

2019 Outlook

Environment & Energy

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Companies Latching Onto Nonstick Chemical Alternatives

- *Companies removing PFOA, PFOS from some consumer goods*
- *Manufacturers opting for short-chain or plant-based substitutes*

December 28, 2018

Sylvia Carignan in Washington at scarignan@bloombergenvironment.com

Manufacturers of hundreds of products—from microwave popcorn to plastic cups to firefighting foam—will continue to seek alternatives to products containing chemical compounds that have contaminated water supplies around the country.

Per- and polyfluoroalkyl substances (PFAS) have been used to manufacture nonstick and stain-resistant coatings in clothing, fast-food wrappers, carpets, and other consumer and industrial products.

The Environmental Protection Agency is expected to release a plan to address the contaminants in 2019, but with a lack of enforceable regulations and the possibility of lawsuits, companies will take the initiative to find their own solutions, sources told Bloomberg Environment.

The conversation about how to avoid using PFAS in consumer goods, and avoid substitutes that are persistent in the environment, will be a “big topic” in 2019, Shari Franjevic, program manager at Clean Production Action in Seattle, told Bloomberg Environment in an email.

Companies are investigating whether nonfluorinated alternatives perform as well as the compounds they’re replacing, and whether the alternatives can be recycled or composted, Jessica Bowman, senior director of global fluoro-chemistry for the American Chemistry Council, told Bloomberg Environment.

“I’m sure there will be a lot of activity related to this chemistry,” she said.

Companies around the world are opting to use clay, wax, latex, and other coatings as [substitutes](#) for PFAS in single-use food and drink containers, according to Clean Production Action, which develops tools for screening chemicals. Dart Container Corp.—which manufactures single-use, plastic Solo cups—is using a plant-based lining in some of its cup products.

“I would anticipate that manufacturers will be increasing their offerings of PFAS-free alternatives, and a growing number of purchasers, from large scale such as government organizations and retailers to small scale such as individuals, will seek PFAS-free and safer alternatives,” Franjevic said.

Regulators Closing In

States, especially those on the East Coast, are seeking progressively stricter limits on PFAS compounds in drinking water, while some West Coast states work to limit the public’s exposure through food packaging.

A ban on PFAS in paper food packaging will take effect in Washington state in 2022. The state’s Department of Ecology is first seeking [alternatives](#), which it will report to the state legislature in 2019.

PFAS compounds may cause adverse health effects, including developmental effects to fetuses, testicular and kidney cancer, liver tissue damage, immune system or thyroid effects, and changes in cholesterol, according to the Environmental Protection Agency. No consensus exists on what amounts of the compounds are safe to consume.

The EPA's health guidelines address two PFAS compounds: perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS). The guidelines don't mandate cleanup action, but some water utilities around the country have used those guidelines to gauge the safety of their drinking water.

In 2019, the EPA plans to determine whether it should set an enforceable level for PFOA and PFOS in drinking water.

The agency will also consider designating PFOA and PFOS as hazardous substances, which would give the EPA the ability to order cleanups and recover those costs at contaminated sites, according to Peter Grevatt, chair of the EPA's cross-agency PFAS efforts who is retiring this year.

Bio-Based Alternatives

Coop Danmark AS, a consumer goods retailer in Denmark, stopped selling microwave popcorn in 2014 while it searched for a PFAS-free alternative.

Microwaveable popcorn bags—which have a waxy inner coating—may contain dozens of PFAS compounds, according to a [2017 study](#) published in Food Chemistry. In terms of food packaging, those bags present a challenge for companies seeking to replace PFAS with other substances because they must hold up under intense heat, steam, and oils, according to Tom Neltner, chemicals policy director for the Environmental Defense Fund in Washington.

"We decided to remove the popcorn from our shelves because there was new scientific research showing the risk for abortion was very high if you have high levels of PFAS in your blood," Malene Teller Blume, quality manager for Coop Danmark AS, told Bloomberg Environment.

The company now uses wood fibers to form a cellulose coating inside the bags, and uses third-party certification to ensure its suppliers' raw materials don't contain PFAS above a certain concentration.

At the same time, the company is hoping the Danish government will pass legislation that would formalize such a limit.

"It's still a hard job to maintain our requirements," she said.

Keeping It in the Family

For some uses, companies are opting for other compounds within the PFAS family.

Some companies are moving away from those compounds toward a category of PFAS known as "short-chain" compounds because they have fewer carbon atoms.

Some short-chain PFAS compounds are less likely to persist and accumulate in organisms—including humans—as compared to long-chain PFAS compounds, such as PFOS and PFOA, according to the Interstate Technology & Regulatory Council.

The council is a public-private coalition working to reduce barriers to the use of innovative air, water, waste, and remediation environmental technologies and processes, according to its website.

But, it's not clear whether the short-chain compounds accumulate in the food chain, according to a [study](#) published February 2018 in Environmental Sciences Europe.

The EPA is gauging the human health hazards of two short-chain compounds, GenX and perfluorobutane sulfonic acid (PFBS). The agency will take public comments on its draft [assessments](#) on the compounds until January 2019.

Short-chain compounds are "already widely distributed in the environment," the study stated. When manufacturing some products, such as wax and polish, greater quantities of short-chain compounds may be needed to replace long-chain compounds, according to the study.

Much of the concern about PFAS has focused on human exposure through drinking water, but scientists also are becoming more aware of inhalation. Some short-chain PFAS are more volatile, increasing the likelihood that they are being inhaled, Linda Birnbaum, director of the National Institute of Environmental Health Sciences, said in a webinar held by the American Association for the Advancement of Science on Nov. 27.

Manufacturers believe by moving to short-chain PFAS, they are reducing the potential risk for humans, Birnbaum said, but the effect of short-chain compounds on the environment is still an open question.

Firefighting Foam

Makers of consumer goods aren't the only ones struggling to move away from PFAS chemicals. The military is also having a tough time finding fire suppressants without fluorinated compounds that can meet its high performance standards.

Richard Mach, head of the Navy's office for environmental compliance and restoration policy, said his team has yet to find a firefighting foam without PFAS that can extinguish a blaze in less than a minute.

The Navy needs foams that act this fast because its aircraft carriers often contain large amounts of both fuel and ordnance, he told Bloomberg Environment.

"You hear vendors trying to sell their fluorine-free products saying, 'It's almost as good. It's almost there,'" Mach said. But PFAS is "really, really effective. That's what makes it so challenging."

—With assistance from Pat Rizzuto.

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How Many Lives EPA Rules Save Comes Down to the Counting

- *Industry wants limits on how EPA considers co-benefits of fine particles in air, climate rules*
- *Agency changes to math in climate, mercury proposals will face separate legal challenges*

December 18, 2018

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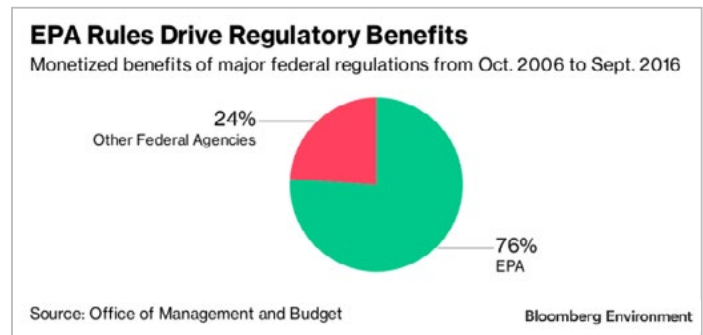
Businesses chafing at EPA air pollution requirements have long complained the agency inflates the health benefits its rules achieve, and 2019 will give the Trump team several chances to make lasting changes to that accounting.

The Environmental Protection Agency is readying a multi-pronged effort that would limit the use of “co-benefits”—reductions in pollutants that aren’t directly regulated—to justify the cost of requiring new air pollution controls.

Those additional benefits sometimes account for the majority of the health protections the EPA touts. Restricting their consideration, particularly for airborne particles, would severely hamper the EPA’s efforts to set stricter carbon dioxide and air quality limits for power plants and other industries going forward.

“Why do you rob the banks? Because that’s where the money is,” Joe Johnson, executive director for federal regulatory process review and analysis for the U.S. Chamber of Commerce, told Bloomberg Environment. “Why do you want to look at the Clean Air Act and [fine particulate matter]? Because that’s what EPA uses for everything it does.”

Fine particle pollution—soot, smoke, or other particles—has been linked to health issues such as aggravated asthma and heart attacks.



Proposal Possible in May

The EPA plans to overhaul the way it calculates the benefits of its rules, with a proposal possible as early as May. The agency is sifting through input on the issue following a spring 2018 advance notice (RIN:2010-AA12). But it isn’t waiting on that proposal to make changes.

At the same time, the EPA in 2019 is tackling co-benefits as it addresses a U.S. Supreme Court order that it justify the costs of setting toxic pollution limits for power plants and sets about replacing Obama-era greenhouse gas rules for the power industry with a more modest alternative.

It is a risky strategy because those efforts will inevitably spark legal challenges and a court loss on any one could undermine the upcoming cost-benefit rule.

“I could guarantee that any regulation at stake that explicitly decides not to consider co-benefits would be enormously vulnerable,” Richard

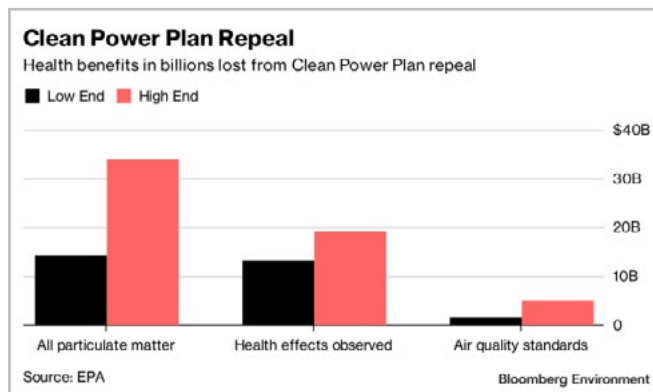
Revesz, a law professor at New York University and director of the Institute for Policy Integrity, told Bloomberg Environment.

But the EPA's top air official said the agency has abundant authority to address fine particulate matter directly, through air quality standards, rules to stop pollution from blowing across state lines, and other regulatory tools. Thus, it doesn't need those reductions to be the focus of other rules such as the EPA's mercury and air toxics, or MATS, rule.

"I don't need MATS to do a bank shot to get [fine particle] emissions reductions," Bill Wehrum, the EPA's air chief, told Bloomberg Environment in an interview. "I can do it directly and do it directly all the time where it's needed and where the legal authority exists under the ambient air quality control part of the" Clean Air Act.

The EPA also thinks about regulatory calculations in ways beyond balancing overall costs and benefits, Wehrum added. Oftentimes, the EPA is instead looking at how cost-effective controlling an additional ton of emissions reductions is, he said.

Clean Power Plan Repeal



Likely the first to face scrutiny is the EPA's March 2019 plan to repeal the Clean Power Plan, Obama-era carbon controls on existing power plants.

In its October 2017 [proposal](#) (RIN:2060-AT55), the EPA previewed a new approach to counting particulate matter co-benefits.

The EPA typically considers all of the health benefits of its rules, even if pollution falls to levels below federal air quality standards. But in a [regulatory impact analysis](#) for the October proposal, the EPA considered two additional scenarios.

One would count only the benefits of reducing particulate matter to the lowest level where health effects are observed. The other would discount any benefits from reducing air pollution below national air quality standards. Those options resulted in smaller amounts of co-benefits associated with cutting power sector's greenhouse gases.

The EPA has acknowledged that particulate pollution affects people at all levels since the Reagan administration, but the latest proposal doesn't offer a new scientific explanation for the reversal, critics said.

"Since the 1970s, it's been clear that [fine particulate matter] doesn't have a threshold below which there are no adverse outcomes," Revesz said.

Affordable Clean Energy Rule

The EPA took the same approach in [analysis](#) for its Affordable Clean Energy [proposal](#) (RIN:2060-AT67), which would replace the Clean Power Plan with narrower carbon controls. That could draw lawsuits as soon as March 2019, when the EPA plans to finish the rule.

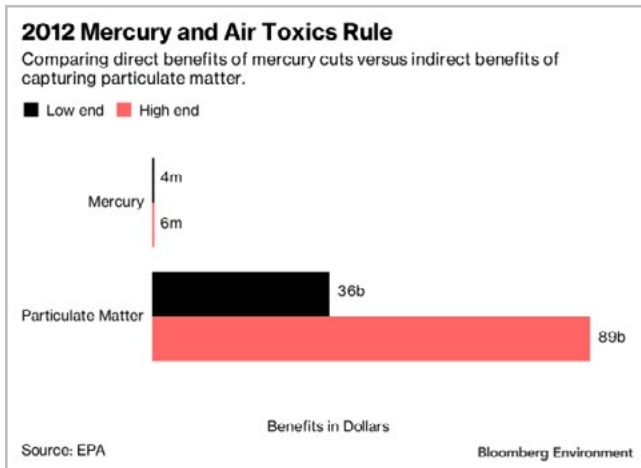
The approach is a step in the right direction, but the EPA should take a more focused view, the Chamber's Johnson said. Federal air quality standards are the EPA's primary tool to address particle pollution. EPA rules shouldn't claim substantial benefits of particulate matter reductions as part of other air and climate regulations, he added.

That would be in line with 2003 White House budget office [guidance](#), Johnson said. But not everyone agrees.

The guidance, Circular A-4, "leaves no ambiguity about this. You should count co-benefits," Joseph

J. Cordes, an economics professor at George Washington University, told Bloomberg Environment.

Mercury Rule



One of the most direct considerations of the benefits of additional pollution reductions will come when the EPA responds to a Supreme Court order directing it to include compliance costs in its decision to retain or weaken mercury pollution standards for power plants.

As much as 89 percent of the 2012 rule’s health benefits came from reducing fine particles, which weren’t directly regulated, according to EPA [estimates](#).

Power plants have already met the standards, and the EPA said it won’t change the requirements. But environmental advocates see the reconsideration as a prelude to weaker limits.

“Why go through the paper exercise if your ultimate goal is not to undermine the standards

itself?” Graham McCahan, senior attorney with Environmental Defense Fund, told Bloomberg Environment.

If the EPA considers a fuller range of costs but limited benefits, critics say it could serve as a litmus test for how courts view this approach.

Restricting those additional benefits, ironically, would make the Trump administration guilty of what it and industry groups accused the Obama EPA of: manipulating cost-benefit reviews, Brendan Collins, a partner with Ballard Spahr LLP in Philadelphia, told Bloomberg Environment.

The result “will be to reject regulatory action by hiding behind a lopsided cost-benefit analysis,” he said.

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Enviro-Cops Seek Payoff Chasing Emissions Cheats

- *EPA to continue ramping up enforcement on car, truck emissions*
- *Aftermarket devices will also be targeted*

December 20, 2018

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Now is not a great time to try to soup up your car's engine by disabling its emissions controls.

EPA enforcement officials say in 2019 they're going to expand already stepped-up efforts to crack down on people and companies who violate vehicle emissions standards, an effort that gained steam following 2015 revelations that Volkswagen AG was cheating on emissions tests.

The Volkswagen scandal made agency officials realize just how much emissions cheating was going on—and how ramping up enforcement could yield huge environmental benefits.

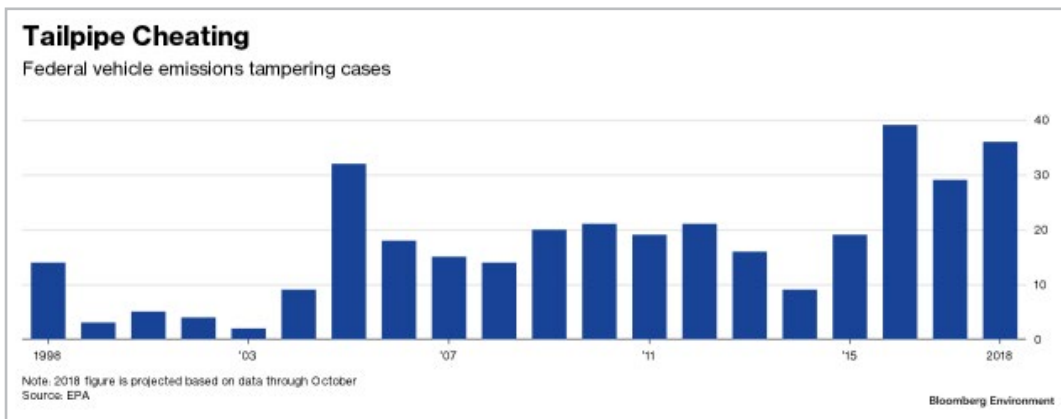
"We were alerted to the fact that even large manufacturers have significant problems," said Phillip Brooks, head of the air enforcement division at the EPA's Office of Enforcement and Compliance Assurance. "I think you're going to see continuing

efforts—not just manufacturers of cars and trucks, but manufacturers of smaller engines, ATVs, generators, weed whackers."

"Imagine taking all of the pollution controls off of a semi truck," Brooks told Bloomberg Environment. "That's often a factor of hundreds or thousands of times more pollution. If you take the pollution controls off of a semi, it's like putting on the road hundreds or thousands of new trucks."

More Cases

The number of enforcement actions over vehicle tampering has been trending upward in recent years, according to EPA data analyzed by Bloomberg Environment. Until recently, most years would see about 20 actions filed, but that number has been closer to 35 for the past three years.



Brooks' colleague in the EPA air enforcement division, Evan Belser, said vehicles with disabled pollution controls are the largest source of air pollution from cars and trucks. "The effort to defeat controls is disturbing," Belser told Bloomberg Environment.

Aftermarket Devices

Brooks and Belser said carmakers aren't their only targets, or even their largest. The EPA will also be going after the makers of so-called "aftermarket devices," which allow drivers to tweak or in some cases eliminate the pollution controls on their own cars or trucks.

Derive Systems is one of those aftermarket device makers. This fall, the Florida-based company agreed to pay a \$300,000 penalty for selling hardware that car owners could plug into their vehicles to essentially turn off some of their pollution regulators.

Katherine French, Derive's chief marketing officer, said the agreement with the EPA was actually a positive development for her company and its competitors. The agency, she said, clarified that aftermarket devices can be used legally in some circumstances, such as to enhance a DIY race car or to boost a pickup truck's towing power.

Derive no longer makes devices that give consumers the power to hack into cars' computers and alter emissions controls, she said.

High Tech

The EPA's case against Derive was notable because it was a sign of how computers have become integral to the functioning of cars—and to the devices people use to tamper with their cars.

Belser said the enforcement agents in his office have had to adapt to this new technological world, where they are investigating firms like Derive that are essentially software companies.

Aftermarket devices allow car owners "to substantially change emissions controls without picking up a wrench," he said. "I don't think it makes emissions enforcement harder, but it does lead to more tampering."

Bruce Buckheit, an environmental consultant who used to have Brooks' job at the EPA, said the agency has to keep watch over these aftermarket devices because they can cause cars to spew many times more pollution than is allowable. "The multiplier effect is huge," said Buckheit, now with the Climate Works Foundation.

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EPA to Ease Companies' Coal Ash Disposal Rules

- *EPA expected to finalize coal ash regulations*
- *Power utilities in favor of delegating disposal permits to states*

December 21, 2018

Sylvia Carignan in Washington at scarignan@bloombergenvironment.com

Power utilities and state regulators can expect coal ash disposal requirements tailored to individual sites and reduced compliance obligations next year if the EPA moves forward on its regulatory rewrite.

The Environmental Protection Agency is revisiting its 2015 coal ash disposal rule after environmental and industry groups challenged it in court and in light of changes to states' authorities under a 2016 water infrastructure law.

The agency is considering whether states—or in some cases the EPA itself—should establish restrictions on a coal ash disposal facility's location that consider site-specific conditions such as proximity to waterbodies and risks.

The changes are consistent with the agency's preference for states to take the lead on setting their own disposal requirements, Christopher Bryant, senior regulatory consultant for Bergeson & Campbell PC in Washington, told Bloomberg Environment. The agency is likely considering that "one size fits all doesn't really work," he said.

