

PANELISTS DEBATE

Friedbert Pflüger, Director of the European Cluster for Climate, Energy and Resource Security (EUCERS) at the University of Bonn, Founding Partner of Strategic Minds Company GmbH

We have strong established players and new players, and I think that gives me more optimism than on the energy front for the time being. Philippe, you want to comment.

Philippe Chalmin, Founder of Cercle CycloPe, Professor at Paris-Dauphine University, Consultant for various International Organisations (OECD, EEC, UNCTAD)

I just wanted to comment because we have focused a bit on strategic raw materials for energy transition, etc., and what is being said about phosphate is pretty important. It is clear that among all the materials necessary for the future of humankind there is one for which there is no substitute. At some point, you can substitute one metal with another, I can substitute cobalt a bit with nickel, etc., sometimes. However, if there is one product that cannot be substituted and that you need for crops to develop it is phosphate, so phosphate is very important. For the moment, I had not considered it as such a dangerously strategic material because we have a chance with a good part of phosphate reserves and the first and biggest producer of phosphate is a fairly friendly country, Morocco. For the moment, we do not have too much of a problem but as far as fertilizers are concerned, while I am not concerned about phosphate I am concerned about ammonia, so natural gas. A final one is potash, which in Europe comes from two very nice countries, Russia and Belarus. Do not forget fertilizers, which are not a high technology industry but that are necessary for us and for 10 billion people to be able to eat by the end of the century.

Friedbert Pflüger

Philippe, as far as I understood, Ingvil just said that they had found big deposits of phosphate in particular in Norway. Could you tell us how much it is and what would be very interesting, when production could come online? Do you have a timetable from finding to production, so when can the EU and others benefit from what you are doing there?

Ingvil Smines Tybring-Gjedde, Non-Executive Director at Norge Mining, former State Secretary for the Ministry of Petroleum and Energy of Norway

Thank you very much for the question, that is why we are so happy for the collaboration and the work that Peter and his people are doing. They are pushing not only the EU but also the Norwegian government to have the licenses, patents, etc., that need to come together to do this as soon as possible. For our concern, it is only the governmental issues and the authorities that are prolonging that phase, but it has to be done by the steps that are needed to do it in a sustainable way. When it comes to sustainable issues, I really support the arguments that we



do not want a mining industry in Europe. However, what is very good in our findings is that there are approximately 70 billion tons of phosphate and vanadium, quite huge resources in open-pit mines, is that we have very educated people. It is down South in Norway, so we do not have the Sami issues and it is also found in a region where the oil and gas industry are highly developed, just outside Stavanger, which is the oil and gas capital of Norway. The stakeholder engagement and contribution to this is very good and we have an excellent infrastructure around the findings with very deep-sea harbors. There is also an abundance of renewable energy in Norway. We know that there will be a future decrease, and I have to say not now so we do not make another issue about Norway not being a provider of gas to Europe. Therefore, Norwegian politicians from both Left and Right are all very supportive of this project because they need the job creation and the development of new industries, and the mining industry could be a part of that. The stakeholders and politicians, both national and regional, are very supportive and that is also thanks to Peter and his people.

Friedbert Pflüger

Jonathan, you asked for the floor, but I just want to take up that remark from Ingvil. Obviously, there is a consciousness and a willingness of the population in Norway that mining in Europe is necessary again. They support it there and the areas are not heavily populated. What is it like in other countries in the world and do you see change in attitude when it comes to mining in Europe, or is there still a lot of resistance to new projects? Please, make your point too.

Jonathan Cordero, Head of Corporate Development at Eurasian Resources Group

I have two points and I am happy to answer the question about the acceptability of mining as an industry in the developed markets, but I would also like to make a couple of points on the timing of project development. With regard to the acceptability of the industry, the whole concept of ESG is not news to our industry. Mining has been doing for decades what is now subsidized and that is now a term that has developed over five to 10 years. We have always had interactions with host communities and an understanding of our responsibilities towards the people, the communities and the environment, and we called it a social license to operate. The engagement that needs to happen before building a mine has always been at the core of mining companies themselves. It needs to happen, it is a very actively managed process that needs to be institutionalized for the various companies. The engagement process is something very important and, personally, I would not want a mine in the backyard of my house, but I think a lot of education is needed. I do not think there is a full understanding that the transition to the low-carbon economy will not happen without mines, so the educational piece. Then when it comes to building a mine, the discussions with authorities, licensors and the host countries is important, but it is equally important to interact with the surrounding communities and start that process very early on before you set the first drill rig.

Coming back a bit to the timing and your question about how quickly Ingvil will be producing. Depending on the commodity, it takes 10 to 15 years to build a mine and that is not all bureaucracy and licensing, that is just a minor piece of it, is just that very diligent work needs to go into building an economic mine. There are a lot of studies and work, with a lot of people involved in bringing it online and it is sometimes billions of dollars in investment. We are building an iron ore project in Brazil at the moment and the investment is close to USD 5 billion. Also,

you are not doing this to produce for three or five years, you are doing it with a horizon of a 30-year life for a mine. If you combine that, when we sit here together today, we need to take an investment decision for the next 50 years. Mining at its core is a very long-term business and we are very happy to subscribe to any standards at the time of the investment decision, but we also urge policymakers not to change the rules of the game after that time.

