Episode Title: Let's Talk about Europe — A Conversation with Bjorn Hansen, Executive Director of ECHA
Episode Number: 45
Publication Date: November 12, 2020

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Lynn L. Bergeson (LLB): Hello, and welcome to All Things Chemical, a podcast produced by Bergeson & Campbell, a Washington, D.C., law firm focusing on chemical law, business, and litigation matters. I am Lynn Bergeson.

This week, my colleague, Dr. Jane Vergnes, and I sat down with Bjorn Hansen, executive director of the European Chemicals Agency, known as ECHA. As our listeners may know by now, ECHA is the European Union (EU) regulatory agency charged with managing the scientific, technical, and administrative aspects of chemical management programs in the EU. These include the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) regulation, the Classification, Labeling, and Packaging (CLP) regulation, the Biocide Product Regulation (BPR), Prior Informed Consent (PIC), and Substances of Very High Concern (SVHC). Bjorn leads approximately 600 employees, many of whom are located in Helsinki, Finland, where ECHA's offices are located. In addition to speaking about the imminent end of the transition period between the European Union and Great Britain under Brexit, which has been no small endeavor, as everyone knows, Bjorn discusses the very recent issuance of the EU Chemicals Strategy for Sustainability towards a Toxic-Free Environment. This is a brand new program as of October 14, 2020, and includes some 50 initiatives intended to complement the European Union Green Deal announced last December, under which the EU has committed to no net greenhouse gas emissions by 2050. Now, here is my conversation with Bjorn Hansen.

LLB: Bjorn, thank you so much for being with us today. I know you're speaking to us from your home in Germany, and we very much appreciate the opportunity. I'm joined today in the studio by my colleague, Dr. Jane Vergnes, who is our Director of Toxicology, and Vice President of The Acta Group (Acta®), and its Director of Toxicology as well. So, Jane, why don't you say hi so our listeners can appreciate you are also in this podcast.

Jane S. Vergnes (JSV): Good afternoon, Bjorn. It's great to be with you this afternoon.

Bjorn Hansen (BH): Good afternoon, Lynn and Jane. I'm also very, very happy to be here, and I'm looking forward to the conversation that we're going to have.

LLB: You are exceedingly busy these days, not only with the European Chemicals Agency's work, and you're spearheading a variety of high-profile initiatives, one of which is very new, including the European Commission's Chemicals Strategy for Sustainability, which was released October 14, just a few days ago. The strategy, based on my quick review, lays out some 50 initiatives, all of which are to be completed by 2024. I'm wondering if you could let our listeners know a little bit about the European Green Deal and how the Chemicals Strategy relates to the European Green Deal?

BH: Absolutely. I'd be very happy to. But before laying this out, I think it's good if I just spend one minute explaining which angle I take. Working in the European Chemicals Agency, our mandate is basically scientific and technical. We take a few decisions, but our competencies are in that sense very restrictive compared to, for example, the U.S. Environmental Protection Agency (EPA). Therefore, when I look at what policy people do, I don't really have an opinion on it, but what I do try to do is I try to interpret what this means because I've got to steer this agency to be ready to do what I think the policymakers want us to do in the future. That's the framing of the story that I'll tell you, what I think policy wants, and therefore I can explain how I think we as an agency fit into that picture.

In terms of the European Green Deal, I think its overriding main objective -- but it has quite a few other ones -- is climate neutrality by 2050. What the Commission has already recognized is that this means a very deep transition of the European manufacturing industry, including the chemicals industry, in order to match climate neutrality over the next 30 years. If you look at the chemicals industry, if not *the*, then it's *one* of the most energy-consuming industries in Europe and probably anywhere else. Therefore, if you want to meet climate neutrality, then just tweaking on the supply side, meaning you're greening the energy side, is not enough. You've also got to change the supply side, which basically means significant change in the chemicals we make.

