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Global Regulations

The chemical industry has long been trailed by a tangle of diverse regulations, and those have become more complex as firms expand their businesses and geographic reach. Companies and officials say they once harbored hopes of some global regulatory harmonization, but that they have come to believe that, in many cases, the cure may be worse than the disease.

The list of international and national chemical industry regulatory requirements is long. Some of the most resource-intensive regulations include: the European Union's (EU) Registration, Evaluation, and Authorisation of Chemicals (Reach) law, which has its first registration deadlines next June; North America's recently announced plan to coordinate chemical testing methodologies under the Security and Prosperity Partnership (SPP); the United Nations' (U.N.) 2005 framework for a Globally Harmonized System of Classification and Labeling of Chemicals (GHS); and the recently enacted U.S. chemical plant security law, which alone will swamp the desk of any regulatory compliance manager, industry executives say. Also, international pressure is on the U.S. to commit to mandatory greenhouse gas (GHG) reductions, and U.S. lawmakers are debating whether to mandate a cap-and-trade program for GHGs.

The National Association of Chemical Distributors (NACD; Arlington, VA) and Socma say that compliance with Reach and with the new U.S. chemical security rules are their respective members' top regulatory concerns. The regulatory regimes in most of Asia and Latin America are somewhat less advanced, but U.S. and European executives say they are concerned that developing countries will adopt a Reach approach to chemicals management.

Socma members are gearing up for the June 2008 Reach registration deadline, and some are having trouble determining which products and product mixes Reach applies to, says Socma director/government affairs Bill Allmond. "Members are looking to Socma to provide guidance on how Reach will affect batch manufacturers specifically," Allmond says. "There's so much information about what Reach is, but knowledge stops there. For a small batch manufacturer dealing with one product in a mixture, there's a lot to do just to figure out if you have to do anything." Socma will provide more detailed guidance on Reach's applicability for batch manufacturers in the first quarter 2008, he says.

For NACD members and their customers, it is often unclear which company is responsible for Reach compliance, says NACD v.p./government affairs Jennifer Gibson. Companies are also tracking SPP, which will combine U.S. efforts under the voluntary high production volume (HPV) chemical testing program and Canada's risk analysis program data, sources say. "It will prompt a lot more organization of chemical testing materials and could arguably be faster than Reach," Gibson says.

Some sources say that the SPP is North America's response to the EU's Reach program, and that the U.S. hopes that Asian countries will model any chemical testing protocols on SPP rather than Reach (p. 21).

"In some ways, SPP is an unofficial response to Reach, by trying to do a better job of collecting risk assessment data on high priority chemicals," Allmond says.

Companies hope to share the SPP experience details with Asian nations, some of which say they do not like the Reach approach, Allmond says. Companies will also try to use Reach data for the SPP program and vice versa, but it is unclear how much of the U.S. and Canadian data will be acceptable under Reach, he says.

EPA and Environment Canada (Toronto) will first work on an SPP framework to facilitate the exchange of data and knowledge for risk assessments, and study what the U.S. has done under HPV, Allmond says. "EPA and Canada's programs are different, but complement each other. Canada has done some nice hazard characterizations; in the U.S. we have the HPV testing data," he says.

Another regulatory challenge is the implementation of the U.N.'s GHS framework, which is aimed at harmonizing trade and labeling of chemicals by making hazard data and warnings the same across the globe. However, because nations can opt to take up only certain sections of the U.N. framework it is unclear how much actual harmonization will ensue, industry executives say.

"In the U.S. it's complicated, because GHS affects four federal agencies—EPA, the Department of Transportation (DOT), Consumer Product Safety Commission, and OSHA," says Jillaine Dellis, v.p./Ariel Global Research & Operations, a unit of compliance assistance firm 3E (Carlsbad, CA). Another complication is that OSHA and DOT must coordinate their rules as OSHA regulates labels of packages in storage, and DOT regulates labels of packages in transit, Dellis says.



Lieberman: Reduce GHGs now. Warner: Innovative cost controls.

The GHS harmonization program does not work in part because companies must draft separate, country-by-country compliance measures, given that nations will adopt only select portions of the GHS framework, Dellis says. "There was hope earlier that there would be more harmonization and that it would make things easier, but that's not really happening," she says.

Chemical companies are most concerned about the GHS rules to come from OSHA, and there is a lot of uncertainty regarding their release and content, sources say. OSHA had slated the proposed rule for issuance at the end of 2007, but officials recently announced it would be late next year before a proposal is issued, Allmond

says. Initially, OSHA had indicated that it would make sweeping changes to labeling requirements in its rules. But now it is unclear if those changes are still on the table, he says. In addition, the chief GHS official at OSHA has retired, he adds.

Chemical companies would like to see harmonization of the material safety data sheet (MSDS) information to coordinate data from one country to another, Allmond says. Currently, the user of a chemical may receive an MSDS from a company based abroad that varies from the data listed on a U.S. MSDS, he says.

Meanwhile, mandatory GHG emission reductions in the U.S. have the potential to drive a great number of changes in the chemical industry, and an interesting array of new antagonists and collaborators will arise, says Kenneth Markowitz, attorney at Akin Gump Strauss Hauer & Feld (Washington).

Some companies could benefit from early reduction credits and from the sale of new technologies that facilitate compliance, Markowitz says. Other companies could find the cost of compliance high, and are concerned they would suffer from the high cost of natural gas that would occur if utilities are forced to switch from coal to cleaner-burning natural gas.