Coal combustion residuals, or coal ash, are the waste generated by coal-fired power plants. The ash contains metals such as arsenic, chromium, and mercury that pose risks to public health and the environment, especially if spilled into water supplies.

Other regulatory issues the agency is expected to tackle in 2019 include clarifying cleanup requirements for contaminants that don't affect groundwater, allowing states to determine how long a facility can take to show that it has

cleaned up contamination, and adding boron to the list of contaminants that would trigger cleanup, according to Harold D. Register Jr., a senior engineer in Consumers Energy's Environmental Services Department, who spoke at a [September webinar](#) organized by the Air & Waste Management Association.

Legal Challenges

The 2015 rule ([RIN:2050-AG88](#)) that the EPA now wants to reconsider created minimum standards for existing and new coal ash ponds and landfills, directing their operation, location, design, groundwater monitoring, and requirements for closure and corrective action.

The Utility Solid Waste Activities Group and other power utility representatives, as well as environmental groups such as the Waterkeeper Alliance, initially asked the U.S. Court of Appeals for the District of Columbia Circuit to review the 2015 rule.

Certain claims the groups couldn't settle in court were sent back to the agency.

In the first set of changes, issued in July, the agency allowed state directors to suspend groundwater monitoring requirements for coal ash disposal units under certain conditions, and also let them issue technical certifications, instead of requiring certifications from professional engineers. A certification is required to show that a cleanup plan has been completed and meets regulations.

The agency expects the first phase of changes to be completed in June 2019, and the second phase by the end of 2019. Those final rules are likely to be challenged after they're published, Bryant said.

State Authorities

Alabama, Georgia, and Kansas are seeking the EPA's approval for their coal ash disposal permitting programs. If approved, they would be able to tailor their permitting and enforcement regimens to fulfill their specific needs while still meeting baseline federal requirements.

The 2016 Water Infrastructure Improvements for the Nation Act gave states the ability to set up their own permitting programs for coal ash disposal. States must get EPA approval before they can start issuing permits.

Coal-powered electric utilities generally have favored states rather than the federal government taking the lead on coal ash enforcement. That would preclude advocacy groups from filing

lawsuits to enforce federal requirements, Jim Roewer, executive director of the Utility Solid Waste Activities Group in Washington, told Bloomberg Environment.

"It's going to bring more certainty to the process," he said.

In June 2018, Oklahoma became the first state to get the EPA's approval for a state permitting program for coal ash disposal. The EPA determined that the Oklahoma program is as protective as the federal program it replaces.

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'Most Active Year' on EPA Toxics Rules (Corrected)

- EPA to propose controls for most chemicals since TSCA update
- Two federal courts to weigh in on Trump administration's interpretations of law

December 19, 2018

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The EPA will examine and propose controls for more chemicals next year than it has done since Congress overhauled the nation's primary chemicals law in 2016.

Companies and the trade associations that represent them need to "take a deep breath and re-energize for 2019, which may be the most active year yet," Martha Marrapese, a partner with Wiley Rein LLP's Washington office, told Bloomberg Environment.

The deadlines the 2016 Toxic Substances Control Act (TSCA) amendments set won't allow much time for companies or trade associations to gather information to help shape the Environmental Protection Agency's decisions, she said.

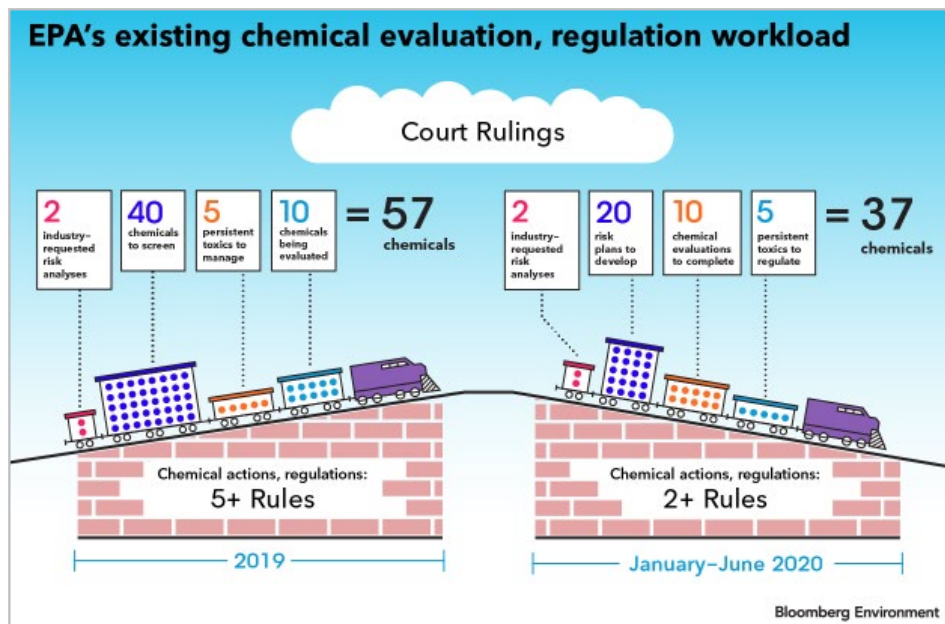
Two federal courts also will weigh in next year on whether three rules the EPA issued to

implement the amended law properly balance its dual goals of supporting commerce while protecting public health and the environment.

"2019 is a critical year in seeing whether TSCA works," said Marrapese, who specializes in chemical regulations.

Chemical and other manufacturers will face the EPA's extra scrutiny while also dealing with economic pressures.

Lower oil prices, a potential global economic slowdown, and oversupply in some commodity chemicals such as olefins, will put pressure on profits, said Christopher Perrella, a Bloomberg Intelligence analyst. Olefins include chemicals such as ethylene and propylene that are core building blocks for many fiber, rubber, and plastic materials.



Imminent

No later than the end of March 2019, the EPA must release a list at least 40 chemicals it must quickly sort, or “prioritize,” by Dec. 22, 2019.

The agency must decide which 20 chemicals will be high priorities for immediate risk assessment, which could then lead to regulations.

The agency also must designate 20 chemicals as low priorities by the same December deadline. A low priority designation means the EPA sees no reason to examine the chemical further for potential risks. The agency could revise that decision if new science emerges.

The EPA will give all interested parties 90 days to weigh in on and provide information about the chemicals it will prioritize in 2019. The agency will offer another 90 days to comment on whatever high- or low-priority designations it proposes.

The information companies have about actions they take to protect workers, the concentration of a chemical used in a mixture, and environmental monitoring data could play a critical role in shaping the EPA’s chemical safety decisions and they should consider sharing it, said Mark N. Duvall, a principal attorney with Beveridge & Diamond PC’s Washington office.

Ninety days is not a lot of time for industries that make and use the 40 chemicals to compile information, Marrapese said.

The agency should use the growing amount of chemical information compiled by its Office of Research and Development, Canadian regulators, and the scientific summaries posted by the European Chemicals Agency, said Sarah Brozena, senior director of regulatory and technical affairs at the American Chemistry Council.

All parties need to remember, however, that TSCA doesn’t require the EPA to have complete

information about each chemical to decide whether it is a high or low priority, said Mike Walls, vice president of regulatory and technical affairs with the same trade association, the main industry group representing U.S. chemical manufacturers.

Risks and Rules

Other rules, risk analyses, and actions the agency must release in 2019 include:

- An updated TSCA inventory that distinguishes chemicals that have been in commerce since 2006 from those that aren’t currently in production;
- A proposed rule describing how it will review industry claims that thousands of chemicals on the inventory have identities the EPA must keep confidential;
- A revised Chemical Data Reporting rule to ensure information chemical manufacturers periodically give the EPA are data agency officials need.

By June 2019, the agency must propose a rule to manage five chemicals that persist in the environment, build up in the food chain, and are toxic. The chemicals are two flame retardants, decabromodiphenyl ethers (DecaBDE) and phenol isopropylated, phosphate (3:1); two compounds used to make rubber, hexachlorobutadiene (HCBD) and pentachlorothiophenol (PCTP); and 2,4,6-tris(tert-butyl)phenol, a fuel antioxidant that boosts octane and prevents rust.

By December 2019, the agency is supposed to complete its analyses of the health and environmental risks asbestos and nine other chemicals pose. That conclusion will determine whether those compounds must be labeled, restricted, or banned to reduce unreasonable risks. The law allows the agency to delay those until June 2020, but the agency has said it won’t. Delays would only add to its early 2020 workload.

As soon as the EPA selects the 20 high-priority chemicals in December, it must start planning how it will evaluate their risks. The agency must release by June 22, 2020, plans that describe the health and environmental concerns and the ways chemicals are made, used, distributed, and disposed that it will examine.

All of these agency analyses and rules address chemicals in commerce. Congress revised TSCA to push the agency to oversee chemicals that had long been on the market, but never examined, said Stephen Owens, a partner with Squire Patton Boggs LLP's Phoenix office.

Staff

The EPA didn't reply to a question about how many people are working in its chemicals office but said it was allowed to hire up to 340 in fiscal year 2018, an increase from 311 in the previous year.

The agency said it couldn't comment on how many people it will have in fiscal year 2019 until Congress decides on the EPA budget.

But the workload facing the EPA's chemicals office will expand in 2019 faster than the office's workforce will, said Lynn Bergeson, managing partner of Bergeson & Campbell P.C.

Industry fees, which companies began to pay on Oct. 1, 2018, will help the agency hire staff and contractors, she said by email.

"But there will be a significant lag while EPA searches for and hires the necessary experts or while EPA sets up new contracts to support its work," Bergeson said.

Court Cases

While the EPA continues to churn out risk evaluations and rules, the U.S. Courts of Appeals for the Ninth Circuit and the D.C. Circuit are expected to rule on two TSCA cases. Environmental, health, and labor groups

challenged three rules that laid the foundation for the EPA's implementation of the chemicals law.

The courts' rulings will guide the agency's chemical decision making in this and future administrations.

The Ninth Circuit will weigh in on two related regulations dealing with the EPA's process of selecting chemicals for risk analysis and its process of carrying out such analyses.

The case before the D.C. Circuit—which was brought by the Environmental Defense Fund—focuses on whether the agency reached the right balance protecting manufacturers' confidential business information while honoring the public's right to know about chemicals to which they may be exposed.

Core Questions, Impact

The most important question before the Ninth Circuit is whether the law gives the EPA discretion to choose which "conditions of use" it will examine as it decides whether or not a chemical poses an unreasonable risk, Duvall said.

Amended TSCA has a broad definition of chemicals' "conditions of use."

The phrase includes any part of a chemical's lifecycle such as how it's manufactured; the ways workers might be exposed during production; how other companies use the compound; whether their workers would be exposed; how much of the chemical is released into the air, water, and soil; and whether the chemical harms people or the environment.

The agency also must consider risks facing groups of people who may be particularly susceptible to chemicals or highly exposed to them.

The environmental, health, and labor groups that filed the Ninth Circuit case allege the EPA has excluded too many chemical uses, narrowing possible regulation. The result is that the EPA will

underestimate the possibility that people could contract cancer, be unable to bear children, or face other health problems, they say.

“We hope the courts instruct the agency that it has to protect public health and the environment,” said Liz Hitchcock, acting director of Safer Chemicals, Healthy Families, which represents a broad coalition of nonprofit groups that argue the agency has failed to protect people and the environment as Congress intended.

Eighteen trade associations representing the battery, chemical, electronics, paper, mining, and other industries support the EPA’s rules. Congress gave the agency the authority to omit some ways chemicals are used, occur in the environment, and are disposed of from its TSCA risk analyses, the agency and industry groups say.

If the Ninth Circuit overturns the risk-related regulations it’s reviewing, the EPA may have to re-do rules and revise some or all 10 risk evaluations, said Owens, who served as the EPA’s assistant administrator for chemical safety and pollution prevention under President Barack Obama.

The D.C. Circuit’s ruling will affect confidential business information claims on many different types of documents companies file under TSCA, said Duvall.

“If the rules are upheld that will add certainty and predictability,” said Walls, from the American Chemistry Council.

(Corrects tribunal in multiple locations for the Environmental Defense Fund’s challenge to EPA’s rule.)

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Courtroom Fights Over Future of Pesticides

- *Court battles continue over chlorpyrifos, glyphosate, dicamba*
- *Next glyphosate trial set for Feb. 25, 2019*

December 21, 2018

Tiffany Stecker in Washington at tstecker@bloombergenvironment.com

Three pesticides that dominated recent headlines will continue to make news in 2019, as attorneys wrangle over the future of the chemicals' in court.

Chlorpyrifos, dicamba, and glyphosate are decades-old chemicals which manufacturers have held fast to, because they are effective and relatively inexpensive.

Chlorpyrifos was first registered by the Environmental Protection Agency in 1965, and dicamba was approved two years later. Glyphosate, the youngest of the bunch, received EPA approval in 1974.

The pesticides are undergoing scrutiny for their effects on health and the environment. Chlorpyrifos, an insecticide linked to neurodevelopmental delays in children, could be banned from use if the EPA is forced to comply with a U.S. Court of Appeals for the Ninth Circuit order to revoke all uses on food crops.

Glyphosate, the world's most commonly used herbicide, was pegged a "probable" carcinogen by an international cancer research agency in 2015, spurring fierce backlash from the original manufacturer, Monsanto Co.

The company argued that an overwhelming number of regulatory agencies around the world have determined that it is not harmful at concentrations allowed under pesticide labels.

And dicamba, an herbicide reformulated to combat weeds that no longer die with glyphosate, is allegedly

responsible for millions of acres of crop damage in farm country as it drifts to off-target fields.

Companies say these chemicals are necessary so that pests won't evolve resistance against the remaining pesticides available for farmers.

"Fewer active ingredients will simply put more pressure on insect, weed, and plant disease pests to develop resistance," John D. Conner Jr., an attorney with Crowell & Moring LLP in Washington, D.C., who works with pesticide manufacturers told Bloomberg Environment.

Glyphosate Will Cost Bayer Millions

Bayer AG, which bought Monsanto this past summer, is facing more than 9,000 lawsuits in state, federal, and local courts alleging glyphosate in their Roundup weedkiller caused non-Hodgkin lymphoma. Six trials have been scheduled for 2019 and two for 2020, as the EPA is slated to re-approve the herbicide for use by the end of next year.

The first trial in the litigation forced Bayer to cough up \$78.6 million in damages. A jury concluded in August that Monsanto should be held accountable for Dewayne "Lee" Johnson's non-Hodgkin lymphoma. Johnson, a groundskeeper in the San Francisco Bay area, frequently used Roundup at work.

The [next trial](#) will begin Feb. 25, 2019, in the U.S. District Court for the District of Northern California. Challenger Edwin Hardeman, a California man who began using Roundup in the

1980s to control poison oak and weeds around his home, was diagnosed with non-Hodgkin lymphoma in 2015.

A decision in that case from Judge Vince Chhabria could direct the course for thousands of similar lawsuits. One other trial is scheduled in the same federal court where hundreds of similar challenges have been consolidated. Other trials have been scheduled in St. Louis city court, St. Louis county court, and the California Judicial Council Coordination Proceedings.

As the trials proceed, plaintiffs will have to reach an increasingly steep bar showing that glyphosate exposure caused an individual's cancer, Holly Froum, a Bloomberg Intelligence legal analyst said during a Dec. 19 webinar.

"Just because it can cause cancer doesn't mean it did," Froum said. She expects Bayer to eventually pay between \$5 billion and \$10 billion to settle all of the cases.

Farmers Fight In Court Over Dicamba

Glyphosate won't be the only legal headache for Bayer in 2019.

The company is also gearing up for [multi-district litigation](#) in the U.S. District Court for the Eastern District of Missouri against farmers who say that Bayer's dicamba herbicide, Xtendimax, was sold in 2017 and 2018 without the necessary studies to ensure that it wouldn't damage neighboring crops.

More than 100 soybean growers, peach farmers, and others also challenged Bayer on antitrust claims, saying the drifting herbicide forces growers to buy the company's genetically modified seeds that grow into soybeans and cotton that aren't harmed by dicamba.

The company took the old dicamba molecule and tinkered with it so that it didn't evaporate quickly in heat. But over the last two summers, millions of acres of soybeans and other crops

were damaged from drifting dicamba, raising questions on whether the new products from Monsanto, BASF SE, and DowDuPont Inc. were any better than the earlier versions.

Bayer maintains that the damage was caused by unauthorized use of the old versions of dicamba.

The EPA conditionally re-approved the pesticide Oct. 31 for two years with additional restrictions aimed at reducing off-target movement of dicamba. A separate lawsuit in the Ninth Circuit from environmental groups argues that the EPA never should have registered Monsanto's product. Judges have yet to issue their opinion in that case.

Trump Administration Defends Chlorpyrifos

The federal government also is expected to [continue defending](#) its position to reverse a proposed ban on chlorpyrifos, an insecticide developed by DowDupont but now made by many different companies.

The Obama administration was on course to cancel all agriculturally approved uses of the pesticide, but former EPA Administrator Scott Pruitt reversed that plan in March 2017, punting a decision to 2021.

A split 2-1 Ninth Circuit panel decision in August ordered the EPA to cancel all registrations and revoke all tolerances—the acceptable amount of the pesticide on food—of chlorpyrifos. The Trump administration then asked the full Ninth Circuit to review the decision.

The court could deny the request but make minor changes to the August order, Patti Goldman, an attorney with Earthjustice in Seattle who is representing environmental groups in the litigation, told Bloomberg Environment. It's rare, but possible, that the court will grant the petitions for an "en banc" hearing.

If the petitions are denied, the administration could take the case all the way to the Supreme Court.

"I don't think there's the basis for the Supreme Court to take the case," Goldman said. "But they may ask."

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Energy Office Pushes 'Coal Plants of the Future'

- *Energy Department wants to advance research on small, more efficient coal plants*
- *Will issue funding opportunities early 2019*

December 27, 2018

Rebecca Kern in Washington at rkern@bloombergenvironment.com

One of the top priorities for the Energy Department's Fossil Energy Office in 2019 is soliciting proposals and funding research on miniaturized coal plants.

The Fossil Energy Office wants to advance the "coal plants of the future," which are small modular facilities that the department claims are more efficient than operating plants today and could be fitted with carbon capture technologies. However, the likelihood of a domestic market for such plants is a far-off possibility given the low price of natural gas.

The U.S. is currently the world's top oil and natural gas producer, with production increasing by nearly 60 percent since 2008.

Despite this oil and gas boom, the Trump administration has made multiple attempts to revive the coal industry, including a plan to federally subsidize economically struggling coal plants that was shot down by the Federal Energy Regulatory Commission.

Since the beginning of 2010, operators have either retired or announced the retirement of 637 coal units in 43 states, the equivalent to 120,000 megawatts of electricity and 40 percent of the existing fleet, according to the American Coalition for Clean Coal Electricity, a trade association for the coal producers and electricity generators. Coal consumption in the U.S. is also at the lowest point in since 1979.

"That's why we're supportive of the Department of Energy as they look at these small modular units that would increase power plant efficiency, provide greater operational flexibility, and lower carbon dioxide emissions," Michelle Bloodworth,

the president and CEO of the coal and electricity trade association, told Bloomberg Environment.

'It's a Fantasy'

Steve Winberg, the head of the Fossil Energy Office, acknowledged that with the low gas prices in the U.S., small coal plants may not be built right away. But, he said, the technology could be exported to developing countries.

"The Fossil Energy office has always been working on the next generation of metals, the next generation of controls, the next generation of sensors," Winberg told Bloomberg Environment. "This is going to be transformational technology."

However, analysts say there's likely no market for these new coal plants to be built.

"I just can't imagine any company is going to take the risk," said David Schlissel, director of resource planning analysis at the Institute for Energy Economics and Financial Analysis, which conducts energy and environmental research.

"I just think it's a fantasy that the pro-coal fanatics in the federal government are trying to push," Schlissel told Bloomberg Environment. "I don't think it's ever going to happen."

Small Coal Plant Proposals

The Fossil Energy Office is responsible for investing in research and development for fossil energy resources, including coal, natural gas, and oil, received \$740

million in appropriations fiscal year 2019, a slight increase of 2 percent from the previous year.

