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Jan-Olof Hedström

Bergmästare – Chief Mine Inspector

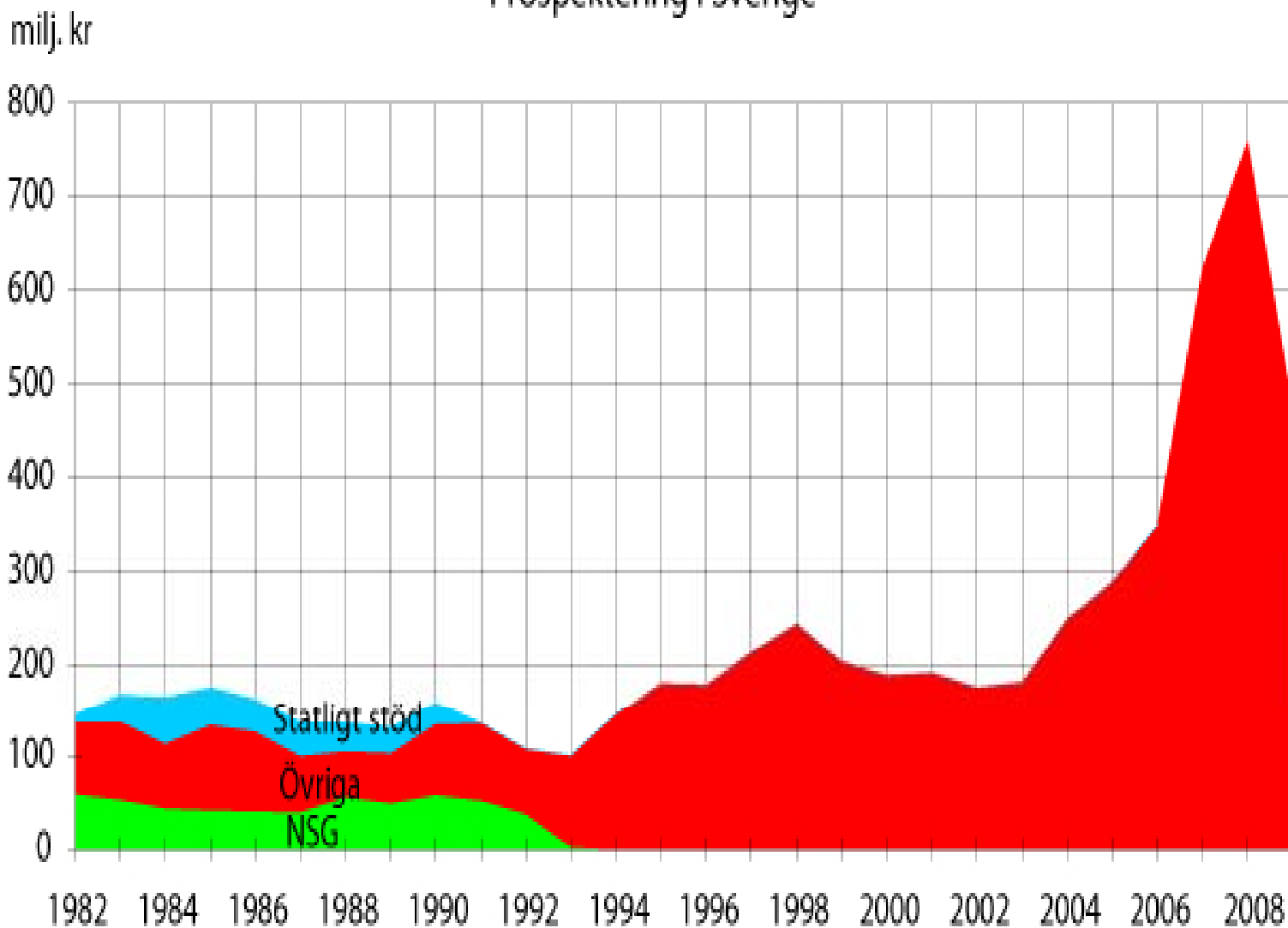