Another part of the Green Deal is a circular economy. We want to be circular in the future in Europe. Hardly any material is circular today, and all materials are made of chemicals. This means we need new materials, so we need new chemicals to become circular. That fits together with climate neutrality, which requires other chemicals to be made with lower energies than we're used to today in order to reduce the supply side. On top of that, then comes what you see in the Chemicals Strategy. What I see there is a strengthening of our protection in Europe.

You have it in the zero-pollution agenda or aim, which is outside -- but the Chemicals Strategy contributes to it -- which basically says that if chemicals are emitted into the environment without intention, then they should still degrade so that they don't remain in the environment and damage it. On top of that, and that's the Chemicals Strategy angle, it says we should try to consolidate the way we regulate chemicals and raise the level of protection to feed into a circular economy, but also overall better ecosystem maintenance.

LLB: Excellent. Well, that background, Bjorn, is super helpful and demonstrates the interdependence of not just meeting a metric under the European Green Deal, but how the Chemicals Strategy is so important in achieving that goal and how chemicals contribute to the need for carbon neutrality, and also how the need to source chemicals that meet the challenges of the future is a very important metric and a very important goal of both the Strategy and the European Green Deal.

Bjorn, I listened to your remarks at the recent Chemical Watch program and was impressed by your optimism in achieving the very impressive goal of no net emission of greenhouse

gases by 2050. And what struck me also is the passion that I heard in your voice regarding the need for innovation in the chemical sector, which, of course, is the sector where I spend most of my waking hours here in Washington, D.C. I think we here in the United States similarly believe chemical innovation is absolutely essential to sustainability.

But given our new law, the Lautenberg Act passed in 2016, there's been a lot of focus on the need for innovation and a lot of lack of clarity on how exactly sustainability, innovation, and regulatory governance intersect with one another.

So with that as background, what can you tell our listeners who are chemical innovators regarding how new chemicals are introduced into European commerce under REACH? Is there anything that you can share with our community here in the United States on how that process is going, given some of the strictures under the REACH program?

BH: Yes, REACH is a very good example, and we have documentary evidence that it stimulates innovation. It, of course, does it from the stick side; it's not the carrot side.

LLB: Right.

BH: If you look at the deep transition that we would need in Europe to meet the objectives of 2050, you definitely need to work on the carrot side, too. I just didn't want to leave that unsaid.

LLB: Absolutely.

BH: On the stick side, what a piece of regulation like REACH does -- I say it does two very explicit things. One is it sets very clear criteria for which chemicals we believe in Europe are chemicals we do not want in society. It sets up a rather burdensome, purposefully so, system to tease out which uses are absolutely essential for society and, hence, which ones are not. So that's the one thing it does. It sets a very clear goal where we want to go. The other thing is it does reverse the burden of proof. It does put a burden on industry to demonstrate that substances are safe, and it does that across the board. What that means is that you cannot any more have laggards who basically take advantage of the fact that they don't do anything, thereby don't induce cost and thereby can sell their chemical cheaper.

Now they have to meet a minimum standard. They have to pay their price of it; they all have to pay their share of the safety level. It actually internalizes the cost of safety into the price of the chemical. Of course, it raises the price, but it gets the laggards; it pushes them from behind.

I think those are two of the main things that REACH provides, that in our world of a Green Deal objective, we can build on those lessons to find out what chemicals we want in 2050 and how to get there.

LLB: My colleague Dr. Vergnes will be quizzing you a bit more on some of the REACH and Brexit aspects of all of the programs that you are running these days. Let me focus on one point in particular. One of the key components, as I understand it, of the Chemicals Strategy is the commitment to transitioning to, and this is a quote, "safe and sustainable by design approach," close quote. We have something similar here in the United States on wanting to embrace chemicals from the beginning, from the concept of a chemical molecule, to ensure that they are sustainable at all phases of a product's life cycle. Could you elaborate on what

this approach means in your jurisdiction and let our listeners know exactly what chemical innovators need to be aware of with regard to "sustainable by design"?

BH: I think what is meant by "sustainable by design," when I look at it from our competence angle, it does go beyond what a number of U.S. iconic professors or industry people have crowned as green chemistry. What we would be looking at is that we need to have chemicals which are -- again, looking at the demands coming from these policy documents of the Commission -- to start with, they need to be circular.