The office on Dec. 7 issued a [request for proposal](#) soliciting conceptual designs for a small modular coal plant. The office is encouraging architecture and engineering firms, technology developers, equipment manufacturers, and end users to work together as teams on these proposals.

Then it plans to issue two funding opportunities as a cost-share in 2019 to support the research and development of at least one prototype of a small modular coal plant.

The first would focus on helping fund the research and development of steam turbines that can be integrated into a 50 to 350 megawatt advanced coal plant design.

The second funding opportunity would focus on the R&D for critical components and advanced approaches—such as manufacturing, fabrication, and advanced design—that are needed to support a small coal plant.

Winberg said he didn't have an estimate for how much these small plants would cost to build. But the initial pilot plants would be a cost-share of 80 percent government with 20 percent from industry and the private sector.

"They'll waste federal taxpayers' money on these projects," Schlissel said.

No Clear Domestic Market

The industry acknowledges that there are economic headwinds to building new large coal plants in the U.S.

"The likelihood of building large traditional coal plants, as we've done in the past, is not currently on the horizon," said Barry Worthington, executive director of the U.S. Energy Association, which represents large energy companies like American Electric Power Co. Inc., which is closing uneconomic coal units, and coal producers like Peabody Energy.

"Nobody has an intention right now of building a 600 or 800 megawatt coal plant," he told Bloomberg Environment.

However, he said he was behind small modular coal plants, equating them to small modular nuclear plants. Those are 50 megawatt nuclear units that claim to be safer to operate but are still under regulatory review and won't hit the market until the mid-2020s.

Who will be interested in applying for the request for proposal and funding opportunities is still uncertain, but Winberg said the department received 30 confidential responses to a request for information on the concept of small coal plants in June.

"I don't think you're going to see anybody waving their hand up in the air" until the agency issues the request for proposal, Worthington said.

He speculated states with regulated generation utilities and sizable coal resources and workers such as Kentucky and Tennessee would likely be interested in the small coal plants.

"A state could easily say, 'We think over 50 years, the levelized cost could be cheaper but there's also an economic development value that we get from local jobs that we don't get from other fuels,'" he said.

However, he acknowledged that states with deregulated, competitive energy markets aren't likely to pursue these new coal plants.

"It doesn't work if the price of gas stays low and renewables get cheaper. Forward prices for natural gas, they don't look like they're going anywhere in the next decade," Schlissel said.

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Coal Use Tumbling, But Brief Uptick Possible

- *Coal consumption predicted to dip 8 percent in 2019, after 4 percent in '18*
- *Exports likely to remain steady*

December 20, 2018

Stephen Lee in Washington at stephenlee@bloombergenvironment.com

Two years in, the Trump administration's many efforts to revive the coal sector haven't done much to bend the curve.

Big picture: That narrative doesn't seem likely to change. The U.S. Energy Information Administration said Dec. 4 that coal-based power consumption will fall by 8 percent in 2019. That dip would come on the heels of a 4 percent drop in 2018, which itself marked the lowest level of coal consumption in 39 years.

The EIA further said 4 gigawatts of coal-fired capacity will be retired in 2019, following the 14 gigawatts that went dark in 2018—the second-most ever in a single year.

Still, 2019 might offer a little short-term relief for the big coal producers.

Give and Take on Exports

One reason is that coal exports, on which the entire industry now relies heavily, are likely to remain steady in the coming year, said Andrew Cosgrove, a Bloomberg Intelligence global metals and mining analyst.

Although China is trying to help its own coal sector by unofficially capping imports, India is picking up the slack by buying more U.S. coal, Cosgrove told Bloomberg Environment.

At the same time, the power source that has been pushing coal aside—cheap natural gas—may not be quite so formidable in 2019, according to Cosgrove.

"If natural gas prices stay high, where they're at, you might have some of that structural power plant loss being compensated by cyclical switching and increasing capacity factors at coal plants," Cosgrove said. "Nobody's building new coal plants, but we definitely could see some higher capacity utilization."

Trump Effect Still in Play

Coal industry representatives also say they're bullish about the coming year, not least because President Donald Trump remains such a potent wild card.

Trump has supported the coal industry since his presidential campaign. Since taking the reins, his administration has ordered grid operators to buy coal-fired power, proposed cost recovery to power plants that stockpile at least a 90-day supply of coal, and scrubbed the Obama-era Clean Power Plan, which would have required the first limits on carbon dioxide emissions from power plants.

"While they haven't found a silver bullet, they clearly have dedication to protecting and advancing the coal fleet," Rich Nolan, head lobbyist at the National Mining Association, told Bloomberg Environment.

"I just don't think the solutions they've been working on have reached a conclusion yet," Nolan said. "There's a lot of great ideas out there, but they keep coming back for more and trying to do everything they can to maintain the value that coal provides. You'll see a lot more there."

'Oversight Role'

On the other hand, the Democratic takeover of the House is sure to bring a harsh spotlight on the Trump administration's pro-coal efforts.

Rep. Raul Grijalva (D-Ariz.), who is virtually assured of becoming the next chairman of the House Natural Resources Committee, has said he wants to make a priority of incorporating climate change into federal decisions on natural resources.

"We need to demand accountability and insist on the oversight role," Grijalva told Bloomberg Environment.

To keep some of those ambitions in check, coal lobbyists say they will spend time reaching out to freshman lawmakers and educating them about new technologies, such as high-efficiency, low-emission coal plants.

"Well be talking to members on both sides of the aisle in the House to make sure the rhetoric, the passion, the emotion, and the excitement of a lot of new members of Congress is duly addressed, so they understand that we can partner with them to find technology solutions," Nolan said.

Manchin's Rise Could Help Coal

In the Senate, the elevation of a coal booster, Sen. Joe Manchin (D-W.Va.) to the ranking member slot on the Energy and Natural Resources Committee has riled many progressive Democrats and environmentalists.

Manchin has introduced legislation in the past that would provide tax credits to keep coal plants afloat and direct the Energy Department to research new coal technologies.

The chairman of the Energy Committee, Sen. Lisa Murkowski (R-Alaska), is herself a backer of more coal production.

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House Democrats to Take Aggressive Oversight Course

- *Democratic House to shine spotlight on regulatory rollbacks*
- *Expect oversight of EPA rollbacks, pace of chemical reviews, but gridlock on major environmental legislation*

December 27, 2018

Dean Scott in Washington at dscott@bloombergenvironment.com

House Democrats will return to power in 2019 united on the need for intensive oversight of the Trump administration.

The Democrats intend to throw the spotlight on the Environmental Protection Agency, Energy Department, and other Trump administration agencies that got little scrutiny by a Republican-controlled Congress over the last two years.

With GOP control of the Senate and President Donald Trump in the White House, incremental environmental legislation in general is likely to supersede broader initiatives.

On chemical policy, expect incoming House Energy and Commerce Chairman Frank Pallone (D-N.J.) to push the EPA to step up implementation of chemical reviews under the Toxic Substances Control Act, which Congress amended in 2016.

Pallone's panel could also take up measures that might force the EPA to move faster on setting standards for synthetic contaminants in drinking water, such as perfluorinated chemicals found in Teflon or the rocket fuel component perchlorate.

The Democratic-run House is also likely to bring more pressure to increase funding for water infrastructure projects. Incoming House Transportation and Infrastructure Committee Chairman Peter DeFazio (D-Ore.), who has complained of inadequate funding for water

projects, could push for bills to dramatically increase funding there.

'Revenge Majority'

"At some level, a Kierkegaardian dread must be settling in at EPA," Lynn L. Bergeson, managing partner with Bergeson & Campbell PC, told Bloomberg Environment, referring to Soren Kierkegaard, the Danish thinker considered the first existentialist philosopher. While hearings "are inevitable, their content and their ultimate purpose and utility are another matter," she said.

Some Republicans are skeptical that Democrats will use their majority power constructively.

"The way I look at the House is, they are planning on a revenge majority," Sen. Cory Gardner (R-Colo.), who chairs the Senate Energy and Natural Resources Committee's energy panel, told Bloomberg Environment.

Democratic control of the House also will all but collapse GOP-led efforts to add environmental policy riders to appropriations bills, with Rep. Nita Lowey (D-N.Y.), an environmental advocate, at the helm of the powerful House Appropriations panel.

Rep. Eddie Bernice Johnson (D-Texas) also is vowing to bring science back to the House Science, Space and Technology panel as its next chairman, ending Republican control of a

committee that has often been more concerned with how regulations are hurting industry.

On climate change, the House Energy and Commerce Committee—along with panels on science, transportation, oversight and government affairs, and even foreign affairs—all expect to grill Trump officials on rollbacks of climate and other environmental rules and international climate policy.

Issues to Watch

Other environment and energy issues to watch on Capitol Hill in 2019 include:

- A large infrastructure bill, an issue on which lawmakers in both parties, as well as Trump, see room for a possible compromise. Senate Minority Leader Chuck Schumer (D-N.Y.), however, [has said](#) any bill must address climate change.
- Congress will have to start from scratch on a bill to reauthorize the Pesticide Registration Improvement Act, which allows the collection of industry fees for the EPA office that approves pesticides and disinfectants. The legislation was derailed last year when Sen. Tom Udall (D-N.M.) sought to block the EPA from rolling back various Obama administration farm worker protection rules, and House Republicans balked, and the pesticide fees were left out of the farm bill.
- Energy lobbyists are hoping the Senate Energy and Natural Resources Committee will at least pass pieces of a long-stalled comprehensive energy bill with bipartisan backing, including those addressing smart-grid technologies and upgrading the grid, as well as those encouraging electric and other advanced vehicles and energy storage.
- The most recent reauthorization of the surface transportation act, in December 2015, authorized spending on federal highway and public transportation programs through September 2020. A new reauthorization could be an opening for Democrats to push

climate-resilient infrastructure and low-carbon transportation options.

- Senate Environment and Public Works Committee Chairman John Barrasso (R-Wyo.) also is readying bills to encourage advanced nuclear technologies and more incentives for carbon capture and storage—legislation that has Democratic support.

Familiar Senate Faces

While a new cast of Democrats will hold committee gavels in the House in the 116th Congress, the Republican-controlled Senate will return with familiar faces atop Senate environment and energy panels, where most climate, energy, and environment-related legislation emerges.

Republicans' 53-47 control of the chamber gives them some wiggle room to confirm the next EPA administrator—possibly Andrew Wheeler, tapped as acting EPA head in July after embattled Scott Pruitt resigned. Trump has not officially nominated Wheeler for Senate confirmation, but told reporters in November that he plans to.

Sen. Lisa Murkowski (R-Alaska) will head the Senate Energy and Natural Resources Committee, while Wyoming's Barrasso will head the environment panel. Murkowski said she wants to hold hearings on climate change.

While Delaware's Tom Carper will stay on Barrasso's committee as the top Democrat in 2019, the ranking Democrat on the energy committee will be Sen. Joe Manchin (D-W.Va.), a choice that has raised concerns for climate advocates who see the coal-state senator as a threat to reviving far-reaching climate legislation if Democrats can oust Trump in 2020.

Manchin told Bloomberg Environment that while he's a pragmatist on energy issues he is concerned about climate change and wants to "find that moderate middle place" in any legislative solution.

Climate Divide

House Democrats remain divided on climate-change legislation. Battle lines are being drawn in the House between old-guard Democrats and new arrivals.

"It's a priority of Democrats. We believe climate change is real, we believe it's an existential threat to the planet, and we believe we need to take definitive action," DeFazio told Bloomberg Environment.

Incoming Rep. Alexandria Ocasio-Cortez (D-N.Y.) and her allies are pushing a "Green New Deal" creating a select climate panel to draw up a plan over the next year putting the U.S. on the path to 100 percent renewable energy. Backed by dozens of House Democrats, it also calls for building a national smart grid and rapidly decarbonizing U.S. manufacturing, agriculture, and transportation sectors.

Ocasio-Cortez says she's well aware such legislation isn't politically viable in the near term. But she said Democrats should be working now to have a broad climate bill, one that can energize congressional support, and have it ready if Democrats can return to power in the White House and Senate.

Rep. Nancy Pelosi (D-Calif.), seeking to return as House speaker, has vowed to resurrect a select panel she launched in 2007, later scrapped by a Republican majority in 2011, though it lacked legislative authority.

'Take a Shot'

But Carper said nothing prevents Democrats from crafting compromises with Republicans to cut carbon emissions at the margins, while also laying the groundwork for comprehensive legislation.

"You know, people used to ask [hockey legend] Wayne Gretzky, 'Why do you take so many shots on goal?' And he says, 'Because I missed every shot I never took,'" Carper told Bloomberg Environment. "I think we take a shot and it makes sense to build support around a comprehensive approach."

"It also makes sense, if you have some low-lying fruit, such as removing emissions from mobile sources, to seize the day," Carper said. "You can do both."

The first bipartisan climate legislation in a decade—a carbon fee bill ([H.R. 7173](#))—was introduced in November by Rep. Ted Deutch (D-Fla.) and Republican Reps. Brian Fitzpatrick (Pa.), Francis Rooney (Fla.), and David Trott (Mich.), who is retiring.

But even if it is reintroduced and passes the House, it faces extremely long odds in the Senate.

—With assistance from Pat Rizzuto, Tiffany Stecker, Rebecca Kern, and David Schultz.

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Solar, Wind Could Hit 10 Percent of U.S. Electricity

- *2019 is expected to be a year of steady growth for solar and wind power in the U.S.*
- *Midterm elections could bear fruit for wind and solar industries as states explore new clean energy policies*

December 26, 2018

Bobby Magill at bmagill@bloombergenvironment.com

Renewable energy industries have ample reason for optimism in 2019: The year is expected to be one of steady growth as renewable power prices continue to decline and solar developers take advantage of investment tax credits poised to ratchet down during the next several years.

The industry is keeping an eye on whether wind and solar power will surpass 10 percent of total U.S. electricity generation, up from about 8 percent in 2017, John Rogers, a senior energy analyst for the Union of Concerned Scientists, told Bloomberg Environment.

"I think it's sort of helping people move past the notion of wind and solar as niche technologies," Rogers said. "Once you get into double digits, it becomes a lot harder to shrug off."

Coming Up for Solar

Policy and market factors together point to 2019 as a year that will build on the growth of the last several, with major technological breakthroughs coming later, Jao van de Lagemaat, director of the Chemistry & Nanoscience Center at the National Renewable Energy Laboratory, told Bloomberg Environment.

"There's been typically 25 percent growth in [solar panel] installations," he said. "I don't see any reason for that to abate right now."

The U.S. Energy Information Administration projects that total U.S. solar power generating

capacity, including large- and small-scale solar, will grow from about 43 gigawatts in 2017 to 52 gigawatts in 2018 and 60 gigawatts in 2019, according to the agency's November [Short-Term Energy Outlook](#).

Longer term, the industry is expecting to install more than 61 gigawatts of solar capacity through 2023, Abigail Ross Hopper, president and chief executive officer of the Solar Energy Industries Association, told Bloomberg Environment.

"That's going to be huge growth," Hopper said. The investment tax credit "will decline, so companies will be racing furiously to meet the deadline."

The federal solar investment tax credit steps down from 30 percent in 2019 to 10 percent in 2022.

"The solar industry is readying for another wave of project development as the ITC phases down," Hugh Bromley, a Bloomberg NEF solar energy analyst, told Bloomberg Environment. "Developers have over the past two years been steadily replenishing their depleted pipelines with projects that are starting to secure finance. This should lead to a noticeable increase in construction activity next year."

The industry also is looking out for the U.S. to install its 2 millionth rooftop solar panel system, according to Rogers.

"There were 1.6 million through 2017 and we put in 300,000 last year alone," he said.

What's Up With Wind

Wind power is on a similar trajectory for 2019 as a federal wind energy production tax credit extended in 2015 is phased out.

"There is a mostly consensus view in the wind industry in the United States that toward the end of the phaseout period [2019-2023], wind will be cost-competitive against other fuel sources, so it will no longer need the tax credit subsidies," Mackinnon Lawrence, director of energy at Navigant Research in Washington, told Bloomberg Environment.

Wind cost declines "suggest wind is already cost-competitive against other power plants in areas with good wind resources," Lawrence said.

The industry is hoping that wind farms nationwide will reach 100 gigawatts of installed generating capacity in 2019, Celeste Wanner, a senior analyst for the American Wind Energy Association, told Bloomberg Environment.

The Energy Information Administration projects that wind capacity will grow from 87.5 gigawatts in 2017 to nearly 95.5 gigawatts in 2018 and 107 gigawatts in 2019. Rogers said 100 gigawatts of wind capacity can provide electricity for about 30 million homes.

The new year also will likely see installations of some of the first 4-megawatt wind turbines in the U.S., each able to provide power to 1,400 homes, according to Wanner.

The average wind turbine installed in 2017 was 2.3 megawatts with the ability to power 750 homes, she said.

'Pent-Up Interest'

Renewables industries are keeping a close eye on state-level clean energy policies, which are expected to get a boost in states where renewables-friendly governors were elected in 2018.

Maine and New Mexico stand out because both states have renewable energy resources and they elected Democratic governors in 2018 after eight years of little renewables growth under Republican governors, Rogers said.

"There's a lot of pent-up interest in clean energy progress there," he said.

Maine Gov.-elect Janet Mills (D) has [pledged](#) to promote offshore wind development, something outgoing Gov. Paul LePage (R) tried to block. She also said she supports decentralized electric power production and the "solarization" of the Maine power grid.

New Mexico Gov.-elect Michelle Lujan Grisham (D) has pledged support for wind and solar development and campaigned on support for electric vehicles and a call for the state to obtain 80 percent of its electricity from renewables by 2040.

The solar industry is energized by support in states such as South Carolina and Massachusetts, whose Republican governors won re-election and "have embraced solar policy as economic engines," Hopper said.

"I'm optimistic that those markets will continue to grow," she said.

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Airline Carbon Emissions Plan Enters Make-or-Break Phase

- *International Civil Aviation Organization members at odds over offsets*
- *Airline industry likely won't meet 2020 goal for carbon-neutral growth, one official says*

December 24, 2018

James Munson in Toronto at correspondents@bloomberglaw.com

The new year will be a make-or-break one for a United Nations-backed plan to set carbon emissions standards for the world's airlines.

The International Civil Aviation Organization, charged with coming up with a plan because the international Paris Agreement on climate change doesn't address the aviation sector, hasn't been able to agree for two years on which carbon offsets will be allowed under its climate change plan, known by its acronym CORSIA, despite reporting rules kicking in on Jan. 1, 2019, and an aspirational goal for carbon-neutral growth set in 2020.

Aviation emissions, which account for 2 percent of global carbon emissions, are forecast to increase in coming decades if nothing is done, the U.N. says. International aviation, which the CORSIA program attempts to regulate, accounts for 1.3 percent of emissions.

Members at Odds

Members of the ICAO—loosely aligned as developed economies and the five major emerging economies of Brazil, Russia, India, China, and South Africa (BRICS)—remain at odds over offsets, which airlines would purchase to make up for the emissions they produce, say environmental groups participating in ICAO meetings.

"The scheme is rapidly falling apart" because of disagreements over how emissions-reduction

credits are purchased, said Andrew Murphy, manager of aviation at European advocacy group Transport & Environment.

"The environmental question for CORSIA is whether CORSIA will continue its downward descent that it's been on since the 2016 ICAO general assembly," said Andrew Murphy, manager of aviation at European advocacy group Transport & Environment.

Most of the technical work on offset standards has already been done and observers are waiting for a political decision from the ICAO's council, a core group of member states, to agree, Daniel Rutherford, program director for the International Council for Clean Transportation, said.

The council is meeting at the body's headquarters in Montreal in January, April, and October.

A triennial meeting of the ICAO's entire membership, the general assembly, will take place in the Canadian city in the fall. The CORSIA program was launched at the last general assembly in 2016.

The ICAO did not respond to a list of questions on CORSIA.

China is no longer participating in a voluntary pilot of CORSIA that begins in 2021, which further damaged the program's attempts at takeoff, Rutherford said. The program will become mandatory in 2027.

Supersonics Pose Challenge

In February, the ICAO's committee on aviation environmental protection, which develops technical standards, will meet to create a three-year plan. This year's is expected to include a schedule for looking at the return of civilian supersonic aircraft, Rutherford said.

