14] Plastic Division, "The Potential Economic Impact of Advanced Recycling and Recovery Facilities in the United States."
[15] Global Partners for Plastic Circularity, "Tracking Our Progress," Web, Tracking database, 2023, https://plasticscircularity.org/our-progress/.
[16] Luu, "Transitioning to a Circular System for Plastics: Assessing Molecular Recycling Technologies in the United States and Canada," fig. 2.

Appendix A

nexus CIRCULAR

COMPARISON OF PYROLYSIS-BASED RECYCLING AND SOLID WASTE MANAGEMENT

Pyrolysis-based recycling is often mischaracterized as a solid waste management process, however, there are numerous impactful distinctions between the 1990's Solid Waste Management definition and today's Manufacturing classification.

SOLID WASTE MANAGEMENT AND DISPOSAL	PYROLYSIS-BASED RECYCLING = MANUFACTURING
MUNICIPAL SOLID WASTE	RECYCLED PLASTICS
DISPOSAL (REMOVE FROM SUPPLY CHAIN)	RECYCLING (RETURN TO SUPPLY CHAIN)
COMBUSTION-HIGH OXYGEN AT 1400-1500 °C	PYROLYSIS-NO OXYGEN AT 400-500 °C
WASTE-TO-ENERGY	PLASTICS-TO-PLASTICS
WASTE REDUCTION OR ELIMINATION	RESOURCE CONSERVATION
CHARGE FEE / PAID FOR WASTE DISPOSAL SERVICE	PAY FOR PLASTICS AS FEEDSTOCK FOR RECYCLING

COMMUNITY NUISANCE POTENTIAL

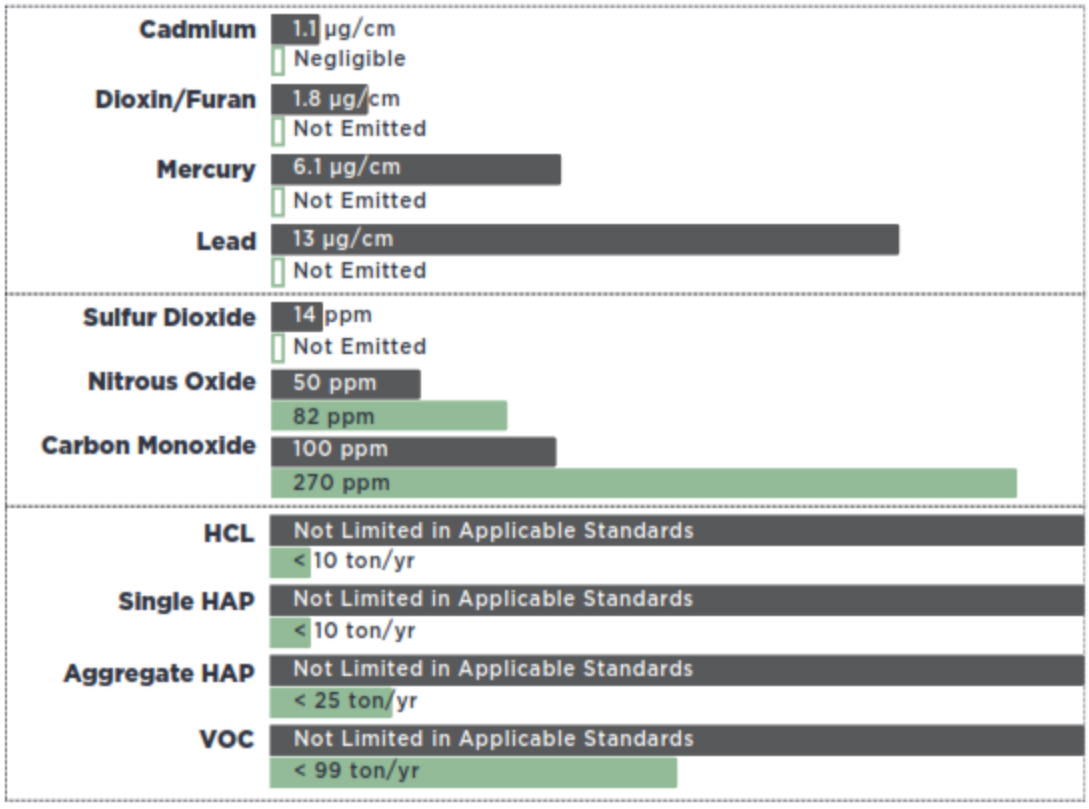
HIGH	traffic, noise	LOW
HIGH	odor	NONE
HIGH	vermin	NONE