Optimism that lawmakers will be able to advance a climate change bill rose slightly last month with a bill introduced by senators Joseph Lieberman (I., CT) and John Warner (R., VA). The bill also contains an unusual way to address concerns that a mandatory GHG cap-and-trade program will hurt the U.S. economy, Markowitz says.

The Lieberman-Warner bill would establish a Carbon Market Efficiency Board to control the supply of carbon credits in the marketplace. The board would also be allowed to increase the emissions "cap" to ease compliance costs if certain economic formulas are met, Markowitz says. "This is really innovative," he says.

The board would be modeled on the Federal Reserve and ensure that limits will not significantly harm the U.S. economy, according to the Lieberman-Warner bill. The bill would require facilities to reduce GHGs 15% below 2005 levels by 2020.

The bill says it would allow the board to take "appropriate" cost-relief measures, which are included in the legislation, if the board determines that the "emission allowance market established under this act poses a significant harm to the economy of the U.S."

Going forward, chemical companies will need to closely monitor how any U.S. legislation is crafted in terms of the allocation of GHG credits, Markowitz says.

ACC and the National Petrochemical and Refiners Association (NPRO; Washington) say that the bill would require too much of a GHG reduction too soon. Congress should enact "enabling policies," including expanded domestic natural gas supplies, government-sponsored R&D, and carbon capture and storage, in addition to other policies, says ACC president and CEO Jack Gerard.

Trading Game: A U.S. GHG program would alter industry alliances.



Testing protocols: The EU and North America are pushing separate efforts.

Gerard says the bill's emission-reduction schedule would cause "massive reductions in coal usage, and enormous increases in natural gas and renewable fuels usage."

NPRA and ACC also say the U.S. should not commit to GHG reductions until China and India commit to do likewise.

Those concerns are warranted, but waiting for everything to be defined globally is a good way to make any eventual mandates very expensive to meet, says Granger Morgan, head of the Department of Engineering and Public Policy at Carnegie Mellon (Pittsburgh). Waiting for global GHG reduction regime to emerge is "an algorithm to doing nothing for a long time," Morgan says.

Instead, federal agencies and private industry should cooperate on ways to sustain coal use for power generation, Morgan says. "The U.S. gets 51% of its electricity generation from coal, and I don't see any way to get an 80% reduction in overall GHG emissions without the continued use of coal," Morgan says. Continued use of coal would rely heavily on effective carbon capture and storage (CCS) technologies. CCS refers to the underground storage of carbon emissions, which involves compressing carbon dioxide (CO₂) and injecting it under geologic formations for storage that may last millions of years, according to the U.N.'s International Panel on Climate Change (IPCC; Geneva).



Markowitz: Track CO₂ data closely.



Morgan: Act now to retain use of coal.



Dellis: Complex labeling laws.



Gibson: Grappling with security, Reach.

In the U.S., federal agencies and the private sector should be laying the groundwork for facilitating carbon capture and storage, and other technologies that will be essential to keeping the price of GHG-reduction compliance down, Morgan says. "If you want to make emissions reduction expensive, you do it precipitously," he says. EPA recently announced that it is developing rules governing carbon sequestration, but that will not be enough to remedy the array of regulatory problem that are sure to emerge, he adds.

"A broader approach is needed," Morgan says. "The first serious problem is with respect to acquiring rights to the space underground to inject the carbon. One entity may own the surface land and another may own the minerals underneath. The mineral rights owner has the right to extract minerals, but that does not cover injection," says Morgan, who also chairs EPA's Science Advisory Board. There are also hurdles posed by state laws governing trespassing, and details to be worked out regarding insurance coverage.

Another sticking point is who will own the stored CO₂ over the long term, Morgan says. "The assumption is that it would have to revert to the government at some point because the government lasts longer than individual companies," he says. It should be set up in a way that avoids the legacy problems that occurred with Superfund cleanup obligations and asbestos personal injury cases, he adds.

None of the problems referenced are insurmountable, but officials and companies should be thinking about this now and not waiting for a global agreement to emerge, Morgan says. Federal agencies should do what they can to provide incentives for private industry investment to resolve some of the technological and regulatory problems, he says.

Industry's concerns about coal use in power generation may be valid, but waiting for China and India to agree to reduce their emissions is not a viable option, Morgan says. China currently emits about as much the U.S., but the U.S. has contributed more to global CO₂ concentrations, he says. Unlike pollutants such as sulfur dioxide that disperse relatively rapidly in the atmosphere, CO₂ molecules remain in the atmosphere for about 100 years, he adds. "If you painted every molecule the U.S. is responsible for blue, and every one China is responsible for was painted red, it would

be the mid-century before the red molecules caught up with the blue molecules," Morgan says.

Another U.S. regulation, the Department of Homeland Security's (DHS) chemical plant security law, has become an increasing source of uncertainty for compliance managers, sources say. DHS has indicated that the final "Appendix A" list of chemicals will be followed by 20 or 30 pages of additional guidance on how chemical mixtures will be regulated, and will clarify other outstanding issues, Allmond says.

The proposed Appendix A is a list of chemicals and their threshold amounts, but the 20 to 30 pages of guidance will be new to companies, Allmond says. "Our members are spring-loaded to comply," but companies are frustrated over delays in finalizing the rules, he says.