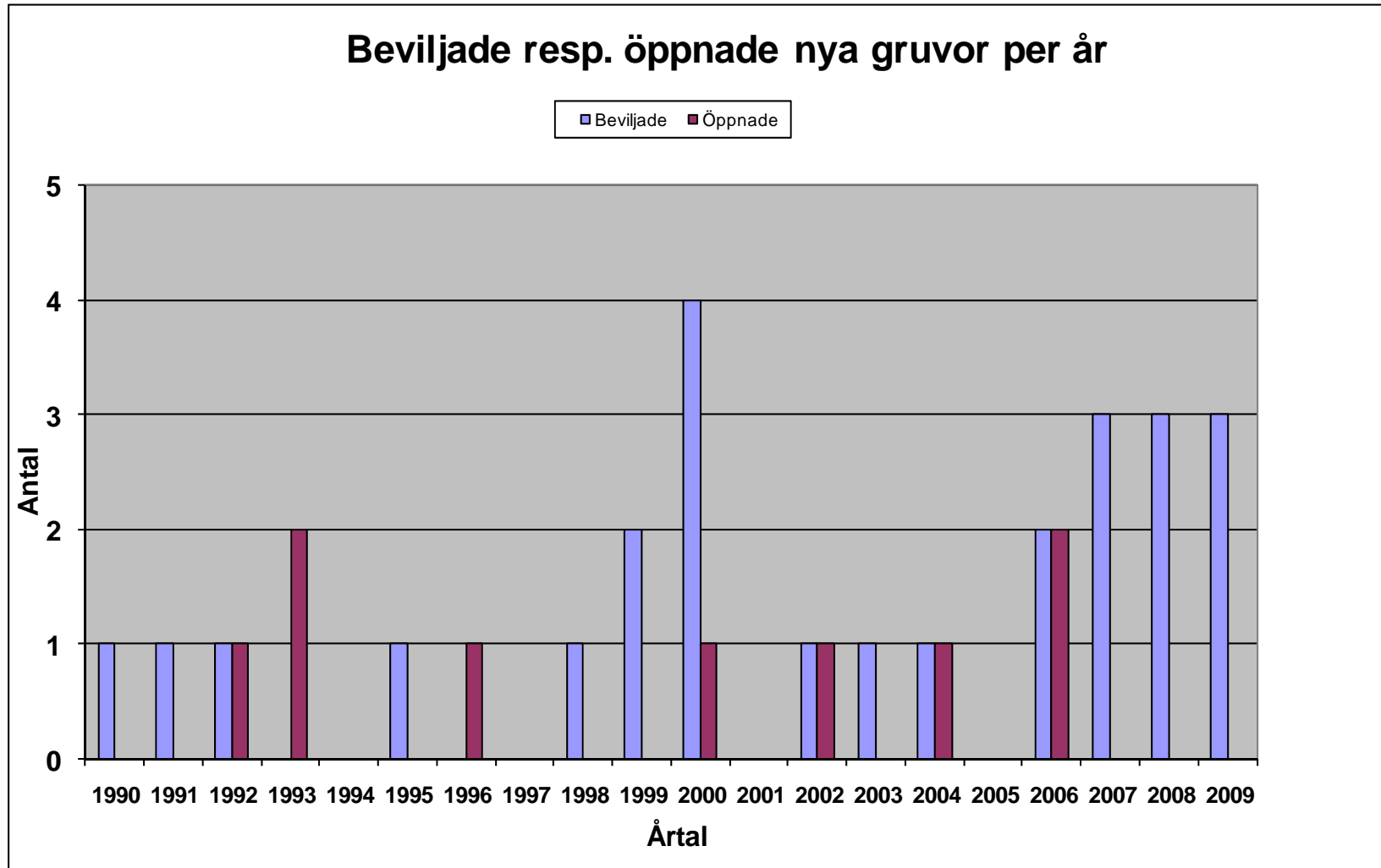
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Prospektering i Sverige