A handful of companies—Aerion Corp., Spike Aerospace Inc., and Boom Technology Inc.—want to bring supersonic jets back to the civil marketplace, and the committee will task itself with how to consider the technology's emissions and sound issues, Rutherford said.

A report by the international council, a technical observer at the ICAO committee, published in January found the jets burn five to seven times as much fuel per passenger as subsonic jets.

The airline industry won't likely meet the 2020 goal for carbon neutral growth, said Michael Gill,

executive director of the Air Transport Action Group, which represents airlines, aerospace manufacturers, and airports. The group is encouraging as many countries to join the voluntary pilot that starts in 2021, Gill said.

The ICAO has long envisioned "sustainable fuels" as a means to lower airlines' emissions, but environmental groups such as Transport and Environment have become increasingly critical of the plan as they argue standards are being watered down.

The aerospace industry will finalize its positions ahead of the ICAO general assembly at an Air Transport Action meeting in Montreal in May, Gill said.

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International

Central America Grapples With Drought, Climate Impacts

- *Climate policy now seen as major consideration in national elections*
- *Drought, other climate impacts in region could worsen*

December 31, 2018

Lucien O. Chauvin in Lima at correspondents@bloomberglaw.com

Drought related to climate change is affecting economic and social sectors throughout Central America, potentially playing an important role in national elections in half of the region's six countries in 2019.

The region sustained significant food crop losses in 2018, and conditions could worsen in 2019 if an El Niño weather event materializes. The World Meteorological Organization is reporting a 75 percent to 80 percent chance of a new El Niño, which is caused by warm water currents moving into Latin America's Pacific Coast, disrupting weather patterns worldwide.

The drought in 2018 caused the loss of nearly 700,000 acres of food crops, maize, and beans in three countries—El Salvador, Guatemala, and Honduras. The Salvadoran government in July reported the loss of 1.5 million 144-pound bags of coffee. Coffee accounts for around 2 percent of export earnings, but is a large-scale employer.

Environmental and international agencies operating in the region said Central America is already suffering the effects of climate change and conditions could worsen in 2019, putting even more pressures on governments and industry, the U.N. Intergovernmental Panel on Climate Change said.

"Science is telling us that climate patterns ... are changing. We are seeing a change in the volume, location, and timing of precipitations," said Andreas Lehnhoff, director of the World Wildlife Fund for Nature in Central America.

Permanent Drought Conditions

Drought in the region is likely to become a permanent state of being because of climate change, requiring countries to work on mitigation and adaptation, according to Oscar Rojas, from the U.N. Food and Agriculture Organization in Central America.

"The transformation underway is facilitating faster urbanization that is putting more pressures on cities but also adding to problems in rural areas with falling agriculture production and faster deforestation," said Anastacio Rodriguez, who coordinates sociopolitical programs for the Friedrich Ebert Foundation.

In Nicaragua, the 48-member organization Nicaraguan Alliance against Climate Change is lobbying the country's Legislature to approve in 2019 a Climate Change Framework Law. The law was submitted in early 2018.

Guatemala, the largest country in the region, lost nearly 3.3 million acres of forest coverage between 2001 and 2017, according to Global Forest Watch. Forests cover approximately 10 million acres there.

Urbanization is making it more difficult for governments to guarantee basic environmental services, such as potable water and garbage collection, while extreme weather was worsening food security and creating unhealthy conditions, Rodriguez said.

This will be further exacerbated by a lack of territorial planning for mines and hydroelectric plants, Central America's largest source of private investment, which could create conflicts over resources.

Environmental problems will be gaining ground as important political issues as El Salvador (February), Panama (May), and Guatemala (June) gear up for elections in 2019, according to Rodriguez.

"Electricity generation, mining, and water resources are electoral issues. They may be discussed as economic issues or basic services, but they are environmental issues and will require political decisions in the near future," he said.

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More Scrutiny in Chemical Regulation in European Union

- *Attention will turn to ongoing compliance in 2019*
- *Companies must update REACH dossiers, adapt to new nanomaterials requirements*

December 27, 2018

Stephen Gardner in Brussels at correspondents@bloomberglaw.com

Chemicals companies will face greater scrutiny in 2019 of the information they provide the European Chemicals Agency, under the European Union's overarching chemicals law.

The European Commission, the EU's executive arm, is expected to issue a draft law early in the year that would require companies to update the registration dossiers under REACH (Regulation No. 1907/2006 on the registration, evaluation, and authorization of chemicals), which they have already submitted to ECHA.

REACH includes a general obligation for companies to update their registration dossiers as new substance information becomes available. To trade legally on the EU market, companies must register the chemicals they produce or import in volumes above 1 metric ton annually.

But implementing REACH has been dogged by concerns that the information provided in registration dossiers is insufficient for safe handling of substances, and by allegations that companies are failing to keep their dossiers up to date.

In 2019, ECHA will "move strongly and forcefully forward" with recommendations in the commission's review, especially on compliance with REACH's chemical safety information provisions, Bjorn Hansen, ECHA executive director, told Bloomberg Environment. "We want the organization as a whole to focus more on compliance."

Checks and Evaluation

Although the last REACH registration deadline passed in 2018 and all in-scope chemicals traded in the EU should now be registered, companies shouldn't expect less regulatory scrutiny or fewer requests for new or updated information about their substances.

"The 'R' in REACH will still be active: Updates are needed to adjust dossiers according to current knowledge and guidelines," said Volker Soballa, head of product stewardship at chemical company Evonik Industries AG.

Companies also will have to come to grips with new provisions on nanomaterials in 2019.

Substance evaluation under REACH is the process in which compounds with suspected hazards are assessed, often involving binding requests to registrants to provide new data. If substances are shown to be hazardous, they could be nominated for a range of regulatory measures, potentially including a ban within the EU.

31 on the Menu

During 2019, evaluations either will continue or start for 31 substances with suspected hazards. Evaluations are shared among authorities in EU countries.

On nanomaterials, the commission in December adopted amendments to REACH that set

out more clearly the specific data that should be provided in registration dossiers for the nanoforms of substances. Previously, REACH didn't distinguish between the nanoforms and standard forms of substances.

The new nanomaterial requirements will apply from Jan. 1, 2020, leaving companies all of 2019 to prepare.

There could be problems implementing the nanomaterials requirement related to the analytical methods used to identify them and lack of specialist laboratories, Erwin Annys, director of REACH for the European Chemical Industry Council, told Bloomberg Environment.

'Constructive Exchange'

For some companies, ongoing REACH compliance means managing hundreds of registration dossiers.

At BASF SE that number is about 1,800 and each dossier is regarded as a living document that requires constant review, according to BASF spokesman Florian Tholey.

Germany's Lanxess has filed about 1,000 registration dossiers and REACH "is still a challenge for us," spokeswoman Daniela Eltrop told Bloomberg Environment.

Updating should be based on "constructive exchange and specific dossier compliance checks," as "generalized criticism" from authorities about the quality of REACH dossiers is counterproductive, Eltrop said.

"A dialogue between industry and ECHA is needed to reach a common understanding on the expected level of quality in dossiers," said Eveline Kooiman, spokeswoman for Dow Europe.

Exxon Mobil Corp. in 2019 "will continue to fully comply with the requirements of the REACH regulation," spokeswoman Ann Wurman told Bloomberg Environment.

Smoother Implementation

Following the 2018 registration deadline—which marked 10 years of REACH–ECHA will "identify the lessons learned" so it can make "quicker decisions" with authorization, restrictions, and enforcement, ECHA's Hansen said.

Under REACH, substances can be banned from use in the EU, though companies can apply for specific continued-use authorizations. Restrictions are specific limitations on applications of substances, for example banning them from certain products.

ECHA and EU countries will look at "key decision points" in these processes to see how they could be streamlined, Hansen said.

For example, when applying for an authorization to use an otherwise banned substance, REACH requires companies to analyze possible substitutes to see if there are other alternatives. It could be clarified how extensive this evaluation of substitutes needs to be, Hansen said.

Pushing to switch some substances because of their hazards "may lead to an increase of regrettable substitutions," meaning substituting hazardous substances with equally or more hazardous alternatives, Dow Europe's Kooiman said.

In 2019, ECHA also will seek to identify process improvements that would lead to a reduction in the number of court cases challenging its decisions, Hansen said.

Ready for Brexit

During 2019, REACH must adjust to life without one of the EU's main chemical industry powers: the U.K., which will leave the bloc March 29.

Depending on the terms of Brexit, the registrations that U.K. companies file may no longer be valid, and companies would have to reregister through intermediaries or agents based in the remaining EU countries.

The U.K. authorities also will no longer take part in REACH processes, such as evaluating suspected hazardous substances or assessing possible substance restrictions. British staff working for ECHA also could find that their rights to work in the EU are curtailed.

“The U.K. is a very active member state and we will miss their capacity,” Hansen said.

ECHA has been “preparing intensely” for Brexit, however, and implementing REACH for companies based in EU countries other than the U.K. will continue uninterrupted, he said.

Brexit could leave companies in Europe facing two parallel regimes—REACH and a similar but separate system in the U.K.

There should be “continued alignment” between the systems, for example to “avoid duplication of efforts on substance registrations,” BASF’s Tholey said.

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Year of Talks, Transition Ahead for EU Environment Policy

- *Brexit, elections to replace top EU officials make 2019 a transition year*
- *EU to complete laws on renewables, energy efficiency, transportation, plastics*

December 31, 2018

Stephen Gardner in Brussels at correspondents@bloomberglaw.com

The European Union will take stock of its environmental policies in 2019, particularly in light of changes to its composition and political makeup.

Among those changes will be the March 29 departure of the U.K., known as Brexit; European Parliament elections in May; and a changing of the guard at the European Commission, the bloc's executive arm, which will see its leadership replaced in the fall.

The commission's job is to identify the EU's priorities and propose legislation. The winding-down of the current set of EU commissioners means new legislative proposals will be few and far between in 2019, with the focus instead on finishing work already underway.

For environmental policy, that means signing off on a number of laws designed to reduce the EU's greenhouse gas emissions so it can meet a pledge made under the United Nations' Paris Agreement to cut its emissions by 40 percent by 2030 from 1990 levels.

The EU will also start to consider in depth how to slash its greenhouse gas emissions to net zero by 2050. The commission released a strategy Nov. 28 setting out how to meet this goal and called for the governments of EU countries to start thinking seriously about it.

A "transition year" is ahead, said Jonathan Gaventa, director of E3G, a climate and energy think tank.

"In some ways, that makes it even more important than business as usual," because the broad discussion in 2019 will establish the framework for EU environment policy into the mid-2020s, Gaventa said.

Trade Fight Looms

Among the laws that have already been agreed to and will be formally concluded in 2019, or that remain to be finalized in negotiations, are those requiring that 32 percent of the EU's energy come from renewables by 2030 and securing a 32.5 percent energy savings compared to business as usual projections.

Also on the list are laws requiring car and truck makers to cut the average carbon dioxide emissions of their vehicles.

Another law that would ban certain single-use plastic items, including drinking straws and plastic knives and forks, is expected to be completed in 2019, and the European Chemicals Agency will finalize a proposal that would make it illegal to intentionally add microplastic particles to products such as cosmetics, paints and detergents.

Of the few new proposals expected, one has the potential to trigger a big trade fight.

The pending law setting the 2030 renewable energy goal requires the commission to propose by Feb. 1 a benchmark for judging the sustainability of biofuel crops that cause environmentally-damaging indirect land-use

change—for example, tropical deforestation to make way for plantations.

For crops that fall on the wrong side of the benchmark, their use in biofuels would be capped and ultimately phased out by 2030.

Biofuel feedstocks that might be judged unsustainable include palm oil and soybean oil, said Carlos Calvo Ambel, an analyst at Transport & Environment, a European umbrella group for non-governmental organizations in the transportation and environment fields.

“This is going to be a massive battle,” he said, because about half of the palm oil imported into the EU from countries including Indonesia and Malaysia goes into biodiesel. Soybean imports from the U.S. might also be affected.

Biodiesel producers believe the commission should take a “balanced approach,” rather than introduce criteria that would make it hard to use palm oil, said Raffaello Garofalo, secretary general of the European Biodiesel Board, which represents companies including Bunge Deutschland GmbH, Cargill GmbH, and Neste Oil Corp.

“The best way to improve sustainability is to improve the environmental profile of what we are doing now,” Garofalo said.

The effect of Brexit on environmental policies is uncertain, but the U.K. Parliament should be voting sometime in January on a draft agreement with the EU intended to provide clarity on those issues.

Big-Picture Discussions

The EU’s broader discussion on where it wants to be in environment and climate terms by 2050 will encompass energy efficiency, including zero-energy buildings, decarbonization of electricity, electrification of transportation, reinforcement of carbon sinks through, for

example, establishing new forests, resource-use efficiency, and a number of other areas outlined in the commission’s Nov. 28 strategy document.

These are among the issues EU leaders will discuss at a summit at Sibiu, Romania, May 9—the first EU leaders’ summit after the U.K.’s departure from the bloc. In the first half of 2019, Romania will hold the rotating presidency of the Council of the EU, the EU body that represents the governments of member countries.

Top-level discussions on the EU’s overall climate goal for 2050 could be “a two-year conversation,” but the Sibiu meeting could be a “big milestone,” said Eliot Whittington, policy director for the Prince of Wales’s Corporate Leaders Group, which promotes the transition to a low or zero-carbon economy and represents companies including 3M Co., The Coca-Cola Co., EDF SA, Tesco Plc, and Unilever Plc.

EU leaders might also consider what a 2050 net-zero emissions goal would mean for the EU’s 2030 target of a 40 percent reduction, Gaventa said. Some countries, including France and the Netherlands, are pushing for the 2030 goal to be raised to up to a 55 percent reduction, implying a reopening of current laws, he said.

The “transition to a sustainable, less-polluting economy will be the main challenge for the upcoming years,” and the EU would have to make an economic success of it to convince the rest of the world to follow, said Adina-Ioana Valean, a Romanian center-right lawmaker who chairs the European Parliament’s environment committee.

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Arctic to See More Ship Traffic, Oil Exploration

- *Countries eye fossil fuel deposits in Arctic*
- *Canada could lift offshore drilling ban*

December 20, 2018

James Munson in Ottawa at correspondents@bloomberglaw.com

Relaxed shipping rules from Russia, Chinese investment in natural gas, and U.S. steps toward oil and gas exploration will make for increased activity in the Arctic region in 2019.

Russia's new shipping regulations, due to take effect in May, will permit vessels with weaker ice protections to reach the country's growing constellation of energy and mining projects. Some ships currently allowed in Arctic waters only in summer will be allowed to travel there year-round, and rules governing when icebreakers must accompany ships will be changed.

Yamal, a sprawling facility on Russia's Arctic coast that produces 16.5 million metric ton of liquefied natural gas annually and that currently serves as the focal point of Russia's vision to turn the Arctic into a bustling economic zone, reached full production ahead of schedule in late 2018, creating the need for more ships, said Malte Humpert, founder of the Arctic Institute, a Washington-based research group.

Meanwhile, China, which has a 20 percent stake in Yamal through China National Petroleum Corp., could further extend its holdings in the polar region by buying a share of the Arctic LNG project, which sits across a river delta from Yamal, Humpert said.

However, the Chinese face an uphill battle against other prospective investors like Saudi Arabia after having driven a hard bargain for the Yamal stake, he said. China declared itself a "near-Arctic state" that seeks to develop a "Polar Silk Road" over Eurasia this past January.

Laying Groundwork for Exploration

Across the Arctic Ocean, Alaska's oil and gas sector will also be busy.

The Trump administration's efforts to open up more of the state to exploration will inch through the regulatory process in 2019, but environmental groups are likely to start legal challenges if the Interior Department gets as far as publishing a draft environmental impact statement in some of the areas eyed for exploration, Kara Moriarty, president and CEO of the Alaska Oil and Gas Association, said.

Interior officials are preparing a draft statement for a lease sale in the coming year for federal waters in the Beaufort Sea, as well as for 1.5 million acres of the Arctic National Wildlife Refuge in an area where caribou are known to calve.

The department is also replacing a land management plan for the National Petroleum Reserve that made 11 million of the reserve's 22.8 million acres off limits to development. The existing plan prevents the extraction of 350 million barrels of oil and 45 trillion cubic feet of natural gas, the department says.

Officials didn't respond to requests for a timeline on those regulatory processes, but Moriarty said a lease sale in the refuge area, known as the 1002 Area, could come in 2019 or 2020.

Several court challenges to the U.S. government's plans in Alaska will conclude in 2019, beginning

with expected decisions in a lawsuit that argues the Trump administration didn't have the authority to overturn an Obama-era ban on Arctic offshore drilling and in a suit that argues lease sales in 2016 and 2017 in Alaska didn't take into account their impact on climate change, said Kristen Monsell, oceans program litigation director at the Center for Biological Diversity.

Later in the year, the center is expecting Judge Sharon L. Gleason of the U.S. District Court of Alaska—who is overseeing the cases—to deliver a judgment in its challenge to the administration's decision not to list the Pacific walrus as an endangered species, a move that overturned a previous decision, Monsell said.

Canada Ban May Be Lifted

Any increased interest in Beaufort Sea oil and gas could generate activity across the border in Canadian waters, said Paul Barnes, manager for the Atlantic and Arctic for the Canadian Association of Petroleum Producers, the country's largest oil and gas group.

Canada has banned offshore oil and gas activity in the Arctic since 2015. Legislation expected this spring would enable the federal government to return security deposits petroleum companies made on leases before the ban was announced.

The final amount could be in the tens of millions for some companies, depending on how much they spent, Barnes said.

There are 13 active exploration licenses in the Beaufort Sea, according to the Canada's National Energy Board.

Ottawa launched negotiations in October with the Northwest Territories, Yukon, and the Inuvialuit Regional Corp. to develop a new regulatory plan for oil and gas in the Beaufort Sea, an agreement that could allow for the moratorium to be lifted.

Further east, increased cargo traffic is expected in 2019 from the Mary River iron ore mine on Baffin

Island, which the federal government is allowing to increase annual production from 4.2 million metric tons to 6 million metric tons temporarily until December 2019.

Baffinland Iron Mines Corp., the majority of which is owned by ArcelorMittal, has increasingly sent ships through the Northwest and Northeast Passages, said Adam Lajeunesse, an Arctic specialist at St. Francis Xavier University.

North of that mine, Canada is expected to announce the creation of a national marine conservation area in Lancaster Sound in Nunavut, nicknamed the Serengeti of the Arctic for its abundant wildlife, said Louie Porta, vice-president of operations and projects at advocacy group Oceans North. At 42,000 square miles, the area will be the largest protected zone in Canada and the culmination of over 40 years in conservation work, Porta said.

Canada will also be under pressure at an International Maritime Organization environmental meeting in February to support a heavy fuel oil ban in the Arctic, said Andrew Dumbrille, senior specialist on sustainable shipping at the World Wildlife Fund Canada. The organization signaled its intention to bring one into force in 2021, he said.

Ottawa may have more room to support a ban after Nunavut Tunngavik Inc., an Inuit political and economic body, came out in support of a ban in October, Dumbrille said. Heavy fuel oil is used in the Arctic because it handles cold temperatures better than other fuels, but it is difficult to clean up in a spill and its soot can accelerate global warming.

A Freezing Experiment

A major scientific milestone will take place back in Eurasian waters in late 2019 when the German research icebreaker the Polarstern, owned by Alfred Wegener Institute, will be "frozen in" the Arctic Ocean to conduct experiments on the atmosphere, the polar landscape, and ecosystem, Julienne Stroeve, senior research scientist with the U.S. National Snow & Ice Data Center, said.

A research vessel has only been frozen in the Arctic ice over the winter once before—the 1997 SHEBA study—and the upcoming one will be the first one in the Eurasian Arctic, Stroeve said.

Scientists will also begin publishing papers based on data from ICESat-2, a NASA satellite launched in August, in 2019, she said. Ice thickness data from the satellite is expected to be a big improvement over current information.