Circularity means that you're able to either extract the molecules from the material and reuse them or use the material source from waste as the raw material that today is either oil mining -- crude mining materials -- or biobased inputs to being waste streams, or you need a material that really is circular. Today, the only materials we've got which are as material really circular, are certain metals and certain alloys, but everything else, there is no plastic that's circular today.

That's one conditionality which really is put on the molecule that needs to be designed, that it has to be designed in a way that at recycling high-tech -- because all recycling in future is going to be very high tech -- it'll be very similar to chemical manufacturing today, so that you actually can recover the molecule or the total material.

That's one illustration of going beyond the green chemistry principles, which I think are fantastic. They came out very timely many years ago, and we're setting the clear direction of where chemistry should go. I think that's one illustration of what is meant. Let's design the molecules so that they're circular, they use little energy, and they don't cause harm.

LLB: Speaking of the pillars of the European Green Deal -- promoting circular materials, consuming less energy, and raising the level of protection to ensure human health and the environment, and the safety of chemicals in general -- I have a specific question regarding how you will give expression to these principles in administering the programs as you lead at ECHA. One question in particular is derivative of a comment you made a bit ago, and that is reversing the burden of proof. Under our law here in the United States, under TSCA, chemical innovators now wishing to introduce chemicals to commerce have the burden similarly of demonstrating that the products they wish to introduce pose no unreasonable risk. That's a very important shift in the law here in the United States.

One aspect of the program that I think chemical innovators would have appreciated and perhaps will see more in this regard as the program matures, is specific incentives for chemicals that by design are more sustainable and very much a part of a circular economy. Do any incentives exist structurally under the REACH program to elicit broad support for chemicals that are more sustainable, require less energy to produce, require less energy to process, for example? Incentives like that are very important in the commercial sector and might hasten the shift to a more sustainable economy.

BH: Thanks, Lynn. I would say that the current REACH system definitely doesn't address the energy angle to any significant part; it doesn't address the circularity angle. If we were to include those two angles -- which is perfectly possible, it's not a big deal methodologically -- it is to develop the methodologies, but once they're developed, to introduce them, it's not complex legally speaking, nor for us to do so. I also think we have some ideas to get there. On the health side, that's where we clearly have incentives. I would say that, thanks to the strength of the legislation and the clarity of the legislation that we don't want, for example, persistent, bioaccumulative, and toxic (PBT) chemicals in products. We don't want

endocrine disruptors in products. We don't want carcinogens, mutagens, reproductive toxins.

It sends a very strong signal to industry that once a substance is identified with one of those properties, industry actually is very proactive in pulling out of a lot of uses of those chemicals. With our legislation, even though I find that it goes relatively fast, by the time the Commission or the Union adopts legal banning, very often industry has withdrawn from it, basically because they know as soon as you're identified, this ban will come.

I think that is one example of how REACH functions that makes it very clear what will happen once your substance has a certain property, and that creates certainty, but it also creates protection.

LLB: And certainly incentivizes a certain course of conduct in the commercial space with regard to products that have been identified as not long for this commercial world, right?

BH: Absolutely. I mean, that clarity indeed incentivizes, and it also pushes innovation. We have a lot of evidence that that level of clarity, that's what you need. That's where people then say, "Okay, I can convince my board in my company that I need to spend some research and development (R&D) money to find a different chemical, because at some point we're going to get banned, and then we have to switch quick. So let's switch slow; let's be at the forefront of the way. Let's actually have the alternative that we can sell and make a market advantage." That is how the machinery is intended to work, and actually we have some evidence that it works in that direction.

LLB: Excellent. Dr. Vergnes heads up our REACH program, which has commanded much of her waking hours for the last decade. Jane, why don't you jump into some of our Brexit-related questions?