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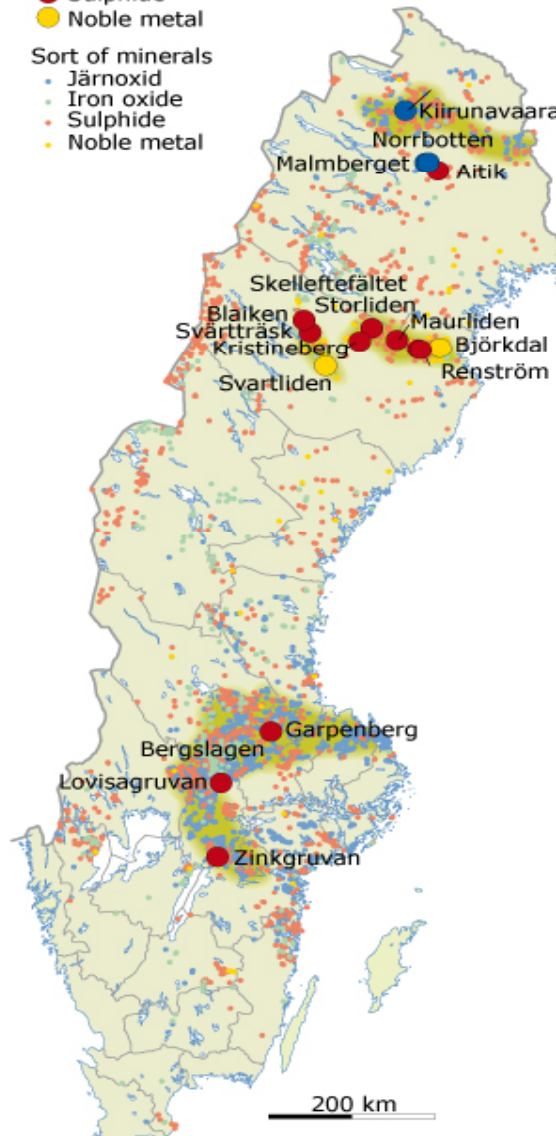
Mines and minerals of Sweden 2008

Mines in production

- Iron oxide
- Sulphide
- Noble metal

Sort of minerals

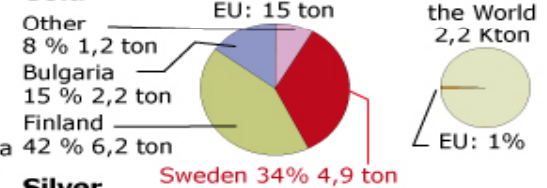
- Järnoxid
- Iron oxide
- Sulphide
- Noble metal



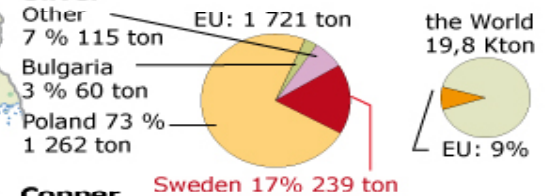
SGU
Sveriges geologiska undersökning

Mines production in Sweden 2008 in relation to EU27 and the World

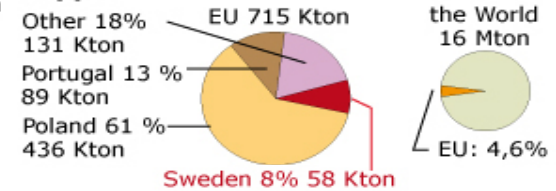
Gold



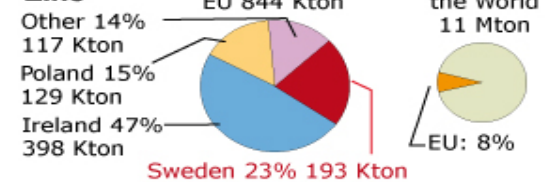
Silver



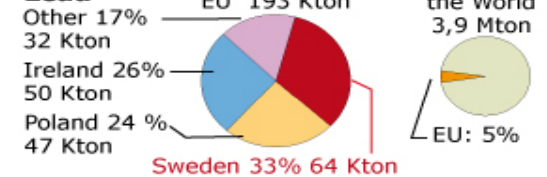
Copper



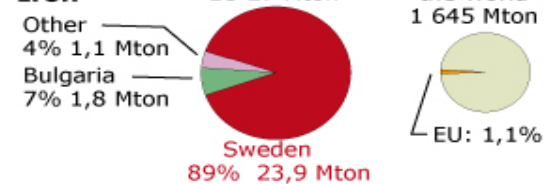
Zinc



Lead



Iron



Jan-Olof Hedström

Bergforsk, Kulturens Hus Luleå, 5th May 2010 14.30 – 15.00

Dear Friends!