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Treaty Seen as Hope to Protect Oceans (Corrected)

December 21, 2018

Murray Griffin in Melbourne at correspondents@bloomberglaw.com

A treaty that some have dubbed the Paris Agreement of the high seas will be the centerpiece of efforts to protect the world's oceans.

"We need to reverse the cycle of decline that we are caught up in," said United Nations oceans envoy Peter Thomson, whose home country, the island nation of Fiji, in 2017 put the oceans front and center during its [presidency](#) of U.N. climate change talks. "Everybody has to get engaged in this," he told Bloomberg Environment. "There is no excuse for not being engaged."

After years of groundwork and an initial meeting last September, countries will start work this March on the first draft of a treaty to protect and use the biodiversity of the open ocean.

Protection of Marine Biodiversity

The new treaty to protect marine biodiversity beyond national jurisdiction will operate under the U.N. Convention on the Law of the Sea, which is more than 30 years old and contains limited provisions on conservation.

Most of the world's nations have signed onto the convention. But the U.S. has not ratified it in the face of opposition from conservative Republicans, who contend it doesn't provide any benefits that the U.S. already has available while creating unnecessary burdens and risks.

Vast expanses of sea that are outside the exclusive economic zones controlled by individual nations make up 40 percent of the planet's surface, yet the huge diversity of marine life they contain is poorly and patchily protected.

By previous agreement, the new treaty to protect those regions will have four main components.

Two of them, "marine protected areas" and "environmental impact assessments," deal directly with sustainability.

The other two, "marine genetic resources" and "capacity-building and the transfer of marine technology," will focus on ensuring that the bounty of the oceans is fairly shared.

It's a combination of blue economy and blue ecology concerns designed to keep all countries sufficiently engaged to complete negotiations and report back to the U.N. General Assembly in 2020.

The treaty can deliver "a paradigm shift in how we look at ocean use," Jessica Battle, senior global ocean governance and policy expert with the World Wildlife Fund, said.

"There have been people saying that this treaty is the Paris [climate change] agreement for the ocean," she told Bloomberg Environment.

Challenges Ahead

But there are "definitely a lot of challenges" to overcome, said Alice Revell, a senior New Zealand diplomat who leads the treaty working group that will draft rules for creating marine protected areas and other special open-ocean zones.

"You can see by the fact that there are very few marine protected areas on the high seas at the moment," she told Bloomberg Environment.

Revell remains hopeful. "When states are looking with a longer-term perspective it's more feasible to reach agreement," she said.

The treaty could also prove influential in building ocean resilience to climate change and fighting marine plastics, even though these won't be a direct focus.

The environmental impact assessment provisions could result in climate change impacts such as ocean acidification being taken into account as part of the "cumulative pressures" on marine areas, Revell said.

Galvanizing Action

WWF's Battle said the treaty could equip states to more effectively press other countries in the same marine bioregion "to do something about plastics because it is affecting the biodiversity in that region."

No one is pretending that the marine biodiversity treaty is a cure-all, despite its importance. But, just as with climate change, there are signs that countries, regions, companies, and citizens have been galvanized into action on ocean protection.

[Interpol](#) is showing growing interest in illegal fishing, not just because of its risks to resource conservation and food security, but also because it is "intrinsically linked to other serious transnational crimes such as corruption, money laundering, fraud, human and drugs trafficking."

TPP Provision Banning Fishing Subsidies

The trade treaty that U.S. President Donald Trump walked away from—the Trans-Pacific Partnership—will enter into force in early 2019 with a breakthrough provision requiring signatories to ban subsidies that harm overfished fish stocks.

Having this enforceable subsidies ban in the TPP is important now and would become even more so if the top-three high seas fishing [nations](#) of China, Taiwan, and South Korea applied to join it.

Meanwhile, Trump's U.S.-Mexico-Canada Agreement on trade includes in the main text a new reference to tackling marine litter, as well as adopting a TPP-style ban on subsidized overfishing.

Driven by marine pollution concerns, the European Union has introduced a landmark circular economy [strategy](#) on plastics and has agreed to ban a list of single-use plastic items, while the U.N. Environment Program is investigating [strategies](#) to reduce marine plastic.

National, Corporate Initiatives

Standout performers at the national level include Indonesia, a developing country with more than 260 million citizens and 17,000 islands.

It's building on its no-nonsense [approach](#) to illegal fishing—removing the crews and setting fire to their boats—with a new [commitment](#) to reduce marine plastic pollution by 70 percent by 2025.

Actions at the corporate level are varied. They include a recent \$100 million [commitment](#) by PepsiCo, Procter & Gamble, Dow, Danone, Unilever, and the Coca-Cola Co.—all industrial-scale plastic packaging users—to help fund efforts to reduce ocean plastic in Asia, through an [initiative](#) managed by Circulate Capital.

At a more fundamental level, more than 250 organizations representing 20 percent of plastic packaging produced globally in October 2018 made an aspirational commitment to eliminate plastic waste and pollution at source.

[Signatories](#) to the New Plastics Economy Global Commitment include Danone, H&M Group, L'Oreal, Mars Incorporated, PepsiCo, the Coca-Cola Co., and Unilever, as well as packaging company Amcor and plastics producer Novamont.

(Corrects spelling of L'Oreal in the final paragraph.)

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Brazil's New Leader Could Weaken Environmental Law

- *Bolsonaro could send Congress a bill to allow mining on Indian lands*
- *New president could reduce environment ministry staffing*

December 24, 2018

Michael Kepp in Brazil at correspondents@bloomberglaw.com

Jair Bolsonaro, who argues that eco-friendly policies hamstringing economic growth, could curtail environmental enforcement, propose bills to reduce environmental fines, and allow mining on Indian lands during his presidential term that starts Jan. 1, environmentalists said.

Bolsonaro, who has compared Indians on reservations to animals in zoos, has vowed to "not demarcate one centimeter more of land" for new indigenous reserves and to draft a law that would allow mining on existing reserves.

"Such a mining bill is high on Bolsonaro's agenda, but not as great a priority as two other environmentally regressive bills now in Congress, one to relax pesticide regulations and the other to reduce the rigor of environmental licensing," Carlos Bocuhy, president of the nonprofit Brazilian Environmental Protection Institute in Sao Paulo, told Bloomberg Environment.

"And the bill could face stiff opposition from the public, environmental, and human rights groups."

Such opposition caused the government to scrap a controversial plan to allow copper and gold mining activity in a vast, protected tract of Amazon land in 2017.

Mining, the groups say, has degraded huge stretches of Amazon indigenous reserves, and mining waste, made toxic by processing chemicals like cyanide, is stored in reservoirs that have ruptured, polluting rivers that run through Indian land.

'Fining Industry'

Bolsonaro has repeatedly called for reining in what he calls the environmental "fining industry," and could move to reduce fines and federal environmental enforcement by reducing the environmental ministry's budget or staffing.

Environmental advocates criticized Bolsonaro's choice of Ricardo Salles, who headed the Sao Paulo state environmental secretariat in 2016 and 2017, to head the national environment ministry.

"Salles promoted the dismantling of environmental governance when he headed the state environmental secretariat," according to a statement by the Climate Observatory, a network of 44 groups monitoring Brazilian climate policy.

"The choice of Salles as environment minister is in line with Bolsonaro's pledge to weaken environmental enforcement," said Adriana Ramos, public policy coordinator of the nonprofit Socio-Environmental Institute in Brasilia, told Bloomberg Environment.

Climate Challenges

Bolsonaro initially pledged to pull Brazil out of the Paris climate accord, but reversed that vow following objections from agribusiness, scientific, and green groups saying that doing so could hurt exports.

“Bolsonaro will face major international market repercussions if he does nothing to reverse a rising Amazon deforestation rate or decides to disregard Brazil’s Paris climate commitments,” Carlos Rittl, executive secretary of the Climate Observatory, told Bloomberg Environment. “He has much to lose and nothing to gain by ignoring these globally important issues.”

But Bolsonaro pushed the outgoing government to withdraw Brazil’s candidacy to host the United Nations climate conference in late 2019, saying the country’s sovereignty over the Amazon was at stake.

He cited a project, proposed in 2015 by Colombian President Juan Manuel Santos, to create an ecological corridor connecting the Andes and

the Atlantic coast, which he suggested might also compromise Brazil’s Paris accord commitments.

Bolsonaro’s pick for foreign minister, Ernesto Araujo, in a recent blog post called climate science “a globalist tactic to instill fear and gain more power.”

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Australia, New Zealand to Double Down on Climate Policy

- *Labor Party win could spur major overhaul of federal climate policy in Australia*
- *New Zealand aims to pass its proposed new Zero Carbon Act*

December 24, 2018

Murray Griffin in Melbourne at correspondents@bloomberglaw.com

Climate change, chemicals, waste, biodiversity, and the revamp of some environmental regulations will be dominant concerns in Australia next year.

How these issues play out will be determined largely by a federal election due by May.

The opposition Labor Party has a commanding lead in voter surveys and is committed to a major overhaul of federal climate policy.

It promises that by 2030, national greenhouse gas emissions will be 45 percent below 2005 levels, and half the country's electricity will be generated by renewables.

"It's a simple equation for Australia—more renewables equals more jobs," said Labor leader Bill Shorten.



Members of the Australian Youth Climate Coalition, one dressed as movie character Dory, walk past a poster of the Labor Party's Bill Shorten.

Photographer: Paul Crock/AFP/Getty Images

A Labor government also could start "cranking down" the greenhouse gas emissions limits imposed on large emitters through the existing federal safeguard mechanism, Tennant Reed, national policy adviser with the Australian Industry Group, told Bloomberg Environment.

Push for Climate Policy

Australian Conservation Foundation chief executive Kelly O'Shanassy said her organization will be pushing in 2019 for the adoption of a comprehensive and ambitious climate policy.

But the ruling Liberal-National Party Coalition has proposed no new climate policies and will continue work on a plan to underwrite new and expanded energy generation that offers support for coal-fired power, as well as other technologies.

The office of Environment Minister Melissa Price didn't respond to requests for comment on her party's 2019 priorities.

Overhaul of Chemical Regulation

For some time, the coalition has been trying to pass a bill to overhaul the nation's industrial chemicals assessment and approvals program, and will try to gain Senate support in the new year.

It is now aiming for passage of the legislation with a mid-2019 start date for the changes, a year later than originally planned.

But Senate wariness at aspects of the bill and the looming election could stymie that timetable.

A Labor election victory also could result in an overhaul of the legislation regulating agricultural and veterinary chemicals, as Labor has criticized the existing regime.

A Senate inquiry into the effectiveness of regulating those chemicals is due to report in February.

Work also is expected to wrap up on a long-running federal-led review of Australia's version of the U.S. Toxic Release Inventory, known as the National Pollutant Inventory.

In addition, a federal decision is expected on ratification of two important international chemical treaties: the Minamata Convention on Mercury, and an amendment to the Stockholm Convention on Persistent Organic Pollutants dealing with perfluorooctanesulfonic acid (PFOS).

Landfill Waste Disposal

A new levy on landfill disposal of waste will take effect in Queensland state July 1, 2019; Victoria state will ban the landfilling of electronic waste beginning July 1; and Western Australia will advance preparations for a container deposit program that will start in early 2020.

At the national level, work will proceed through various industry-guided forums to make progress on aspirational waste targets jointly set by federal, state, and territorial ministers.

The targets include a halving of food waste by 2030 and ensuring all packaging is designed to be reusable, recyclable, or compostable by 2025.

A review of Australia's product stewardship law also is likely to wrap up this year and a new national waste policy will be introduced.

At the state level, Victoria's EPA will be preparing for the mid-2020 start of its new environment law, which includes a new general duty to minimize health and environmental risks.

Queensland state will be introducing legislation empowering the chief health officer to order a business to notify the community of the health impacts of pollution they have caused.

New Zealand's Zero Carbon Act

New Zealand aims to pass its proposed new Zero Carbon Act by mid-2019, after consulting on draft proposals in 2018.

The bill would establish a 2050 target of net-zero emissions, although the final form of the target has yet to be decided and establish a Climate Change Commission.

The government also plans to introduce a bill in early 2019 to amend its Resource Management Act, which deals with land use and management of the natural environment, and will work toward the 2020 completion of a new policy statement and environmental standard for freshwater management.

In addition, it expects to introduce a ban on single-use plastic bags, issue a marine environment report in October, and finalize new guidelines on used tire stockpiles by midyear.

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African Nations Tackle Illegal Logging

- *Ecosystem degradation a major priority for Africa*
- *Sixth year of drought pushes desalination, water conservation to the fore in Middle East*

December 19, 2018

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African nations in 2019 will begin rehabilitating the first of about 500 million acres of degraded land they want to see restored by 2030.

Illegal logging, which costs the continent \$17 billion annually, as well as criminal trade in charcoal and poaching pose other significant biodiversity conservation challenges for Africa in the year ahead.

For the Middle East, a sixth year of drought, believed to be the worst in 900 years, will be spurring countries in the region to improve water conservation, increase desalination, and reconsider their agricultural priorities.

Reforestation

The African Union is expected to adopt the new Pan-African Action Agenda on Ecosystem Restoration for Increased Resilience in January, and nations are scheduled to implement the initiative's short-term targets over the next year.

Specific actions will include reforestation in Burundi and Rwanda, where more than 70 percent of total area has experienced severe degradation. Reforestation programs will take precedence in the Ethiopian highlands, especially in the northern part of the country, which has some of the most degraded areas in Africa.

Zambia also plans to establish reforestation actions. Its annual deforestation rate is between 200,000 acres and 700,000 acres of forest cover, largely due to the rise of urbanization, mining,

transportation, and agricultural irrigation sectors, according to the United Nations Food and Agriculture Organization. Similar projects will be undertaken in Equatorial Guinea, Eritrea, Kenya, Sierra Leone, Tanzania, and Uganda.

National leaders, businesses, and academics will meet to discuss ways to make Africa's economies more sustainable during the Third Ministerial Conference of the Partnership for Action on Green Economy in Cape Town, Jan. 10-11.

Lion, Leopard, Rhino

Africa will continue to feel pressure to preserve its iconic wildlife. South Africa is expected to review its policies on lion, elephant, leopard, and rhinoceros management, breeding, hunting, and trade.

A special panel under the direction of South Africa Environment Minister Nomvula Mokonyane will conduct public hearings, draft submissions, and consider scientific evidence to evaluate current wildlife hunting and preservation practices.

Namibia plans to enact its Protection Areas and Wildlife Management Bill, which in essence will repeal the existing [Nature Conservation Ordinance 4](#) of 1975. Namibian Environment Minister Pohamba Shifeta aims to reintroduce wildlife in areas where they formerly roamed.

Between 2019 and 2022, four countries—Cameroon, Central African Republic, the Republic of Congo, and the Democratic Republic of Congo—expect to initiate four projects to protect forests,

support biodiversity conservation, and combat illegal wildlife trafficking in the Congo Basin. The European Union in November announced a grant of 20 million euros (\$23 million) for the projects.

Scientists and natural resource managers also will gather for the Species on the Move 2019 conference July 22-26 in Limpopo, South Africa.

Great Green Wall

Work is also in progress in 21 countries toward building of Africa's Great Green Wall—a bulwark against encroaching desert—running about 5,000 miles from Senegal in the west to Djibouti in the east.

According to Boubacar Cisse, Africa coordinator at U.N. Convention to Combat Desertification, when finished, the wall will a 9.3 miles environmental ribbon to surround Sahara Desert with a wide belt of vegetation that will allow about 10 million smallholder farmers to practice climate resilient agricultural technologies. If all goes according to plan, in the year ahead, there are ambitions to restore about 25 million acres of degraded ecosystem across the Great Green Wall.

Taking into account that drought, deforestation, and overgrazing have degraded vast tracts of land in savanna grasslands and rangelands, countries within grassland ecosystems could look at establishing environment restoration strategies in areas where soils are exposed to erosion from wind and floods. Such projects could start in Burkina Faso, Botswana, Ethiopia, Eritrea, and South Africa.

UNESCO's BIOSphere and Heritage of Lake Chad project, launched in February, is expected to take off in earnest in 2019 with the aim of increasing water into the lake, restoring degraded ecosystems, and the rehabilitating wetlands and wildlife corridors. Reaching across Cameroon, Chad, Niger, and Nigeria, Lake Chad has shrunk 90 percent during the past 60 years due to overuse, extended drought, and climate change. The \$6.5 million BIOSphere project runs through 2021 is financed by the African Development Bank.

Energy Transition Underway

In West Africa, 15 countries that are members of Economic Community of West Africa—a regional economic group—have targets to shift to new energy systems, based mainly on renewables. The process will be geared toward rapid decarbonization of the energy sector to reduce the impact of climate change.

West African Power Pool will aim to increase renewable energy options to 52 percent of the region's installed power generation by 2030. The proposed renewable energy mix will be generated mainly to solar photovoltaic.

Also the year ahead, the Economic Community of West Africa countries will work together on plans to generate about 1.5 gigawatts of electricity from solar power, according to the International Renewable Energy Agency.

Desalination in the Middle East

Rapid population growth means that the Middle East's reliance on desalination will continue to increase, said Waleed K. E. J. Zubari, professor of water resources at the Arabian Gulf University in Bahrain. The region and desalination "will be friends for a long time to come," he said.

Saudi Arabia, which is the world's top producer of desalinated water, is planning nine new desalination plants on the Red Sea Coast by mid-2019. It is planning to add 1,000 new dams to the 500 in operation as part of an initiative to preserve and use surface water. Storage capacity is expected to increase to 4.5 billion cubic meters by 2030 from the current 2.5 billion. The kingdom also plans to spend about \$1.3 billion on new transmission lines, tanks, and pumping stations in six cities.

Israel, which recycles 95 percent of its water for industry and agriculture and whose drinking water is 80 percent desalinated, is planning to double its annual desalination to 1.2 billion cubic meters by 2030. Some of that will be routed north to

replenish the fast-shrinking Sea of Galilee, once the country's largest source of drinking water.



People gather near an island that has been exposed due to low water level in the Sea of Galilee in northern Israel.

Photographer: Ahmad Gharabli/AFP/Getty Images

But some are calling for more action. "The new desalination plants will take years to come online. We need more reservoirs. Because of the lack of water, farmers have had to abandon crops like avocados and bananas and grow less profitable produce instead," said Avshalom Vilan, secretary general of the Israel Farmers' Federation. "Israel supplies water to Jordan, but they don't have enough for the hundreds of thousands of refugees from Syria and Iraq."

Plans for a desalination plant in Aqaba at the head of a canal from the Red Sea to the Dead Sea are still on the drawing board, leaving Jordan's growing water crisis unsolved.

Meanwhile, the aquifer in Gaza, which is under an Israeli economic blockade, is so polluted that residents have almost no natural drinking water. Construction of a planned desalination plant and new water network is unlikely to begin in the coming year.

All Eyes on Renewables

Jordan produces about 10 percent of its electricity from renewables, up from zero in just five years, and aims to reach 20 percent by 2020, according to Hala Zwati, minister of energy and mineral resources.

The United Arab Emirates' plans for 1,000 megawatts annually of renewable-based mega-projects throughout the next few years to meet its energy targets will peg the nation as a hot spot for power sector development in the Gulf region.

Israel's upgrade of its power grid will allow solar-generated electricity from the southern Arava Desert to be distributed to the main population area in the center of the country.

Saudi Arabia in the coming year will be readying its \$16 billion National Renewable Energy Program, which aims to increase the renewable share of the kingdom's total energy resources to 3.45 gigawatts by 2020, equivalent to 4 percent of total production.

Pollution Plans Ahead

Tackling air pollution will be high on the Middle East's agenda.

The United Arab Emirates is aiming for 90 percent air purity by 2021, up from the current 77 percent, according to Aisha Al Abdooli, director of green development at the Ministry of Climate Change and Environment. The ministry is developing artificial intelligence-generated, real-time data and online systems to compare and enhance environmental performance, including a geospatial map of 7,000 industrial facilities in the country.

The UAE also will follow through on a new national policy to reduce carbon emissions from vehicles and to identify the standards and specifications for electric, hybrid, and hybrid electric vehicles.

Israel will phase out coal at its power stations by 2030 and won't renew licenses for 15,000 diesel-powered commercial vehicles that fail to meet emission standards, which should be off the road by the end of 2019. Now home to two low-emissions zones, in Haifa and Jerusalem, Israel will be looking at rolling out more of these clean air spots in the coming year.