JSV: Before we jump into Brexit, I'd really like to continue a little bit, on a slightly more technical level, the discussion that we've been having, specifically about authorizations and how they have been progressing and whether as part of the initiatives and the regulatory structure that we've just been discussing, where, as you've noted, as soon as a substance is identified or designated as a substance of very high concern, and it is on this pathway to either authorization and restriction, for those uses, where authorizations have been submitted and where time-bound deadlines for substitution have been implemented. What has been your experience? What is the experience of the program for making these substitutions within the timeframes that are established under the given authorizations? Are there technologies that are valuable enough to be supported under an authorization where we face real scientific and technical challenges with their substitution?

BH: I'd say absolutely. We see both sides. Sometimes it works, the substitution; sometimes it doesn't. Authorization as a system, we have to recognize it's the first of its kind. In Europe, the only authorization systems we've had before this was on plant protection products, on biocides, on pharmaceuticals, or GMOs, it's all within systems where the use is fixed. Then you check within a fixed use whether any chemical can fit into what you want out of that fixed use. There you spend ten years gathering information and experience, and then after about ten years, the machinery runs reasonably well. That's if I look back 30 years, how the various systems were set up and run.

Here we're saying, "Take any industrial chemical, any use, and make an authorization system out of it." We're still in the phase of learning, and there's a lot to be improved, but

that being said, I definitely have seen -- in our chromium authorization systems, you've definitely seen -- it's spurred innovation. There have been other types of plating applications or uses, which have come up and have been taken over by the previous old-fashioned chromium plating uses. You also have others where it hasn't at all: the chromium plating for aircraft safety, basically, they got their authorization in the end very clearly because it takes years and years to change the safety standard for the aircraft needed. But there are many other places where alternatives came up and actually took over. Maybe the best indicator that we have is that in the end, we only received applications for half of the substances on the authorization list, which meant for the other half, when we put them on the authorization list, there were plenty of uses. But after we had done that and gave them the time to adjust, which is up to the sunset date, they (in quotation marks) "disappeared," but that was the *uses* of that substance disappeared. And there were alternatives that came in on the market. I think authorization has shown that it does promote innovation; it can do it even better if we manage to simplify it, and there I'm sure we can.

JSV: But one aspect of authorization, having been through this process that I've found challenging but also rather impressive, is that it does require -- it really demands -- that the submitter of the authorization dig very deep and make a concerted effort, an effort that probably goes beyond what it would usually go forward with, to look at what are other options that could be more benign in terms of potential effects on human health and the environment, as opposed to the current substance. I think in that respect, the authorization process, which is extremely challenging, does feed into this overall concept and the new Chemicals Strategy, so thank you for that.

I would like to switch, and again, I have been involved in assisting U.S. companies with REACH compliance since the REACH legislation came into effect over a decade ago. Now I'd like to switch to Brexit. Undoubtedly, Brexit has commanded a lot of your time and attention over the past several years. What are your thoughts regarding how the separation is going, now that the transition period is nearing its end? It will end at the end of this year.

BH: Again, the division of responsibilities is we do whatever the bosses say, and the bosses are the policy masters in Brussels. They are the ones negotiating with the Brits, and they'll get an agreement or not. My job and my role in this is to be sure that we and the agency are ready in the case that there is a hard Brexit. Basically, we need to be able to implement a no-deal Brexit or the UK minus Northern Ireland, and we have to be ready for implementing the Northern Ireland protocol. And we are. In that sense, it was nice for us that there was a continuous extension or delay of Brexit. We were ready the first time around, but we keep checking, rechecking, and everything is ready to at least implement what the political masters have said. What is absolutely clear is that it will have an impact; that's clear.

LLB: That's for sure.

BH: When we look at the activity, we have lots of questions and answers to industry about what are their obligations, should there be a no-deal Brexit vis-à-vis the UK, but also UK companies. What do they want to do if they want to maintain a market in the EU 27? We've guided many companies to establish EU 27 subsidiaries, which is not just a mailbox. They need people; they need to pay taxes. It's a real thing, and a lot have done that, which shows that the market was -- let me finish off by saying I, of course, only see this from the chemical manufacturing bit and to a certain extent, the mixtures that go back and forth, but all the articles, the car pieces and things that REACH doesn't in itself regulate that deeply. Therefore, the no-deal Brexit will have an impact that I would not be observing at the

moment, but at the chemical manufacturing bit, a tail of it, there's clearly going to be an impact.