Philippe Chalmin

Thank you. Just to complete what you said, the biggest greenfield investment in copper is the Oyu Tolgoi mine in Mongolia. I remember it was decided at the end of the last century and it took them 15 years to develop the first phase and the second phase is not yet completed, so it is more or less 25 years later. The second point I wanted to stress is, of course, France is not exactly the center of the world, but there will not be any mining in France unfortunately. We had a project, not for a strategic metal but for gold in Guyana, where France has a small chunk of Latin America. The project was supposed to be a sustainable mine with all the precautions being taken in a country where the administration is very tough on that. This was the Montagne d'Or project in Guyana and, unfortunately, it could not proceed because of opposition mainly from green NGOs, especially WWF, which was shared in France by someone who is now the Chairman of the Environment Commission at the European parliament. That shows that you have to take the NIMBY, not in my backyard, idea at the size of a country and even a continent. Frankly, I am very doubtful of the capacity in Europe to develop new mining projects and I am happy to know that Norway could be an exception.

Friedbert Pflüger

Peter, we want to give that question to you. Can the EU do something, will it do something to speed up processes so that we do not have to wait 20 years given the current situation? Can it do something to raise the awareness that, for example, we need more mining for the green deal in Europe too?

Peter Handley, Head of the Energy-Intensive Industries and Raw Materials Unit in the European Commission's Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs

What we cannot do is speed up the technical side of getting projects up and running. As the two previous speakers have said, you actually have to work out the process models and the geology, and it takes time to build facilities. Where we do see huge scope for improvement is on speeding up the permitting processes. At the moment, in the European Union and I think probably also in Norway, these are too slow, too unpredictable, things get stuck and that is not the way to do it if you have projects of strategic importance. We are looking at best practices around the world and at how we can improve things here. We are talking to our environment and renewable energy experts. I do not know if you have noticed, but in the last few weeks we have proposed an emergency measure to accelerate the permitting of wind and solar projects because we absolutely need to ramp them up in order to achieve our decoupling from Russian fossil fuels faster than originally planned. We are going to look into speeding up the permitting for mines, extraction sites or new industrial facilities. It means creating a one-stop approach, the parallel running of different permitting processes, having strategic environmental

assessments before you start the specific projects. It means nominating a coordinator who makes sure that things do not get stuck but move forward expeditiously. It also means making sure that you take a good close look at the judicial system where appeals can get stuck for years unless they are treated as a priority. There has to be a much more conscious approach to dealing with delivering strategic projects without weakening environmental and social performance.

Friedbert Pflüger

We have three minutes left, which give you all 45 seconds. You have Mr. Raw Materials from the EU here, what is the one thing you would like the EU to do to support you? What exactly do you need? I will start with Ingvil, the politician.

Ingvil Smines Tybring-Gjedde

I am not now a politician, I stopped being that when I joined Norge Mining. I think the main topic here is to coordinate the process so that it is done much faster. We have done the identification phase and we are now into the selection phase so what we need is the coordination and, of course, a united world to the producers and demands for sustainable processes in the mining industry.

Jonathan Cordero

We are founding members of an association called The Global Battery Alliance together with the World Economic Forum, that also has 130 members from the public and the private space. We believe that cooperation between the various entities taking responsibility in our own hands, avoiding building parallel value chains and resource nationalism, and coming together in a joint effort in such a forum is the dominant strategy and we invite everyone to join our efforts.

Philippe Chalmin

Let us be positive. What is important is to be sustainable. With today's high prices we have the means to be sustainable. I listened to what Peter said and one of the problems is that in Europe we more or less continue to export our environmental problems and to think that others will produce, while closing our eyes to the conditions in the DRC, etc. With today's prices we might be able to develop new sustainable mines and, I would say, perhaps metallurgy in Europe. We have focused on mines but remember that the real bottleneck is very often on the metallurgical side. We did not talk about titanium, but the problem is not the minerals it is making titanium sponge, for example.

Friedbert Pflüger

Thank you so much. I think this was a great discussion. Thank you everyone. I would like to conclude with a quotation from Winston Churchill. In 1914, when he was First Lord of the Admiralty in Britain, he said, 'We have to change our whole fleet from coal to oil as we want to compete with the German navy.' The Labour party in parliament said then it was insane because we would then be dependent on countries like Persia, or today Azerbaijan, and we cannot accept that. Churchill went back to the microphone in the House of Commons and said, 'Well,



trust me, energy security is about diversity, diversity and diversity alone.' I think we can say exactly the same thing for critical raw materials, we have to look for diversity and, with the help of the EU and Peter, we will hopefully be able to achieve it. Thank you very much, ladies and gentlemen. All the best, and good luck to you with your projects.