Governments also will be reassessing the traditional approach to solid waste pollution,

replacing polluting landfills with recycling plants for urban, industrial and agricultural waste.

The UAE is building a \$220 million waste-to-energy plant in Sharjah due to come online by 2020 that will process more than 37 metric tons of municipal solid waste annually.

Israel will issue tenders next year for two waste-to-energy plants to handle 1,000 tons of municipal solid waste daily. "We hope to stop using landfills for most of the waste in Israel," said Guy Samet, senior deputy director-general for municipal affairs at the environmental protection ministry. A new law currently before Israel's Parliament will require contractors to pay for the proper disposal of building waste.

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Global Shipping Preps for Sulfur Limits in Fuel Oil

- *Ships must reduce sulfur oxides in fuel by Jan. 1, 2020*
- *Shipowners concerned about global availability of compliant fuel*

December 18, 2018

Ali Qassim in London at correspondents@bloomberglaw.com

A top priority for International ship owners and operators next year will be to prepare for transitioning to 2020 global sulfur limits in fuel oil.

Also high on the agenda will be how the shipping industry can reduce emissions of carbon dioxide, currently estimated at an annual 796 million metric tons, about 2.2 percent of the world's total, according to United Nations shipping agency, the International Maritime Organization (IMO).

Prepping for Sulfur Cap

By Jan. 1, 2020, ships have to reduce the amount of sulfur oxide in fuel oil from the current cap of 35,000 parts per million, or 3.5 percent, to no more than 5,000 parts per million or 0.50 percent.

At sufficient concentrations, sulfur can potentially cause respiratory diseases and harms crops, forests, and aquatic species.

Ahead of the deadline, "some important issues remain unresolved," said Helio Vicente, senior adviser for policy and external relations at the International Chamber of Shipping, which represents more than 80 percent of the world's merchant fleet.

"Shipowners still have legitimate concerns about global availability of compliant fuel, and questions relating to compliant fuel compatibility, quality, and safety," he told Bloomberg Environment. The issue is crucial because "shipowners do not control the fuel supply chain."

Meanwhile, shipping companies are trying to limit sulfur fumes by installing exhaust gas cleaning systems known as scrubbers, Tore Longva, principal consultant for international regulatory affairs at Norway's ship classifier DNV GL Maritime, said. During 2018, companies ordered some 2,000 scrubbers, which are designed to remove sulfur oxides from the ship's engine and boiler exhaust gases.

"However, recently the debate has picked up on the sustainability of scrubbers, and we see local regulations banning use of open-loop scrubbers," he told Bloomberg Environment.

To address these concerns, the IMO's Maritime Environment Protection Committee will meet May 13-17 in London, the U.N. agency's spokeswoman, Natasha Brown, told Bloomberg Environment.

In a separate but related move, the IMO's Maritime Safety Committee has "agreed to begin work in 2019 on development of measures to enhance the fuel oil quality of ships," Vicente said. The MSC will meet June 5-14 in London.

Reducing Carbon Emissions

During the Maritime Environment Protection Committee's May meeting, ship owners and nation states also will "consider detailed proposals about potential reduction measures" for greenhouse gas emissions, Vicente said.

For instance, shipping firms will “continue to support adoption of a mandatory audit of ‘Ship Energy Efficiency Management Plans,’” which the IMO introduced in 2011 to help fleets become more energy-efficient, he said.

The IMO also will push for new ships including tankers, bulk carriers, gas carriers, general cargo ships, container ships and refrigerated cargo carriers to use less-polluting equipment and engines, Brown, the IMO spokeswoman, said.

The IMO estimates that both measures could help to cut carbon dioxide emissions by up to 180 million metric tons a year by 2020 and up to 390 million metric tons by 2030. “Both measures can potentially be adopted quickly and therefore received broad support at IMO,” Vicente said.

To help measure the progress in emissions cuts, the IMO will launch a new study that by 2020 will provide robust data on international shipping fuel consumption and greenhouse gas emissions, according to Brown.

In parallel, large ships using European Union ports will publish in 2019 their verified annual emissions as required under new EU regulations, Longva said.

Managing Ballast Water

Implementing ballast water management rules “continues to be a priority for shipowners as we head into 2019,” Vicente said.

Under the IMO rules, ships are required to manage the water they carry in their ballast tanks to improve stability in a way that prevents invasive aquatic species from being introduced in new ports and environments.

Other issues under discussion in the IMO include fouling of pipes and underwater surfaces by organisms such as barnacles and algae, underwater noise, and plastic litter, although “these issues are in a preliminary stage,” Longva said.

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Asian Nations Move to Find Pollution Solutions

- *China readies \$1.4 trillion stimulus measure that will help cut air, soil, water pollution*
- *Elections in India could prompt government to revise ambitious renewable energy target*

December 26, 2018

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Air pollution measures will stand front and center in China and India in the new year while Southeast Asian nations will be dealing with the effects of climate change and deforestation on both their economies and landscapes.

Taiwan, Japan, and South Korea are expected to move ahead with renewable energy measures in an effort to keep the power flowing and help them reach future carbon emissions goals.

China

China is contemplating stimulus measures that could reach \$1.4 trillion over the next two years. If past efforts are anything to go by, airborne pollutants from fresh steel, cement, and other heavy production will likely rise, as will carbon dioxide emissions.

This comes after major strides to reduce air pollution. As of Jan. 1, 2019, companies in the coking chemical, oil refining, nonferrous metal smelting, flat glass, and electroplating industries will have to comply with new technical guidance for calculating intensity of generating or emitting pollutants for environmental impact assessments.

In March, facilities that have vehicles fueled by gasoline, liquefied petroleum gases, or natural gases will be required to follow stricter emissions testing and measurement methods for carbon emissions.

Air pollution controls in some areas have been loosened to better deal with local economic conditions after governments complained of “one-size-fits-all” air pollution enforcement.

That has included more leeway in announcing air pollution alerts, which trigger production reductions and stoppages, as well as wiggle room on transitioning rural villages from home coal heating to electricity and natural gas if the infrastructure isn’t yet in place.

After plateauing between 2014 and 2016, China’s carbon dioxide emissions rose in 2017 and 2018, based on an [emissions gap report](#) the United Nations Environment Program released in late November.

The country is still on track to reach peak carbon emissions by 2030, according to most analyses, but some wonder if China could be making greater effort.

China also will move ahead with implementing a national carbon emissions trading program in 2019 through a pilot project covering coal-fired power at the outset, though an official start of the system is not expected until some time in 2020. Other heavy industrial sectors could follow.

“The potential for reducing the emissions from coal and electricity is limited,” Wang Shuxiao, a professor at the School of Environment at Tsinghua

University. China's coal power production has cleaned up at the individual plant level from a decade ago and "it is necessary now to strengthen the management of industrial sectors such as steel, building materials, petrochemicals, chemicals, coking, roads, and nonroad transportation, and other pollution sources."

China's first Soil Pollution Law, adopted in August 2018, is set to be implemented Jan. 1, 2019. Air and water pollution laws have been amended in recent years, but this one has been particularly tricky for the government because of controversy over polluted farmland and residential units built on former sites of heavy industry.

The new law has a lot to say on future prevention, but not much on the cleanup of past pollution.

"The main challenge [for the new law] is that there is no dedicated agency at the national level responsible for treating already polluted land," said Xia Jun, a lawyer at nongovernmental group Friends of Nature in Beijing. "There may be some semi-official institutions set up [this year] for treatment with funding coming from the government, society and the public."

Reforms to how China does environmental impact assessments for construction projects will kick in Jan. 1, 2019. The changes will put more burden on builders to show they are meeting standards after the project is completed. This could spur a cottage industry of services for permits and evaluations of those projects, Xia said.

Legislators reviewed amendments to the country's Solid Waste Law in mid-2018. A final version is expected to be released in mid-2019, based on timelines for previous revisions to the country's air and water pollution laws.

India

India is due to advance measures to clamp down on air pollution and promote cleaner vehicles in 2019, but upcoming national elections could disrupt the country's plans.

Its cities are among the world's most polluted, with major urban areas like New Delhi, Lucknow, and Varanasi leading global counts of concentrations of deadly microscopic airborne particles in the 2.5 micron range.

The Ministry of Environment, Forest and Climate Change is finalizing a National Clean Air Program expected in 2019. A draft from April 2018 proposed increasing the number of air quality-monitoring stations, promoting cleaner fuels, and more research into the sources and consequences of pollution.



A sweeper cleans a road amid heavy smog in New Delhi, Nov. 8, 2018.

Photographer: Dominique Faget/AFP/Getty Images

The judicial body the National Green Tribunal in October also suggested the timeline to cut pollution by 70 percent to 80 percent in the most affected cities during the next decade wasn't enough.

"That's going to be a very, very crucial issue," said Kanchi Kohli at the Center for Policy Research's Namati Environmental Justice Program. "Governments across center and state will have to be dealing with it."

The Ministry of Environment and Ministry of Power has until March 1, 2019, to report on the progress of coal-fired power plants in meeting new emissions standards requiring them to curb output of polluting particles.

To encourage faster uptake, ministries are working on a process by which power plants that upgrade their operations have priority in selling their energy. The plan is expected to advance in 2019, said Sunil Dahiya, a campaigner at Greenpeace India, helping ensure that plants which bear the cost of upgrading don't become uncompetitive.

The country's mega-capital Delhi, a focal point of pollution concerns, will be rolling out a new policy to promote electric vehicles like motorcycles and three-wheeled rickshaws. The government is currently reviewing public comment on proposals, which include financial incentives for prospective buyers and added perks like waivers from certain fees and permits.

E-car makers also are bracing for a renewal of the Faster Adoption and Manufacturing of Hybrid and Electric Vehicles scheme, which is due to expire on March 31, 2019.

End-of-year discussions suggest the renewed program could swap some financial incentives for indirect measures like a lower tax rate of 5 percent, down from 12 percent, said Sohinder Singh Gill, CEO of manufacturer Hero Electric.

Starting in April, India also will introduce lower emissions fuel for conventional vehicles in the national capital region, an area of more than 40 million people encompassing Delhi and surrounding cities. Bharat Stage-VI fuel, as it is known, is already used in the capital itself and distribution will be expanded nationally in 2020.

Industry participants, lawyers, and campaigners said general elections loom large. Due in April or May 2019, analysts expect Prime Minister Narendra Modi's government to face a tough re-election battle, which could have a number of ramifications for environmental policies and regulations.

Most notably, it was unclear what would happen to the country's ambitious target of creating 100 gigawatts of solar energy capacity by 2022. The previous government introduced a target of 20 gigawatts of solar energy, which the current administration then increased.

With current capacity around 26 gigawatts, India is unlikely to meet that "aggressive" goal, said Raj Prabhu, CEO of consultancy Mercom Capital Group. That could in turn prompt the next government to move the goalposts, particularly as they aren't enshrined in law.

"In the first half of 2019 there is going to be just inertia," said Kanika Chawla, of Delhi-based Council on Energy, Environment, and Water. "In the second half, it depends very much on what government we have. We can see ambition ratcheting up, or we can see it getting diluted," she added.

Japan

Japan could see a sudden drop in foreign and domestic investment in solar power projects in the coming year, potentially accompanied by the first challenge under the country's investor-state dispute settlement system.

The Ministry of Economy, Trade and Industry is planning to cut guaranteed minimum rates to solar power operators. Citing persistent delays on solar installation projects, the ministry last October ordered companies that received permits for solar projects between fiscal 2012 and 2014 under the feed-in tariff program to either complete those projects by the end of fiscal 2019 or see their solar subsidies slashed.

That schedule may be too aggressive for some Japanese solar power producers and their lenders, according to Kiyoshi Tanigawa, a manager at Keidanren, Japan's business federation.

"As building and connecting mega-solar installations to the grid can take five to six years in some cases, some companies consider the government's end-of-fiscal-2019 deadline too ambitious," Tanigawa told Bloomberg Environment.

Solar power operators ended 2018 with subsidies ranging from 32 yen to 42 yen (28 cents to 37 cents) a kilowatt-hour. That would be cut to 21 yen (19 cents) for companies that miss the deadline.

If all authorized solar installations are connected to the grid by the end of fiscal 2019, customers could end up paying 1.2 trillion yen (\$10 billion) as companies pass on costs associated with the sped-up time frame, according to Keidanren's estimates.

With solar power development set to become less attractive, foreign and domestic renewable energy producers are going to turn to biomass or offshore wind power projects, Maya Ito, natural resources and energy partner at Nishimura & Asahi in Tokyo, told Bloomberg Environment.

If companies cancel their plans for solar construction, it would be "destructive to the future of renewable energy in Japan," said Kana Itabashi, environmental and labor law partner at Baker McKenzie in Tokyo.

Moreover, some foreign investors could challenge the plan in what would be the first case brought under the investor-state dispute settlement system set up under trade agreements Japan has with other countries, according to Itabashi.

Also coming are new rules for factory owners. The Soil Contamination Countermeasures Act was amended on April 1, changing rules for 26 types of hazardous substances. The new law is a mix of tougher and more relaxed rules affecting companies that own, manage or occupy factory sites, Osamu Inoue, environmental law partner at Ushijima & Partners in Tokyo, told Bloomberg Environment.

In addition, factory operators will be subject to broader investigation and reporting requirements. Companies seeking to use large parcels of land will be required to notify the government and submit a plan to deal with any potential harmful effects of the switch, which will "enable the government to monitor the progress but it will put more burden to businesses as they need to prepare mandatory remediation plan," Itabashi said.

Japan also is considering expanding the scope of notification required for exposure to asbestos and requiring qualifications for asbestos investigators after the Ministry of the Environment set up a committee to review existing asbestos laws following a string of court cases that found

the government and construction-equipment manufacturers liable for negligence.

South Korea

South Korea's major environmental priorities in the coming year will include advancing plans to reduce generation of fine dust particles by 30 percent by 2022 and to cut greenhouse gas emissions by 37 percent by 2020.

It plans to accomplish this by offering cash incentives up to \$90,000 and tax breaks to individuals and businesses to scrap their old, diesel-powered cars in exchange for cleaner options so that 250,000 more electric vehicles will be on the roads by 2020 and more than 14,000 additional charging stations will be available.

The government also will offer financial support to small- and midsize companies to install systems to reduce particle emissions, while tracking emissions sources using drones.

In addition, companies that manufacture or import products that include potentially harmful chemicals will face more regulatory requirements in 2019. Companies also will have to comply with registering their potentially "worst-first" chemicals.

Thailand

Thailand will struggle to meet its goals to reduce greenhouse gas emissions, even with new rules allowing the government to order businesses to suspend polluting activities.

Authorities will have the power to require companies temporarily stop work if it is especially damaging to air quality, whether they are constructing buildings or burning plastics or rubber. Thailand relies heavily on coal for electricity, which "is conflicting" with its Paris Agreement commitment, Greenpeace campaign manager Tara Buakamsri said.

More coal plants are planned, and the transition to renewable energy is going slowly. Waste-to-energy plants have filled the production

quota allowed by the government, so some are lobbying Bangkok to increase permits for these alternative sources of power.

But protests have broken out among residents who don't want these factories in their backyard, fearing the risks of pollution. To address electricity needs, the government will consider approving a retail-trading scheme in which households can sell their excess power to one another.

Power and water could be in short supply in the coming year. Thailand warned residents that the winter drought would extend into 2019, putting 20 of the country's 76 provinces on an alert list and advising they plant drought-resistant crops instead of rice.

To further protect water resources, authorities will be trying several initiatives to reduce plastic use. The campaign will expand in 2019 with the aim of reaching all 154 national parks eventually.

Indonesia

Indonesia is the fourth-largest carbon emitter on the planet, so its climate actions have far-reaching impacts, especially its management of forests and energy. Jakarta plans to extend its moratorium on deforestation into the new year, which successfully reduced tree cover loss by 60 percent in 2017 compared with 2016.

That moratorium was focused on peatland, much of which was razed to make way for palm oil plantations.

The moratorium "has to be maintained," World Resources Institute Indonesia communications specialist Reidinar Juliane told Bloomberg Environment. "Extending the forest moratorium policy to include secondary forest has potential to cut more emissions from the forestry sector."

The island nation has the most peatland on earth and the third-biggest rainforest area, both of which store carbon dioxide more than most plants. But palm oil has become such a big export that the

industry has asked Jakarta to take action against Greenpeace for protesting its business.

Deforestation is Indonesia's biggest source of carbon emissions, but fossil fuels are expected to continue to outpace it. Future energy plans to meet the Paris climate goals are supposed to decrease dependence on coal, yet Indonesia still intends to expand capacity at its current coal-fired power plants, which supply more than half of its energy needs.

"Indonesia has the chance to choose a better, integrated approach for national commitments on climate, biodiversity, and development," World Wide Fund for Nature communications director Elis Nurhayati said. "2019 can really pave the way for a pivotal year 2020."

Vietnam

Vietnam will spend 2019 bolstering its defenses and adapting based on U.N. recommendations from the most recent gathering in Poland. Vietnam sought a detailed guideline to implement the Paris Agreement.

Steps include plans to import more liquefied natural gas in the face of a potential coal shortage in the next year. Hanoi officials will discuss another pilot program in January to launch more wind and solar power projects, which remain a small fraction of current energy use.

Also vital to Vietnam's environmental protection is water management for a country with a 3,000-kilometer coast. After working to ensure clean drinking water in the past decade, Vietnam is now turning to issues such as wastewater treatment, flood control, and salinity intrusion.



A farmer moves shrimp from holding pen to pond in the My Xuyen district in Vietnam.

Photographer: Roberto Schmidt/AFP/Getty Images

Its upcoming Resolution 120 focuses on sustainable development for the Mekong Delta, one of the largest deltas in the world. Under the resolution, farmers will try to adapt to rather than avoid brackish water, such as switching to foods that can survive salty water like shrimp, fish, and certain crops.

“Our democracy is based on the concept of living with water,” said Henk Ovink, Dutch special envoy for water who helped advise Vietnam on its strategies.

Vietnam also will push residents to recycle; use surface water instead of pumping groundwater, which contributes to sinking land; and transition to higher value agriculture that doesn’t deplete soil nutrients. “Scientists need to find many effective measures to ensure sustainable development and soil’s plant nutrition,” the Ministry of Natural Resources and Environment said.

Malaysia

Malaysia’s environmental actions will be driven largely by fiscal policy in 2019. The government has several tax breaks planned in its budget for the year, including adding more incentives for green technology.

Companies selling ecofriendly products and services, from electric scooters to solar-powered ventilation, enjoy tax exemptions on 70 percent of their income for a limited time. Malaysia regulates

these in nine asset categories, a number that will grow to 40 asset types next year, qualifying more technologies for tax reductions.

Kuala Lumpur will offer a similar tax perk to businesses that “reduce the pollution of plastic waste” by creating “environmentally-friendly plastics based on bio-resin and biopolymer materials,” said Lim Guan Eng, the country’s finance minister.

The country also will spend 60 million ringgit (\$14.4 million) to protect national forests and expand protected areas, give 5 million ringgit (\$1.2 million) for ecofriendly development of areas dominated by minority groups, and subsidize 2 percent of interest payments on projects that finance green technology or U.N. Sustainable Development Goals.

“The government is committed to take all necessary measures to protect our environment, both as a responsibility and an endowment to our future generations,” Lim said.

Malaysia, along with Indonesia, supplies nine out of 10 palm oil shipments to the world, which unleash massive carbon emissions when farmers burn forests for new palms. No relief is in sight for 2019: The government wants to increase palm oil demand, so it will subsidize purchases in the transportation and industrial sectors, as well as pay smallholder farmers to get government certification.

Taiwan

Taiwan will push forward with an ambitious offshore wind plan in 2019 as the earthquake-prone island continues to phase out nuclear power. The island’s three operational nuclear power plants will go offline by May 2025 as planned, Cabinet spokeswoman Kolas Yotaka said.

The ruling Democratic Progressive Party has set the goal of making Taiwan nuclear-free part of its platform in every recent election and that policy is expected to continue in 2019.