And there are a lot of UK companies that have opened up subsidiaries in Europe in order to continue marketing to the EU 27.

JSV: One of the things that we have been reading consistently, and the guidance that the European Chemicals Agency has provided, particularly since the United Kingdom invoked Article 50 of the Lisbon Treaty, officially announcing its departure, which occurred on March 29, 2019, so basically for those substances that were registered by UK manufacturers, importers, or Only Representatives, it still sounds as if under no-deal conditions, there's going to be a very abrupt separation. Either those manufacturers, importers, Only Representatives that originally submitted registrations through entities in the United Kingdom -- or let's say Great Britain now, again, because of the Northern Ireland protocol. Let's say that the initial REACH registrations were submitted by those entities in Great Britain. It's my understanding that if those entities have not transferred their registrations, if they have not registered those substances through a legal entity that is a full-on legal entity within the European Economic Area (EEA) that basically those registrations, like Cinderella's coach, disappear at midnight on December 31. Is that a correct understanding?

BH: Absolutely. They need to establish themselves within the EU 27 ([European Economic Area] EEA, as you say) because of the agreement we have with EEA countries, and then transfer -- that's the technical term -- transfer the registration to this new entity. What we keep track of is not so much how many UK registrants are there; what we keep track of is which substances might there be a problem with on the EU 27 market. We don't keep track the other way around. Those are the substances where there's a single UK registrant only; it's not registered by anybody else. Of those, half of them have already been registered, have had an EU 27 registrant that has taken up that registration. At least half of those chemicals we're sure will be available in the EU 27 market, but if the other half doesn't transfer, then those substances won't be available in the EU 27. Given the balance of quantities, of course, it's a lot more the other way around.

JSV: To that point, if there were to be a deal, have there been any discussions about providing to the Health and Safety Executive (HSE) information or transferring or copying of dossiers that are in the REACH system, that are basically under ECHA's control at this point? Or is it really that the United Kingdom -- or Great Britain at this point -- must start fresh and basically when it activates its UK REACH-IT system on January 1, 2021, it will really be up to whatever the HSE has in its historical records? Those UK entities that wish to register, it will be totally on them to create the record or to provide evidence that at one point their substance was registered under EU REACH through a UK legal entity?

BH: Yes, but let me just explain that basically all the chemicals laws that we implement in ECHA, but it's also the other ones, very many of them require the submission of information. But when a company submits information under one law, it's only allowed to be used under that law unless explicitly told otherwise. Therefore, REACH data that we hold can only be used for implementing REACH. It's not REACH in its name; it's REACH in the law. That's also why we're not able to share the data with the United States or with anybody else, the Swiss, simply because they don't implement REACH. REACH is the European law, overseen by the European Court of [Justice], and that's the system within which the data can be used. Therefore, as long as the UK does not implement the European REACH, we, as an agency, cannot share that data. This implies then what you were saying

that whatever law you can think of -- it might be called REACH UK or something like that -- but it's not REACH. They can't get the data from us; they have to talk to their industry to get their data for making that work.

JSV: Understood. Thank you.

LLB: Great discussion on those points, Jane and Bjorn, and good segue to a broader question that I think I heard referenced when I listened to your remarks, Bjorn, during the Chemical Watch program. That related to one of your colleagues at ECHA at Directorate General (DG) Environment, who noted that REACH, as a European Union law, quote unquote, "most likely will be reopened to bind into legislation some of the initiatives the European Commission has set out under the new Chemicals Strategy." Is that a fair statement? Do you envision overseeing that type of legislative reopening? And might it be limited to REACH, or a follow-on question is, might there be other legislative reopenings under the Biocides Directive, for example, or some of the other programs that you manage at ECHA to accomplish the goals of the new Chemicals Strategy? What's in your future there, Bjorn?