PYROLYSIS-BASED RECYCLING IS A MANUFACTURING PROCESS

Nexus Circular's pyrolysis-based recycling technology is a distinctly different process than solid waste incineration, and as such, it is appropriately permitted as a Synthetic Minor Source and regulated accordingly by the Clean Air Act.

	SOLID WASTE INCINERATORS	NEXUS CIRCULAR'S PYROLYSIS-BASED RECYCLING FACILITY
Daily Capacity	≥ 250 tons/day	> 250 tons/day
Source Category for Air Permit	Major Source	Synthetic Minor Source
Regulated by	40 CFR 60 Subpart A 40 CFR 60 Subpart Eb	40 CFR 60 Subpart A 40 CFR 60 Subpart Kb 40 CFR 60 Subpart IIII 40 CFR 60 Subpart JJJJ 40 CFR 63 Subpart ZZZZ

LIMITS FOR SELECTED CRITERIA AIR POLLUTANTS (CAPS) AND HAZARDOUS AIR POLLUTANTS (HAPS)



Appendix B: Suggested Amendment

(15) develop manufacturing regulations related to air emissions and water discharges by an advanced recycling facility.

[The department may develop regulations that ensure advanced recycling facilities are operated in a manner that:

(a) Controls wind dispersion and other surface dispersion of post-use polymers and recovered feedstocks from the advanced recycled facility so that the post-use polymers and recovered feedstocks do not create a public nuisance or pose an imminent and substantial endangerment to public health or the environment, including requiring the operator of the advanced recycling facility to recover on a regular basis any visible post-use polymers or recovered feedstocks that are dispersed beyond boundaries of the advanced recycling facility.

(b) Does not cause a nuisance, vector breeding or fire hazard by storing recovered feedstocks or post-use polymers.]

[…]

(44) "post-use polymer" means a plastic that

[…]

[(F) is not accumulated speculatively]

ADVANCED RECYCLING FACILITIES ARE TIGHTLY REGULATED AT THE FEDERAL, STATE AND LOCAL LEVEL

This document provides a general overview for how advanced recycling (AR) facilities are typically regulated under federal, state, and local requirements. Most of the requirements are based on the products manufactured. For a general overview of advanced recycling, please visit Advanced Recycling: Remaking Plastics to Meet Sustainability Goals. As the U.S. advanced recycling sector continues to mature, most commercially operating AR facilities process a minimum of 50 tons of plastics per day.

EXECUTIVE SUMMARY & PRELIMINARY BACKROUND

AR facilities are **commonly regulated as manufacturing operations** and are subject to numerous sections of the **Clean Air Act** (CAA), including emissions limitations, monitoring, reporting, and recordkeeping requirements under nationally applicable mandates (CAA Sections 111 and 112) and preconstruction and operating permitting requirements under applicable federal, state, and local regulatory authorities.

The AR process starts with specific, **pre-sorted and cleaned, used plastic feedstocks,** which are distinct from unrecovered solid waste and garbage.

AR operations do not incinerate solid waste and their **emissions are tightly monitored and regulated** by authorities for health and safety.

AR facilities are subject to state and federal industrial stormwater requirements (per the **Clean Water Act**) and, as applicable, must remain compliant with any industrial wastewater discharge permit requirements.