Inspired by Germany's energy transition during the past decade, Taiwan's upcoming national energy plan calls for all nuclear power reactors and oil-fired power stations to be closed before 2025. By then, natural gas-fired generators will account for 50 percent of its power generation, coal-fired power plants will provide 30 percent, and renewable energy will account for 20 percent.

Taiwan also plans to have 5.5 gigawatts of offshore wind energy by 2025, Tze-luen Lin, deputy chief executive officer of the Cabinet's Office of Energy and Carbon Reduction, told Bloomberg Environment.

Also ahead, the Taiwan Environmental Protection Administration will send the draft of a revised Environmental Impact Assessment Act to the Legislature by March 1. Environmental groups strongly criticized the move.

The ministry also approved an impact assessment for the island's third liquefied natural gas terminal in northern Taoyuan's coastal area near a large algal reef, a rare type of reef built up of pink and purple crustose coralline algae. Although environmental groups protested, the Cabinet said the project is needed to help to phase out nuclear power.

In addition, the government will offer cash incentives in 2019 to get people to abandon their two-stroke scooters. It hopes to get 550,000 scooter owners to deregister their scooters by the end of 2019, with the aim of banning them by 2020. People who buy cleaner electric scooters will be given cash incentives in coming years.

Yen-yang Chen, marketing manager of Gogoro, a Taiwan-based company selling electric scooters, said the global electric scooter market is expanding. Starting 2019 and running through 2022, the environmental agency will offer financial subsidies to encourage drivers to replace diesel-powered cars that are more than 20 years old, which produce more pollution than newer ones.

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Mexico's Open Energy Market Could Be Closing

- *New populist president could alter move to open energy markets*
- *Oil exploration could be area to watch*

December 28, 2018

Emily Pickrell in Mexico City at correspondents@bloomberglaw.com

The recent election of Mexico's new populist president, Andres Manuel Lopez Obrador, is expected to give the energy and environmental sector a more nationalist flavor in 2019 and diminish the role of the open market.

The new administration won the election, in part on the promise of developing and boosting domestic natural resources and moving away from oil and gas development and distribution to private interests.

The big question is whether the opening of exploration and development to private sector companies such as Exxon Mobil Corp., BP Plc, and Total SA will continue.

The new president has promised to honor the 107 oil and gas contracts awarded to private companies in four bidding rounds, but he postponed previously scheduled auctions. It also is unclear whether new auctions will take place in light of Mexico's declining domestic production and need for foreign investment.

The extent to which Mexico's national oil and gas company, Petroleos Mexicanos, or Pemex, will be given preferential treatment is also a mystery. Lopez Obrador has promised to build a new refinery in Tabasco and to increase domestic production of oil by 600,000 barrels a day by the end of his term, both of which signal a central role for Pemex.

Giving Pemex a Boost

"What we would be concerned about is how far the government is willing to go to give Pemex a priority position in the market, and how far it is

willing to go to cover the costs of having Pemex be the dominant player," said Dwight Dyer, a former senior official in the Energy Ministry in the outgoing Pena Nieto administration.

In addition, a reduced emphasis on imports will likely mean a big drop-off in investment from the nearly 3,000 miles of new pipelines built under the administration of former President Enrique Pena Nieto. Lopez Obrador plans to focus instead on developing domestic natural gas fields such as the giant Ixachi field in Veracruz, a recent discovery.

Wholesale Electricity Stable

In the power sector, the wholesale electricity market established under the prior administration is likely to remain. The next step will be assessing how the market will develop and whether Mexico's national power company, the Federal Electricity Commission, will dominate it.

Without auctions to meet the growing residential power demand for power, Mexico will likely have to change its law setting the renewables goals, according to Andrea Calo, the director for market intelligence-Mexico at Customized Energy Solutions, a management consulting services firm.

"I think they will reactivate these auctions because this is the process that the CFE has to go through to meet the requirements of the law," Calo told Bloomberg Environment.

The administration's focus on energy security may come at the cost of environmental protections, according to Anaid Velasco, a policy analyst at the Mexican Center of Environmental Law.

Policies Precede Assessments

Lopez Obrador's proposals, such the one to construct a new refinery in Tabasco, appear to be moving forward without an adequate assessment of the potential impact on the environment, Velasco said.

He also has proposed expanding Mexico's hydropower, but any new facilities could have adverse environmental impacts unless they meet the country's strict environmental requirements, Dyer said.

The uncertainty over oil and gas auctions could dampen new investment in solar and wind projects, making it more difficult for Mexico to reach its goal to have 35 percent of its energy come from renewable sources by 2024 and 50 percent by 2050.

"The emphasis on energy security does not allow for the commitments Mexico has made to battling climate change," Velasco told Bloomberg Environment. "I think they will continue with the Paris Agreement, but they are talking about measures that are not consistent with the terms of the agreement."

Budget Puts Energy First

The administration's proposed budget, announced Dec. 15, supports the view that environmental concerns will likely take a back seat to domestic energy production. It increases funding for Pemex and its national power company but reduces spending for climate change efforts by about 50 percent. It also includes a 35 percent reduction for the Environmental Ministry.

"We are in a schizophrenic situation," said Carlos Tornel, program coordinator for the Mexico Climate Initiative, a nongovernmental organization. "At the climate change talks in Poland, the new government said that they are very committed to the Paris Agreement and would do everything to enforce it. But at the same time, the government was announcing the new refinery in Dos Bocas."

Water Law on Agenda

New legislation protecting water rights and access for citizens also is likely to be on the 2019 agenda.

The administration has indicated it expects to begin working on a new version of a national water law that would clarify guarantees in Mexico's Constitution.

The previous administration unsuccessfully attempted to pass a version of the national water law and sparked public demonstrations over its industrial access provisions.

"Water seems to be a priority for the new administration," Velasco said. "The administration has already said that the priority will be to ensure the human right to water for all citizens."

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Canada Elects Carbon Options

- *Trudeau's environmental policies front and center in election year as Canada's carbon tax faces legal challenges*
- *Fate of Trans Mountain pipeline expansion could be decided*

December 28, 2018

James Munson at correspondents@bloomberglaw.com

Prime Minister Justin Trudeau, who staked much of his political mandate on the environment, will either see his efforts enshrined in law or upended in 2019 as Canada enters a rollicking election year.

While polls give Trudeau's Liberals a comfortable lead, plenty of hotly debated policies and projects are coming to a head in the months leading up to a national vote Oct. 19.

A national carbon tax will take effect, two constitutional challenges against that tax will get underway, the Trans Mountain pipeline expansion will get further consideration for construction, British Columbia's legal challenge to that pipeline may be decided, and sweeping changes to the environmental permitting of industrial projects, pipelines included, are likely to become law.

The federal carbon tax, which dominates debate on the environment in Canada, will take effect in 2019 in provinces and territories that either don't have a similar policy in place or have decided they'd prefer the federal plan rather than create their own.

The carbon tax will have two parts: an output-based pricing system and a fuel charge. Certain large emitters will participate in the output-based pricing system to reduce the risk they will be undercut by companies in other countries, according to government. Everyone else has to pay charges on fuel.

Participants in both camps are paying a price that is equal to C\$20 (\$15.08) a ton of carbon dioxide equivalent.

Output-Based Pricing

Saskatchewan, Manitoba, Ontario, and New Brunswick fall in the first category. The output-based pricing system takes effect Jan. 1, 2019, in those provinces, as well as in Prince Edward Island. That province's climate change plan only partly meets federal standards.

Industrial facilities that emit more than 50 metric kilotons of carbon dioxide equivalent annually in those provinces have to participate in the output-based pricing, where they will receive credits from Ottawa for polluting below a designated threshold. Entities polluting above the threshold will pay the price equal to C\$20 a ton or buy the credits from companies under the standard and submit those back to government.

Federal documents indicate 133 entities will participate in the output-based pricing system in 2019.

Fuel Charge

The second part of the carbon tax, a fuel charge on coal and petroleum fuels, won't come into force in Saskatchewan, Manitoba, Ontario, and New Brunswick until April. The C\$20 price can vary across fuel type and will change over the year.

The carbon tax will come into effect later in Canada's three northern territories, which face unique energy constraints due to their dependence on diesel. Yukon and Nunavut have chosen to have the federal policy take effect in their jurisdiction, and the Northwest Territories has its own plan. All three plans take effect July 1.

Canada's remaining provinces already have a carbon pricing plan in place.

The federal carbon tax will face two major legal challenges early in the year. A constitutional challenge of the tax's jurisdiction begun by Saskatchewan, which Ontario and New Brunswick have joined in support, will have its first hearings at the Saskatchewan Court of Appeal Feb. 13 and 14. Hearings for a similar challenge by Ontario in that province's Court of Appeal is scheduled April 15-18.

Trans Mountain Expansion

Ottawa's push to build the Trans Mountain expansion pipeline, which it bought from Houston's Kinder Morgan Inc. in August for C\$4.5 billion (\$3.4 billion), faces deadlines in 2019.

The National Energy Board must complete its re-examination of the project's impact on marine species by Feb. 22. A consultation of affected indigenous communities has no deadline, but the federal government will be under pressure from Alberta to get it done ahead of the summer construction season.

British Columbia has been attempting to regulate the pipeline's spill risks, a move many see as obstructionist. A hearing on whether the province's attempts are legal is scheduled at the British Columbia Court of Appeal for March 19.

The C\$5.3 billion Canadian leg of Enbridge Inc.'s Line 3 connecting Alberta to the U.S. Midwest is expected to become operational in late 2019, easing a supply glut in Alberta that has forced producers to sell at a steep discount in recent months. The province is negotiating the lease of railcars so that it can move an extra 120,000 barrels of oil a day to U.S. markets by late 2019.

Permitting

In Parliament, two important pieces of legislation for the energy and mining sectors are expected to become law by the summer. Bill C-68, which expands fish protections, and Bill C-69, which expands the impacts that must be studied when large industrial projects are proposed, will significantly alter the permitting process for resource companies for the second time in five years.

To heat things up even further, Alberta, where Canada's energy politics play an even bigger role than on the national stage, is going to the polls between March and May.

Most polls in recent months show the incumbent New Democrats losing to the United Conservative Party. The oil sector has been slowly coming out of a downturn for the past four years, damaging Premier Rachel Notley's prospects. Her support of Trudeau's carbon tax plan was critical at its inception, but Ottawa's failure to get the Trans Mountain pipeline built has set them apart.

A victory by United Conservative Party Leader Jason Kenney would set the federal and provincial governments apart even further, as Kenney has pledged to join Ontario's and Saskatchewan's fight over the carbon tax in the courts.

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Brazil's Bolsonaro Pushes for Lax Pesticide Rules

- *Brazil could ease pesticide, environmental regulations*
- *Elsewhere, Peru will look at legislation on oil and gas contracts*

December 31, 2018

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Brazilian lawmakers could pass bills in 2019 to ease pesticide regulations and relax environmental permitting requirements in an effort to revive struggling industries in South America's biggest economy.

President-elect Jair Bolsonaro has made both bills priorities as he prepares to take office Jan. 1, 2019. His choices for agriculture and environment ministers have links to agribusiness, which stands to benefit from less restrictive pesticides and environmental permitting requirements.

Bolsonaro's pick for agriculture minister, Tereza Cristina Correa da Costa Dias, who headed the farm lobby in the Chamber of the Deputies, the lower house of Congress, has been the major force behind the plan to relax Brazil's pesticide regulation.

The [bill](#), awaiting a Chamber vote, would allow the agriculture ministry to permanently register any new pesticide after conducting technical studies, and to provisionally register those already registered in any three countries of the 36-member Organization for Economic Cooperation and Development.

'Huge Setback'

Currently, three ministries—agriculture, health, and environment—must analyze and approve new pesticides before they can be registered in Brazil, and any of the three can block a registry or restrict its use.

"A bill giving the agriculture ministry sole power to register new pesticides is a huge setback that greatly increases their health and environmental risks," Marina Lacorte, food and agriculture campaigner for Greenpeace in Brazil, told Bloomberg Environment.

Luis Rangel, the agriculture ministry's secretary of farm, livestock, and food supply protection, defends the proposal, saying "the bill, by allowing this ministry to provisionally register a new pesticide will streamline a now-lengthy process and benefit farmers."

Bolsonaro's choice for environment minister, Ricardo Salles, promotes agribusiness and other forms of economic development to the detriment of environmental protections, activists said.

License Exemptions

"Salles, like Bolsonaro, favors greatly reducing environmental regulations and making environmental licensing far less rigorous," Carlos Bocuhy, president of the Brazilian Environmental Protection Institute, a Sao Paulo-based nonprofit, told Bloomberg Environment.

The effects of another [bill](#) could span several business sectors: It would exempt farms, ranches, and agribusinesses from environmental licenses needed for operations, as well as expansions.

It also would make it easier for small-scale developers to begin work and limit public

hearings of higher impact projects, including infrastructure works.

“Congress will likely pass both bills because most federal legislators, like Bolsonaro, believe that relaxing environmental regulations are key to economic development,” said Adriana Ramos, public policy coordinator at the nonprofit Socio-Environmental Institute in Brasilia. “Most green groups believe that both bills loosen regulations so irresponsibly as to invite environmental harm.”

Elsewhere in South America:

Peru

Changes in legislation governing oil and gas contracts and the application of new rules for single-use plastics will shape Peru’s environmental agenda in 2019.

President Martin Vizcarra’s administration is pushing Congress to approve a bill that would make changes to rules governing oil and gas exploration.

The bill would allow oil and gas leases to run as long as 60 years, up from 40 years currently, and relax some standards for exploration. It also would create an offshore protected area.

“We need to modernize legislation if we hope to attract investment in exploration,” said Seferino Yesquen, chairman of state-run oil company Perupetro SA. “We will never know what resources we have without exploration.”

Marine Protected Area

The oil and gas industry backs the legislation, though not a simultaneous effort by the administration to create a 444-square-mile marine protected area that would overlap with current and planned drilling blocks off the northern coast.

The plan risks undermining the new legislation, said Felipe Cantuarias, president of the Peruvian Hydrocarbon Society, which represents oil and gas companies.

“The protected area, despite the government’s opinion, would lead to legal fights that would exclude offshore activity,” Cantuarias told Bloomberg Environment. “The investment expected would not happen.”

Environment Minister Fabiola Munoz wants the protected area created in the first quarter of 2019.

The coming year also marks the start of a three-year phaseout of single-use plastics. Peru’s Congress approved legislation in December that would ban production and distribution of single-use plastics and polyethylene products by 2023. Implementing language will be put in place in 2019.

Eduardo Farah, head of Apiplast, Peru’s plastics manufacturers’ association, said the ban would risk more than \$300 million in investment.

Ecuador

Mining will replace oil as a flashpoint for disputes between Ecuador’s government and interest groups on how best to manage the country’s natural resources and safeguard the environment in the new year.

While mining companies continue to show interest in Ecuador—which has sizable gold, copper, and mineral reserves—concerns about the merger and other policy changes will continue to percolate.

The government’s decision in 2018 to combine the Mining Ministry into the Energy and Non-Renewable Natural Resources Ministry will add “a new level of uncertainty” for mining companies, said Santiago Yopez, country manager for Lucky Minerals Inc. and president of the Ecuador Chamber of Mines, which opposed the move from the start.

The mining ministry “represented a clear policy direction” that could now be lost, he said.

Mining Battle

The new year also will likely see growing opposition from the country’s indigenous groups, which want to ban mining in Ecuador and have submitted draft legislation to Congress. Mining is incompatible with the country’s 2008 Constitution, which is the first in the world to provide rights to nature, the groups said.

“Mining companies do not respect the laws of our country,” Manuel Castillo, representative of the Confederation of Indigenous Nationalities of Ecuador, told Bloomberg Environment. “They put at risk the lives of people.”

The government, meanwhile, is actively courting mining companies as it looks to raise \$8 billion in 2019 to cover budget obligations.

In September, Anglo American Plc and Canada’s Luminex Corp. formed a joint venture and will work on several projects in the coming months.

Luminex saw Ecuador as “the final Latin American mining frontier” when it first invested in the country in 2014, and legal and fiscal changes have “made it into one of the world’s most exciting mining investment destinations,” said Luminex spokesman John Youle.

Chile

Protests over air quality in the industrialized port of Quintero helped move air pollution to the top of Chile’s environmental policy agenda.

President Sebastian Pinera promised a solution after more than 1,000 people fell ill in late August from exposure to an unidentified gas. Environmental regulator Superintendencia del Medio Ambiente stepped up inspections in the area, which led to fines against oil companies

Empresas Copec SA and Empresa Nacional del Petroleo (ENAP).

Work has begun on a new decontamination plan for the area. Environment Minister Carolina Schmidt is promising a new regulation setting hourly limits for sulfur dioxide rather than annual or daily averages, allowing the authorities to intervene more quickly.

The proposals have sparked calls for similar measures to be taken in areas likely to be permanently impaired, or “sacrifice zones,” such as Huasco, Mejillones, and Coronel.

Residents in those areas are awaiting a retirement program for the country’s coal-fired power plants, which Energy Minister Susana Jimenez has said will be ready during the first half of 2019. A target to source 20 percent of electricity from renewables, such as solar and wind, is expected to be met next year—six years ahead of schedule.

Climate Change

As one of the countries most exposed to the effects of climate change, Chile will be working on efforts to mitigate the effects of expected hotter, drier weather in the central valley. Regional consultations have begun on a framework climate change law that the government plans to send to Congress late next year.

In Congress, debate will focus on legislation to change Chile’s environmental permitting system, after a series of major energy and mining projects were derailed in the courts.

The government also will invoke a ban on stores handing out plastic bags.

Chile is a favorite destination for adventure tourism, thanks in large part to the landscapes preserved in its parks and the creation of a new parks network, stretching 2,000 kilometers through Chilean Patagonia.

Pressure from residents and businesses will mount for the government to approve legislation to create a National Service for Biodiversity and Protected Areas, promised a decade ago but still stuck in Congress.

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Spotlight Moves to 'Economies of Climate Change'

- *U.N. conference in September to seek deep cuts by 2030 to avoid worst impacts*
- *Referendum would focus on 'economies of climate change,' adviser says*

December 31, 2018

Bobby Magill at bmagill@bloombergenvironment.com

The next nine months will be homework time for countries, climate advocacy groups, and even oil companies as they prepare to respond to a United Nations call to bring concrete plans for deep greenhouse gas emission cuts to a September climate summit.

The summit, called by U.N. Secretary-General Antonio Guterres, will be the biggest gathering of heads of state and business leaders on climate change since the Paris climate agreement was struck in 2015. It follows the December climate talks in Katowice, Poland.

Before they convene in New York in September, countries are expected to begin drawing up policies and greenhouse gas pollution targets to signal a sustained commitment to confronting climate change, Rachel Cleetus, an economist and policy director with the climate and energy program at the Union of Concerned Scientists, told Bloomberg Environment.

"One could see the secretary-general's summit as a referendum not on the science of climate change but on the economies of climate change," Robert Orr, U.N. special adviser to the secretary-general on climate change, told Bloomberg Environment. "This is the moment to prove that the economic model of addressing climate change works. In September, that's what we'll see."

Several recent U.N.-sponsored scientific reports show that countries aren't on track to meet their greenhouse gas reduction targets under the 2015 Paris Agreement.

Climate Challenge

Guterres called acting on climate change a "[moral duty](#)," and in Poland he framed the threat of global warming as an existential crisis for humanity.

To keep climate change at the top of the international agenda, Guterres asked heads of state, heavy industry, and other groups to come to the summit in New York City to show exactly how they plan to go above and beyond the pollution-cutting commitments they made as part of the 2015 Paris pact.

"We haven't seen heads of state and government come together at this scale since Paris," special adviser Orr said. "The signs are good that many governments are starting to do the hard work to prepare them to come to New York in September to rise to the challenge."

Local governments, business leaders, investors, and advocacy groups will be called to the summit in addition to national governments, according to Orr.

"The real work is going on now for all of these coalitions," he said. "The summit is really a platform for the highest performers to stretch the furthest and open the doors to those who can move with them."

At the very least, the summit will keep political pressure on national governments to hold to their commitments under the Paris accord, Mindy S. Lubber, president and chief executive officer of the business sustainability group Ceres, told Bloomberg Environment.