BH: If I simply look at it from observing EU legislation for the last 30 years that I've been working in different jobs, but all some way related to the EU chemicals legislation, then you see that it's very normal that legislation is revised, and revised in the sense of reopening. What we in Europe mean with reopening is that the piece of legislation goes through the regular legislative procedure. This means through the Council-Parliament procedure, not our simplified, what we call "comitology" in technical terms, which effectively is the Commission together with the Committee deciding. It's very normal that every ten years, every 15 years, the legislation is relooked at, simply because life goes on, we learn, and it makes sense. If you look at REACH itself, it's 15 years old.

LLB: It's time.

BH: Looking at how much has changed in 15 years, it's not abnormal. If I look at ECHA, we have one big wish and one small wish, which both require something happening in the legal text itself.

One is more administrative, which -- I'm not going to bore you with the details -- but most agencies have a regulation that is called the founding regulations of the agency, which describes how it works. It creates somewhat more flexibility having that, in taking over tasks from all sorts of other pieces of legislation. Right now, we implement five regulations and two directives, each of them within a separate frame. And this is a technical thing, but it would make our life administratively so much easier, so that's one thing that we would like. The Commission says it will do it, and that requires reopening of REACH.

The other one is that if a company is not compliant with one of our decisions requiring data, we think that we should be able to withdraw the registration numbers, so basically forbid the company from being on the market. That would be a very quick and easy way when companies refuse to generate the data that we require. Right now, it goes through many years of simply procedure and postponement while the companies have mass market access. If I look at a lot of the proposals that the Commission has put forward, some of them would indeed require substantial parts of the regulation to be amended. I don't see that it's a complete rewriting. There is a problem here and a problem there. Let's go in and find the best solution for it.

LLB: I know Jane and I are probably thinking the same thing regarding the need periodically, and perhaps more regularly than we here in the United States do, to undertake kind of a strategic do-over of chemicals legislation, in particular, to mark the inauguration of new technologies, changes in public sentiment regarding how chemicals and human behavior interact with one another. It took us 40 years to modify our Toxic Substances Control Act, which I mentioned was just fairly recently enacted in 2016, and we're going through regulatory initiatives now implementing it. So having a redo on REACH, which is a much younger statute, is a refreshing way of looking at legislative accommodations. So, Jane, let me turn the microphone over to you to talk a little bit more about some of the Chemicals Strategy initiatives that we would like Bjorn to speak to.

JSV: We've already talked about how you view the Chemicals Strategy and how it interfaces with other aspects of REACH. I'd like to move on to an extension of what we've just been talking about. Some of that is the challenges that are faced anytime, anywhere. I think our experience with REACH has been both based upon where we were, all across the board, when this legislation was originally passed, and where we are now. There has been an incredible evolution. One of the challenges -- and this was probably the most challenging in meeting the 2018 deadline -- is the number of substances that are extremely complex, where we got caught in this space where, although ECHA has all of the information and the expertise to be able to look at substances and decide if we have enough information about the substance -- both from an analytical point of view and from a process point of view -- do we have enough information to make a decision about whether some of these requirements of REACH, such as one substance, one registration, how do we determine whether these two are the same?

From my view, ECHA has the knowledge and the resources and the information to be able to make those determinations. In a sense, it does guide that process, subject to an inquiry, for example. Please correct me if I'm wrong, but it seems that, bottom line, ECHA doesn't have the authority to enforce that or to make these final decisions, to basically say these two substances are the same. Get together, make this happen, form a single joint submission; or alternatively, no, different. If you want to be in the market, go get the data and then come back and talk to us.

BH: Very interesting point. It brings me back to the design phase of REACH, where the competence or the ability for us to tell industry what is their substance, telling them, "You've got the definition wrong. It should be like this and this. Go and register it like that." Heavily discussed in the whole beginning of REACH. We came down on the side that, no, that's industry's responsibility, not ECHA's. ECHA's responsibility is to ensure that the data is there and that action is taken when there's a risk. It basically boils down to the application of the reversal of burden of proof.