AR facilities may need to comply with a range of additional regulations depending on the outputs and coproducts produced as well as byproducts and waste outputs or unusable feedstocks. **Non-plastic materials are disposed of in accordance with state and local solid waste laws.**

PERMITTING FOR ADVANCED RECYCLING FACILITIES

Even with low emissions, AR facilities may be subject to federal, state, and local air and water regulations — including permits — depending on their scale.

AIR PERMITS

Advanced recycling facilities are commonly regulated as manufacturing facilities. Their operations can be subject to the following federal, state, and local air permits – depending on the scale and processing capacity of the operations. Small- to medium-sized AR operations tend to be minor source facilities, and the requirements for both major and minor sources are described below:

FEDERAL

The Clean Air Act sets forth several air pollution control requirements that are typically implemented through state permits. The federal requirements may apply differently depending on whether the facility is a major or minor source of emissions.

Emissions Limits and Other Substantive Requirements

Applies to both major and minor sources:

- National Emission Standards for Hazardous Air Pollutants Compliance (NESHAP) sets standards for hazardous air pollutants from certain major or minor (called “area”) sources.
- New Source Performance Standards (NSPS) establishes emissions standards for new or newly modified facilities within certain source categories, such as synthetic organic chemical manufacturing facilities. NSPS often regulates facilities by size, and the requirements for regulated facilities vary.

Permitting

Major Sources:

- Pre-construction Permits
  - Prevention of Significant Deterioration (PSD) and New Source Review (NSR) pre-construction permits apply to new major sources and major modifications to those sources. Permitting under this program is triggered if a facility’s potential air emissions exceed certain thresholds. Applicable triggering thresholds for a major source for criteria air pollutants (i.e., particulate matter, VOCs, SO_x, NO_x, CO, and lead) are either 100; if the source is on a specific list, or 250 tons per year. Major modification thresholds also vary from 15 to 100 tons per year, depending on where the source is located and the pollutant.

- Operating Permits
    - The majority of advanced recycling facilities fall well below EPA emissions thresholds requiring additional air permits, however, as companies scale up the size or output of their facilities, they may be subject to Title V operating permits.
    - Title V operating permits are required for sources of hazardous air pollutants (HAPs) (i.e., benzene, perchloroethylene, and methylene chloride) exceeding 10 tons per year for a single HAP or 25 tons per year for any combination of HAPs. Title V requirements are generally required for sources of criteria pollutants at 100 tons per year, or HAPs exceeding 10 tons per year for a single HAP or 25 tons per year for any combination of HAPs.
    - Holders of Title V permits must operate in compliance with the permit limitations and certify their compliance with these more stringent permit requirements on an annual basis.
    - Title V permit holders are subject to a suite of regulations in addition to their Title V responsibilities. Additionally, facilities that co-process materials in addition to their advanced recycling operations are already subject to strict regulations. When compared to new facilities, co-processing facilities introduce a minimal amount of new emissions by leveraging existing infrastructure and replacing fossil-based feedstock in the post-use plastics supply chain.

Minor Sources:

- Minor sources are subject to state Minor New Source Review (Minor NSR) pre-construction permitting and operating permit programs.
- Facilities that are minor sources may adopt an enforceable limitation on their potential to emit to maintain their minor source status. These sources are known as “synthetic minor” sources.

STATE

States generally implement the Clean Air Act permitting requirements and will have additional pre-construction and operating permit regulations. Even if the facility is a minor source and is not subject to PSD/NSR or Title V permitting requirements, it will very likely need a state air, construction and/or operating permit, and may also have substantive emission limitation, monitoring, recordkeeping, and reporting requirements.

REGIONAL

Federal air quality enforcement authority is traditionally delegated to the state for enforcement. In turn, some states delegate the authority for enforcement to local air quality authorities. For example, in California, they are called Air Quality Management Districts (AQMD) and they enforce the federal, state, and/or other more stringent standards, depending on air quality concerns.

WATER PERMITS

Process Water Permit

Depending on the technology, water used in the manufacturing process is likely to be treated, recirculated, and periodically purged.