Missed Opportunity

In Poland, envoys from more than 190 countries finalized rules for implementing the 2015 Paris Agreement and recognized that the pact calls for countries to announce by 2020 more steps to cut climate pollution.

But that outcome left climate advocacy groups and some scientists feeling that the talks were a “missed opportunity” for countries to show that they are determined to confront the threat of climate change, Cleo Verkuil, a research fellow at the Stockholm Environment Institute, told Bloomberg Environment.

“The U.N. has set 2020 for countries to submit a next round of national climate plans, known as NDCs [Nationally Determined Contributions]. The secretary-general’s summit is one of the last big political moments in advance of this deadline,” Verkuil said.

So far, the global commitment to the Paris pact has been tepid, and countries’ overall weak response to an international call for greater ambition to cut pollution and adapt to climate change bodes ill for the Paris pact, Verkuil said.

The upcoming summit is an opportunity for countries to add to their climate ambition, Orr said.

“We have a huge amount of transformation to do in a short amount of time,” Orr said. “It’s a race against time. We have the kind of actors coming together that could make it a successful race.”

Homework

That means concerned countries have to take the next nine months to focus on climate policy, Cleetus said.

“Just like Paris, the important thing—where the rubber meets the road—is when countries go back home [from Poland] and make decisions about policies and technological and social and economic changes that they’re going to implement on the ground,” Cleetus said.

Some countries will likely announce new climate policies and double down on their commitments to the Paris accord ahead of the September summit, David Waskow, director of the International Climate Initiative at the World Resources Institute, told Bloomberg Environment.

“You’ll see more countries coming forward to make clear that they’re doing their homework and looking seriously at what their current commitments are and how they can expand on those,” Waskow said.

The summit will occur several months before the next round of international climate talks, known as the Conference of the Parties to the U.N. Framework Convention on Climate Change. Those talks are expected to be held in Chile in December 2019 or January 2020. Another round of climate talks is scheduled for Europe in late 2020.

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European Nations Energized by Waste, Climate Plans

- *U.K. lawmakers will vote by Jan. 17 on its divorce deal with EU*
- *France deals with gilet jaunes fallout*

December 31, 2018

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For Europe's environment and energy future, the 2019 wild-card is Brexit, and how the U.K.'s split from the European Union could change the continent's equation on everything from greenhouse gases to pesticides. Here are key elements on different parts of the continent:

U.K.

British lawmakers will vote by Jan. 17 on the U.K.'s divorce deal with the EU. If approved, chemical companies will be able to trade freely across the bloc while energy and manufacturing companies will continue to follow EU and climate change rules until at least the end of 2020.

But if parliamentarians reject the U.K.'s withdrawal agreement, then businesses face a potential no-deal scenario where the bloc imposes tariffs on British exports as soon as the U.K. formally leaves the EU on March 29.

Alternatively, lawmakers may decide to call a new public vote on Brexit, which would postpone the U.K.'s exit date from the EU, creating further uncertainty for businesses.

Whatever shape Brexit takes won't hamper the U.K.'s goal of achieving net-zero emissions by midcentury, Claire Perry, minister of state at the Department for Business, Energy and Industrial

Strategy, said at international climate change talks in Katowice, Poland, in early December.

The U.K. faces "two major areas of challenge" related to renewable energy, said Frank Gordon, head of policy at the Renewables Energy Association. "The proposed ending of all public support for new small-scale installations in April 2019 and reforms to the grid-charging mechanisms which would see renewable sites pay more for sending power down the wires."

To address these concerns, the government plans to publish proposals on the future of small-scale, low-carbon generation and to commit to debate longer term cooperation with the EU on renewable energy as part of negotiations on the U.K.'s future energy partnership with the bloc, Perry said.

In addition, the government will invest an initial 20 million pounds (\$25.3 million) to help oil and gas companies early in 2019 identify ways they can develop carbon capture and storage technology.

The Department for Transport said it will help launch early in 2019 an auction worth 20 million pounds, inviting projects to develop and commercialize technologies to produce net-zero and low-emissions vehicles.

Department for the Environment, Food and Rural Affairs said it will take comment early in 2019 on plans to reform the packaging waste regulations that will match or exceed targets set by the EU.

France

French President Emmanuel Macron has set out a multiyear energy strategy raising carbon taxes to reduce fossil fuel use, boosting production of renewable energies, and reducing nuclear power's share of electricity production.

The moves are part of France's "ecological transition" toward a low- and eventually zero-carbon economy, he said.

France, which hosted the 2015 climate summit that produced the Paris Agreement, is one of the world's strongest cheerleaders for using carbon pricing and energy taxes. The government's draft 2019 budget bill, according to a plan initially set out in 2015, called for raising the carbon price from 44.6 euros (\$51) in 2018, to 55 euros (\$63) per ton of emitted carbon dioxide in 2019, toward a target of 86.20 euros (\$98) per ton in 2022.

To achieve that increase, the draft budget would hike taxes on fossil fuels, among other measures. In previous years, such hikes have elicited grumbling, but in 2018 they happened to coincide with a global surge in oil prices that have hit France—a high-tax country where most people still drive to work—hard.

In early December, France was hit by violent street protests by people wearing yellow visibility vests, gilet jaunes, that drivers are required to keep in their cars. The protesters complained the energy tax increases would fall mostly on low- and modest-income households, while the 2019 budget would cut funding for programs aimed at easing the impact of such taxes, such as a tax credit for home insulation.



Police use tear gas to disperse yellow vested protesters in Biarritz, France, Dec. 18, 2018.

Photographer: Gari Garaialde/Getty Images

Diesel has long enjoyed favorable tax treatment in France and there are still many diesel-powered cars on the road. Protesters were especially angry that the budget continues a plan, set out in the 2018 finance bill, to gradually raise taxes on diesel toward an alignment with gasoline taxes by 2022.

They said the budget's tax credit for people who trade in their older vehicles for newer, cleaner running ones, as well as a bonus for electric car purchases, is useless to people who can't pay for rent, food, and other bills.

The taxes were supposed to take effect Jan. 1, 2019, but Prime Minister Edouard Philippe canceled them for 2019.

Germany

In Germany, the recent choice of Annegret Kramp-Karrenbauer to take over as leader of the ruling Christian Democratic Union could add momentum to policies to reduce emissions and step up e-mobility.

While she is expected to lead the party as cautiously and reactively as Chancellor Angela Merkel did for almost two decades, some believe that recent CDU losses at the polls, growing public pressure to exit coal, court mandates to ban diesel, and growing support for the Green Party will force her to act on these two environmental fronts, and maybe others.

"There is a great chance now for sustainable energy policy," said Claudia Kemfert from the German Institute for Economic Research in Berlin.

The Commission on Growth, Structural Change and Employment on Feb. 1 is scheduled to announce its strategy for tapering down coal and lignite production.

More than three years after German automakers were caught cheating diesel emissions tests, Germany has done little to supplant them from the nation's auto fleet.

Diesel vehicles comprised 38 percent of all new cars in 2017, even as the government's goal of 1 million electric cars on the road by 2020 falters. Germany could fail to meet European Union air-quality limits as a result.

Russia

Russia will be increasing pressure to recycle waste in 2019, raising fees for companies that don't build their own recycling systems or hire waste disposal companies.

The Ministry of Natural Resources and Environment, which instituted an extended producer responsibility plan in 2017, has been raising environmental fees to make them "prohibitively high," said Anna Strezhneva, senior associate at PriceWaterhouseCoopers LLP in Moscow.

So far, most companies have opted to pay the fees rather than recycle their waste, she said.

The ministry wants to raise the cost by on average 11.4 percent on 54 categories of goods in 2019.

Manufacturers of paper, plastic, and batteries are among industries that would be hit by the plan, which has yet to receive final government approval.

Companies could avoid the fees by taking steps like using green packaging, the ministry said in an email to Bloomberg Environment.

If adopted, the measure would bring 13.6 billion rubles (\$204 million) to the state budget in 2019, and up to 20 billion rubles (\$300 million) in 2020.

Beginning Jan. 1, collection and disposal of municipal solid waste in most administrative regions—although Moscow and St. Petersburg aren't among them—will be supervised by one regional waste management operator for each region who will hire subcontractors for garbage collection.

Thousands of private companies might be driven out of business since they won't be able to compete with the subsidized regional operators, said Anton Kuznetsov, CEO and founder of Sfera Ekologii, a private waste management company based in Moscow.

And Russian lawmakers in 2019 will consider establishing an environmental tax on motor vehicles of about 172,500 rubles (\$2,600) per car.

Denmark

Denmark's ruling center-right coalition will face a serious test in leadership when parliamentary elections are held on or before June 17, 2019.

While the Social Democrat-led opposition is ahead in many opinion polls, a change of government could trigger major changes to Denmark's environmental policies. The party has supported many environmental reforms during its term in office, including tough chemical, product safety, and environmental audits.

The government's long-awaited plastics strategy was presented in December and included proposed new requirements for sorting and collecting, as well as a probable ban on microplastics in shampoos and cosmetics in 2020.

No multinational company will feel the effect of the International Maritime Organization's new cap on sulfur in shipping fuel more than the Copenhagen-based Maersk Line AS. It's aimed at reducing sulfur emissions from shipping by more than 80 percent starting in 2020. The cost of fuel will likely spike

before that date, and Maersk Line has revised the method it uses to calculate fuel prices in anticipation of the cap's implementation.

The Danish government also has pledged to update the rules governing urban environmental zones in 2019, paving the way for the municipalities in the larger cities, including Copenhagen, Aarhus, Odense, and Aalborg, to introduce tougher emissions limits.

Norway

The country's ruling center-right coalition government courted controversy in 2018 by offering new offshore oil and gas exploration licenses to companies operating on its continental shelf.

Environmental groups such as Greenpeace continue to oppose the expansion, but the government points out that oil and gas revenues support a raft of environmental initiatives, including a project aimed at capturing and storing carbon emissions from the Norcem Cement plant in Brevik that will continue through 2019.

As an emissions reduction measure, Norway plans to require aviation fuel suppliers to mix so-called advanced biofuel with conventional jet fuel. Permitted biofuel must be derived primarily from climate-friendly materials such as food waste and residues, and not from palm oil. The 0.5 percent blending requirement will apply to all jet fuel apart from that purchased by the military.

Even though it doesn't go into effect until Jan. 1, 2020, repercussions will be felt in 2019. Aviation industry officials told Bloomberg Environment that higher costs will result and more airlines could choose to refuel outside of Norway.

Norway also is expected to initiate the EU's Ship Recycling Regulation, which requires large vessels bearing signatory nations' flags to be dismantled in EU-approved facilities. The regulation was slated to be adopted Dec. 31, 2018.

Building and home owners will be gearing up for the ban on heating oil that goes into effect Jan. 1, 2020. The new regulation will primarily affect buildings in isolated areas that aren't connected to district heating systems and those using oil as a backup.

Finland

Finland will hold a parliamentary election April 14 that could result in a new, left-leaning government with different priorities from the ruling center-right coalition.

That could mean a different focus on environmental and energy issues, Heidi Malmberg, an attorney at the Castren & Snellman law firm in Helsinki, told Bloomberg Environment.

The existing government has prioritized business-friendly reforms while seeking to retain its environmental credentials.

Governmental subsidies for renewable energy, in particular wind, will likely remain problematic in 2019. Some politicians are concerned the wind power sector creates few jobs and the profits are often shifted abroad.

Finland will no doubt act on its aspirations to become a major lithium-ion battery supplier and has plentiful metal ore reserves such as nickel and cobalt that are used in battery production. Construction will continue on a new battery chemicals plant in Sotkamo, which is expected to produce 170,000 tons of nickel sulfate when fully online in 2021. Finland's first lithium mine is scheduled to open in 2019.

Companies in Finland could be affected by energy tax amendments that Parliament was expected to adopt at the close of 2018. In particular, operators using heating fuels and machinery fuels will likely experience moderate tax increases; for example, the price of light fuel oil is slated to go up 0.6 cents per liter.

A prominent environmental liability case could be resolved in 2019. The Supreme Court is expected to rule on the liability of the former operators for a series of leaks of nickel, uranium, and other toxic metals into soil and waterways surrounding the former Ahtium Plc Talvivaara nickel mines.

Teollisuuden Voima nuclear power company announced in October 2018 that the schedule for the under-construction Olkiluoto 3 power plant is again under review and commercial production may not begin as planned in 2019. The plant was originally scheduled to come online in 2009. Hanhikivi 1 nuclear plant also is experiencing delays; operator Fennovoima said in 2018 that it expects a two-year delay in the construction permit application.

Sweden

Following its September parliamentary election, Sweden's politicians haven't been able to agree on the formation of a new government and a transitional government is currently in office.

As a result, no new environmental laws were presented in the latter part of 2018 and none will be drafted while the impasse remains. Should no compromise be reached, fresh elections could be held. Any political compromise will likely entail the Social-Democrat-led center-left bloc agreeing to tax cuts, although environmental taxes and levies are unlikely to feature prominently.

Sweden's 2,100 hydropower plants could be facing more stringent demands related to water quality and other environmental concerns that industry leaders have warned could trigger plant closures. Around half the nation's electricity comes from hydropower. Legal amendments implementing the agreement are slated to take effect Jan. 1, 2019.

Companies that import or manufacture products containing perfluorinated substances (PFAS) will be required to file notifications to the nation's product register by February 2020 at the latest. A legal amendment mandating the new rules takes effect Jan. 1, 2019. PFAS are synthetic

chemical compounds often found in paints, stain repellents, polishes, and coatings that can contribute to cancer, immune system effects, and thyroid problems.

Beginning July 1, 2019, biofuels placed on the market must meet rigorous requirements regarding traceability and environmental impact.

Also in the new year, gas stations will be required to detail the climate impact of the fuel they sell, its origin, and the raw materials it contains. Environment Minister Karolina Skog told Bloomberg Environment that the new requirement would help motorists make informed choices and reduce emissions.

Last September, the Svea Court of Appeal in Stockholm ruled that mineral extraction activities limestone supplier Nordkalk AB and SMA Mineral AB planned shouldn't proceed, following the expansion of a Natura 2000 zone. The zone protects land and water bodies across the EU where industrial activity and expansion are strictly controlled. An appeal, which could set a precedent related to the environmental agency's right to extend the zones, will be heard in 2019 if the companies' application to the Supreme Court proceeds.

Switzerland

Switzerland will begin decommissioning one of the world's oldest nuclear power plants in December 2019 as part of the government's shift toward renewable energy resources.

Following the landmark passage of its Energy Act in 2017, the Swiss government notified operator BKW Energie AG that it must begin decommissioning its 1970s-era Muhleberg Nuclear Power Plant near Bern before the end of the year.

The decommissioning project is expected to take about 15 years to complete, according to a spokeswoman for the Swiss Federal Office of Energy. The move stems from Switzerland's desire to reduce its reliance on nuclear power

following the 2011 Fukushima-Daiichi nuclear disaster in Japan.

In January, the Swiss Federal Council will discuss revisions to its Energy Supply Act in order to increase energy efficiency and promote the use of renewable energy sources. The revisions seek to iron out regulatory shortcomings in the existing law and clarify provisions regarding the polluter pays principle and the efficiency and transparency of network regulation, according to the Federal Office of Energy.

The Federal Council plans to submit the revisions to the Parliament in autumn 2019.

Separately, the government's Electricity Grid Strategy will pave the way for the expansion and modernization of Switzerland's electricity grids with the goal of reducing bottlenecks in the country's electrical transmission network. The process will be finished in early 2019, and legislative amendments will enter into force in the second quarter of 2019, according to a spokeswoman for the Federal Office of Energy.

The Swiss Parliament also will deliberate revisions to its Law on the Reduction of CO₂ Emissions with the goal of limiting the global rise in temperature to less than 2 degrees Celsius (3.6 degrees Fahrenheit).

Poland

Poland will promote two clean air campaigns in 2019 as part of an extensive public education effort to tackle what has been described as Europe's worst air pollution.

Inspectors also will turn to technology in 2019 to conduct tougher enforcement against homeowners and industrial facilities that violate environmental laws. Fines will range from \$1,400 to \$280,000. Trans-border smuggling of waste into Poland will be punished with fines of \$1,400 to \$140,000.

The campaigns will inform residents that what they use for heating has immediate effects on their health

and will be accompanied by more inspections of industrial facilities and homes with old furnaces.

Some 103 billion Polish zloty (\$27.2 billion) will be budgeted for Poland's clean-air program through 2029, and two major environmental groups and the Supreme Chamber of Control, an independent audit group, plan to join the government efforts.

Environment Minister Henryk Kowalczyk also vowed to reach out to millions of Poles—20 million will be targeted in 2019—through meetings organized by local governments to educate them about the hazardous effects of burning waste.

Italy

Construction will finish in 2019 on the Trans Adriatic Pipeline, the last leg of the \$40 billion Southern Gas Corridor stretching from Azerbaijan to Italy.

In 2018, the pipeline project's future was uncertain when one of Italy's ruling coalition parties, the Five Star Movement, tried to block it. But Italian Prime Minister Giuseppe Conte said it would be too expensive for Italy to back out of its contractual obligations, despite local concerns about environmental risks and the project's impact on tourism.

Beginning in 2020, it will bring more gas coming into Europe from sources other than Russia, which will put pressure on gas prices and make the energy market less vulnerable to geopolitical uncertainty.

"Diversifying is always a good thing when you need to import as much energy as we do in Europe," said Matteo di Castelnuovo, from Bocconi University in Milan.

But more readily available gas "should not constrain Italy's environmental policies," he said, adding, "it cannot be an excuse to delay the decarbonization process."

Also starting in 2019, Italy's "eco-bonus" tax deductions for energy efficiency will be reduced

from 65 percent to 50 percent of the cost of building improvements. The deductions apply to replacements of fixtures, solar shading, winter air conditioning, and biomass boilers.

Finally, the Italian government plans to dedicate more resources in 2019 to improve air quality by fighting illegal waste burning. In Southern Italy, trash is often illegally burned, instead of being disposed of properly. This has led to a series of environmental disasters in the Campania region, called Land of Fires.

The pilot plan calls for a new monitoring network of drones and other remotely piloted aircraft and a formal collaboration between the national and regional governments to investigate and prevent illegal burning. Officials hope that tackling illegal burning in the south will relieve pressure on legal, state-run incinerators in the north and help the country transition to cleaner waste disposal overall.

Greece

Pressure is mounting on Greece to meet its 2020 targets under Europe's waste disposal laws.

The country has one of Europe's lowest recycling rates for household waste at just 14 percent, according to the National Center for the Environment and Sustainable Development, which gathers environmental data and provide information to help guide policy.

The 2008 European Union law governing waste disposal, the Waste Framework Directive, calls for cities to recycle 50 percent of their waste by 2020. Greece so far hasn't achieved the expected results, the center found.

The European Commission also will be watching closely to see if Greece's programs for managing its urban wastewater meet EU standards. In 2018, the EU Court of Justice fined Greece 5 million euros (\$5.7 million) for failing to properly treat wastewater from the Thriasio Pedio area west of Athens.

Construction on the Trans Adriatic Pipeline, which crosses most of mainland Greece, is expected

to be completed in 2019. The project stretches from Azerbaijan to Italy, with its longest section comprised of 550 kilometers (342 miles) in Greece.

Croatia

Croatia's proposed floating liquefied natural gas terminal faces a legal challenge from environmentalists concerned about what they said is a flawed review of the project's potential impacts.

The EU classifies the LNG terminal to be built on the Island of Krk as a Project of Common Interest aimed at securing and diversifying the bloc's gas sources. The EU is co-financing the terminal.

In November, the environmental group Zelena Akcija/Friends of the Earth Croatia sued in administrative court over the Ministry of Environmental Protection and Energy's approval of the project. The group, joined in the lawsuit by the municipality where the terminal will be located, said the government enacted a special law to expedite the environmental review process, which was flawed.

The project is intended to supply natural gas to Croatia and Hungary starting in January 2021, with Austria and the Czech Republic considered major potential customers as well. LNG Croatia LLC, the state-owned company is responsible for building and operating natural gas infrastructure in Croatia.

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