Where do you actually reverse the burden of proof, and when does the burden of proof need to go on authority when taking its decision? Here, with substance identity, it was basically said that was why it is the way it is. We said, well, industry knows their substances; they do know them a lot better than we do. And they should sit down and figure out what is their substance. And the broader they define their substance, the higher the risk they, of course, take that they need more data to show that it's safe. But then again, it also means that they have more flexibility within that breadth to produce their substance. So in a sense, there are powers or pressures that go both ways for them to meet and define their substance correctly.

When I look back at what has happened the last 15 years, I think it worked out pretty well, in terms of the substance identification (ID). I do completely agree with you that there are a

lot of substances which are very difficult to identify. Normally for the layman, when you talk chemicals, they think of their junior high school or high school chemistry, things that you draw on the graph, but some of my favorite substances which are registered under REACH, you take the solid that is left over from a wastewater treatment plant, you dry it, you incinerate it, and the bottom ash of that is a substance in REACH. There are some very awkward substances, and two-thirds of the substances in REACH are not well-defined substances or single molecules.

This provides a lot of challenges, but we have to meet them. These are the substances in meeting the challenges where we are working with industry and trying to understand, "Why did you define your substance the way you did? You are the ones who define this. We then check whether you actually collected all the data that you needed to prove that that substance that you've defined is safe."

JSV: Thank you. That's very helpful. If I heard you correctly, you said about two-thirds of substances are not well defined. Do you mean they're not well defined single substances? Or are you talking about both substances that have perhaps multiple constituents, as well as those that have been defined as unknown or variable composition, complex reaction products or of biological materials (UVCB) substances?

BH: It's on the order of one-third is predominantly one molecule. Then you have one-third which is a mixture, with varying degrees of compositions. Then you have one-third, which are what we call UVCBs, which basically means you do know what's in it, but it's a very broad range of chemicals. The standard ones that we use are petroleum streams, which have thousands of varying hydrocarbons in them, but other ones are fly ash, or the one that I mentioned before, this burning of the sewage sludge after it's been dried at 100 degrees.

LLB: Bjorn, you've touched upon a whole host of topics, and you speak so eloquently on each of them. We'd just love to have you back in about six months to give us a progress report on ECHA's work in implementing the Chemicals Strategy for Sustainability. I'm sure our colleagues here in the United States at EPA will be watching it closely because it aligns so well with many of our new foundational principles under our revised Toxic Substances Control Act in a very big way. Recognizing that our listeners will undoubtedly seek more information, might you direct us to where we can find more information on each of these initiatives?

BH: Absolutely. And thanks, Lynn, for wanting me back. I would love to come back. Absolutely.

LLB: I wish we had all day.

BH: I've enjoyed seeing you, and not just listening to you, again, and also to you, Jane. It has been absolutely great. Where to look? Well, Chemicals Strategy, that is the Commission's strategy, so the Commission is the main place to look at activity. I'm sure that over the next month, the Commission will be asking us to do specific things under the Strategy. As they ask us to do things, you can look at our website. In terms of what's happening on the implementation of current legislation, so REACH classification and labeling, implementation of the Rotterdam-Stockholm convention that we do. Also we're setting up a waste database to support waste legislation. That's all on our website, and I think reasonably accessible, if you know the topic that you want. I'd suggest look at the Commission's, in particular, Directorate General for the Environment, website for the Chemicals Strategy implementation, and look at our website for anything that has to do with chemicals legislation implementation.

LLB: Excellent. Bjorn, Jane and I want to thank you once again for joining us today, and on behalf of all of our listeners, thank you for being with us. We really appreciate it.

BH: It was a great pleasure. Thank you ever so much.

LLB: Our thanks again to Bjorn Hansen for speaking with Jane and me today about the European Green Deal, the Chemicals Strategy for Sustainability, and of course, Brexit. I wish we had all day, as there is so much going on in the European Union today.

All Things Chemical™ is produced by Jackson Bierfeldt at Bierfeldt Audio LLC.