FEDERAL

Under the Clean Water Act (CWA), a facility's discharge of process water to waters of the United States requires authorization. A facility may choose to discharge process water directly, pursuant to a National Pollutant Discharge Eliminations System (NPDES) permit obtained by the facility, or indirectly via discharge to a Publicly Owned Treatment Works (POTW). Prior to discharge, the facility may be required to treat water on-site to meet certain criteria including categorical pre-treatment standards. *See* 40 CFR Part 403, *et seq*. EPA implements the NPDES program in some states.

STATE

Most states implement NPDES permit programs and will issue NPDES permits. A facility's NPDES permit will include discharge limits, sampling, and reporting requirements. If a facility discharges indirectly to a POTW, the POTW will hold an NPDES permit and may, in turn, impose requirements on the facility to obtain a discharge authorization and/or ensure that its discharges do not prevent the POTW from meeting the POTW's NPDES permit requirements.

LOCAL

A discharge permit from the local wastewater authority may be required if process water meets local specifications.

Storm Water Permit

The CWA also regulates discharges of surface water drainage (storm water) through its NPDES and General Permit programs. Advanced recycling equipment is often indoors, so the requirements regarding storm water could be limited to construction, parking, and loading and unloading areas for inbound feedstocks and outbound products. If a facility is located indoors and required physical controls are in place — such as cover and controlled drainage basins — then a facility may receive a "No Exposure Certification," which demonstrates a storm water permit is unnecessary.

REGULATIONS FOR ADVANCED RECYCLING OUTPUTS & COPRODUCTS

OIL OUTPUTS AND PLASTIC PRODUCTS

Operators may need to comply with a range of regulations, depending on the product produced. For example, when the product is to be sold as a raw material or intermediate for new chemicals or plastics production, the following requirements may be required:

FEDERAL

U.S. Environmental Protection Agency (EPA) Toxic Substances Control Act (TSCA) Pre-Manufacturing Notice (40 CFR 720)

Spill Prevention Control and Countermeasure (SPCC) Plan (40 CFR 112)

STATE & LOCAL

State fire code will also require permits for controls due to the storage of oil and/or flammable materials.

BY-PRODUCT OUTPUTS

Char/Carbon Black

A byproduct of an AR process can be in the form of a solid residue, also known as char. If the char meets downstream offtake requirements, then this becomes a product that can be used as carbon black for tire manufacturing, ink production, or an asphalt modifier. Waste generators are required to test the waste to determine whether it should be managed as a solid or a hazardous waste. Most char from small- to medium-sized AR operations is non-hazardous and will be managed as solid waste. If the char is contaminated, then the following hazardous waste management requirements will apply:

FEDERAL

Under the Resource Conservation and Recovery Act (RCRA) (40 CFR 260299), AR manufacturing operations, just like other common manufacturing and industrial processes, may be subject to RCRA regulations if these operations are generating hazardous waste and would be required to manage the waste accordingly.

STATE

Often the enforcement of the federal regulations is delegated to the state's environmental agencies. States may also impose additional waste management requirements through their solid and hazardous waste regulations.

LOCAL

Counties and cities often have additional requirements for the management of non-hazardous waste. In some counties and cities, there may be unique local legislation such as toxic right to know laws that may require further disclosure/reporting if the waste is hazardous. Therefore, the local agencies may set stricter standards than the federal or state governments.

Salts

Plastic resins containing chlorine or fluorine can contaminate the saleable products from certain AR processes and tend to be removed or excluded from the raw material streams to the extent possible. However, some chlorinated plastics may find their way into the process. Because chlorine can cause corrosion of the equipment, it is often converted to salts. The salt can be disposed of as non-hazardous waste.

OFF-SPECIFICATION FEEDSTOCKS

AR facilities typically rely on specific, pre-processed plastic products as feedstock for their recycling activities. These facilities tend to convert intentionally separated, non-bottle plastics such as films, flexibles, and other less commonly recycled plastic products into material used to manufacture marketable products. Even with the pre-processing however, materials such as paper, metal, and other small-unidentified material can occasionally make it through the screening process. The handling and disposal of these non-plastic materials would be governed by applicable solid waste laws.