The title of my talk is "Potential for mining in Sweden, experience and outlook"

My perspective is that of an inspector of mines, that is, the official who is responsible for issuing permits to the various mining operations from the north to the south. I am appointed by the Swedish Government as Chief Mine Inspector of Bergsstaten, the Mining Inspectorate of Sweden. Bergsstaten is itself a part of the Geological Survey of Sweden [SGU], but is an entirely independent part of the SGU when it comes to making decisions.

Everything we decide on goes to appeal if anyone is dissatisfied, either to court or to the Government. – At Bergsstaten we are not experts in Geology – that is the field of the Geological Survey. Rather our special fields are in the relations between mining companies and landowners as well as the rules that apply among the mining companies themselves. Consequently, the mining industry's relations with Parliament and the Government are of course something we are constantly engaged in.

For us it is the Minerals' Act that acts as the guideline. It is a modern Swedish law that addresses these very relations. But the Minerals' Act probably has another even more important purpose. The Minerals' Act aims to provide the mining industry with access to the area of land that the companies need to explore and start mines without having to obtain permission from the landowner in advance. It is the case in Sweden that exploration and mining operations represent a priority of national interest in the constitutional sense. In other words, this industry is not just the priority of the companies but the industry is also very important for the whole of society. To put it simply, mining operations and exploration are a public interest.

Since mining and exploration are supported by the Minerals' Act there are also some counter-demands upon the companies included in the legislation. These counter-demands deal with such things as the efficiency of the company's explorations, the company's responsibility towards society and towards people living in the neighbourhood and also ensuring that the company accepts competition on equal terms. In addition, exploration and mining must without exception comply with the environmental laws just like all other industries. Gone are the days when people didn't bother about the extent of the impact upon the environment after a mine was closed.

At the Mining Inspectorate we are very particular in ensuring that no breaches of the regulations occur. It should be difficult and expensive for companies that do not comply with the regulations.

The Chief Mine Inspector has responsibility for three main kinds of permit:

- Permits for companies who want to search for ore – the exploration permit
- Permits for those who have found ore and who consequently wish to open a new mine or wish to expand their existing mine – the exploitation concession
- And last but not least the mining company must also have permission for its land usage for the whole of its industrial area including mines, structures, deposits and conduits. The specific term for this is “designation of land”.

So now you know about my starting point for what I am about to talk about.

A brief summary of what I am intending to say is that – while Sweden has a really long history as a mining country – there now appears to be a fantastic period of development of the mining industry ahead of us in the future. The age of mining in Sweden has not ended, but rather we are perhaps at the start of a period of development that has only just begun and which will continue for a long time.

At the moment – in 2010 – there are in fact just as many completely new mines in the pipeline to get all permits needed as the entire number of mines which are currently in operation. A doubling of the number of active mines in Sweden therefore looks like becoming a realistic thought. I don't think there has ever been such growth in progress.

I can certainly mention a few examples of what is to come. I will not of course mention everything, just examples that demonstrate that a new era for mining is on the way. We will start in the north and then go southwards. The new development affects the whole of Sweden.

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1. LKAB has for a long time looked like being entirely satisfied with its two really large underground mines for mostly magnetite in Kiirunavaara and Malmberget. LKAB also made very large investments last years in concentrating plant, pelletizing plant and new main levels. But now the company has also decided that they will mine iron ore in an additional three mines, three open-pit mines in Kiruna. This is a break in the trend and worth noticing.
2. Pajala, which today is a municipality completely without mines, is set to become a proper mining municipality through the company Northland

Resources AB. The company is talking about three large open-pit mines for mining iron ore near Kaunisvaara. For the first mine The Mining Inspectorate has granted an exploitation concession and the company is hopeful that the detailed environmental conditions from the court will arrive soon. Northland has also applied for an additional exploitation concession for another large mine and is also planning to apply for a third. A lot remains to be done before these two also become a reality. And most of it depends on the company itself for fulfilling the requirements of the people involved and the environment. But it must be said that the municipality of Pajala is about to enter a new era.

3. Boliden Minerals' already very large Aitik copper mine is just this year completing a major expansion to double mining to 36 million tonnes ore per year. And at the same time they are appreciably intensifying explorations to find more ore.
4. At the moment there are no nickel mines in Sweden, but the company IGE Nordic AB has in February this year submitted an application for an exploitation concession for Rönnbäcken in the municipality of Storuman, near the mountain region. In their application they have said they intend to mine 20 million tonnes of ore per year. I cannot of course say anything about how the Chief Mine Inspector will decide as there is a thorough inspection in progress at the moment to see whether the company has done what is required with regard to protection of the environment. But this is another example of a pioneering new operation.
5. Lappland Goldminers AB is just about to complete all of the preparations to start its Fäboliden goldmine in the municipality of Lycksele. The mine has been in the process of preparing for a few years now. All important permits have been granted and the land purchase is in progress. To begin with there will be one large open-cast mine. There are at least 35 tonnes of pure gold in the bedrock there.
6. Among the up-and-coming pioneering new mines I must also mention Dannemora in Uppland, the eastern part of the old Bergslagen ore-field. Iron ore has been mined here from the 1200s until 1992. In the mine there is still as much ore as they mined for 700 years, at least 25 million tonnes. And the mine will start once again in a couple of years. They have all the permits needed.

These are a small selection from the new mines that are in the pipeline. I could also mention further examples.

There is a saying that says that he who seeks finds. Maybe that does not mean that you will immediately find what you are looking for. Surely it instead means that only someone who seeks well and purposefully will find what he seeks. And

prospecting is to seek purposefully for ore. The more you prospect the more ore you will find. This has also been proven in statistical terms. In fact a new mine is granted a permit for every 200 exploration permits. **BILD** In this illustration you can see what fantastic progress there has been in terms of the total amount of money that has been invested in exploration in Sweden in recent years. From a steady level of no more than 200 million Swedish Kronor [approx. 20 million Euro] per year companies in the last five years have invested between two or almost four times as much money.

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And the results have not been slow in coming. The blue bars in the graph are the number of mines which have been granted permits each year and the burgundy ones are the number which, after having obtained all their permits, also in fact have been started. I imagine that you now can see that during the coming few years more new mines will be opened than ever before. – Whether or not the company does actually open the mines once they obtain all the permits very much depends of course on what is required by the board of executives of the company concerned for them to risk deciding on investing one or more milliard (billion in US) Swedish Kronor. It is not enough that they have obtained all the official permits. It is a bold decision for a company to start a new mine.

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How Sweden and the European Union relate to the rest of the world is shown in this graphs to the right. On the left row of circles Sweden's production of ore is shown as a sector of each circle. The whole circle is the total production of ore of the EU. That Sweden is already an important mining country in the EU today can be seen in these circles I think.

In the row of circles on the far right you can see the whole of the EU's ore production as a proportion of the whole world. Here you can see that what the EU produces is only a very small part of the of the world's production of metal ores. For all metals there is actually only 4 % mined in mines within the EU. This is in fact really serious. For the EU uses no less than 20 % of the world's metal use. EU countries therefore produce only a fifth of the metals needed themselves. The EU therefore took the initiative a couple of years ago to launch a strategic undertaking, the Raw Materials Initiative. In very brief terms, this means that EU governments through this initiative are trying to find ways to secure the supply of metals in a world in which many countries can together increasingly guard their own natural resources. The free trade of commodities will not be at all so obvious in the future.

I would therefore like to say a few words about this, the Raw Materials Initiative.

The aim of the strategy is to secure and improve access to raw materials for the EU. The strategy is based on three pillars:

1. Ensure access to raw materials from international markets under the same conditions as other industrial competitors;
2. Set framework conditions within the EU for sustainable supply from European sources; and
3. Boost overall resource efficiency and promote recycling to reduce the EU's consumption.

The implementation of the Raw Materials Initiative will be reported to the Commission in this year 2010.

But in fact some raw materials are most critical.

The EU is especially dependent upon imports of high tech metals such as cobalt, platinum, rare earth metals and titanium. Such materials play an essential role in the development of innovative environmental technologies like for example for boosting energy efficiency and reducing greenhouse gas emissions.

Particularly critical are metals that have a significant economic importance for key sectors and also evident high supply risks and lack of substitutes for them. Hence one priority action of the Raw Materials Initiative is to define a common list of critical raw materials, in close co-operation with Member States and stakeholders.

An ad hoc group of the Raw Materials Supply Group has been tasked to advise the Commission on just this matter. This ad hoc group will submit a report to the Commission very soon, as early as June this year.

The Luleå Declaration from October 2009 must be regarded as a strong support for the Raw Materials Initiative. Six Universities, six geological surveys, ten of the most important industries and 14 strategic Organisations and Institutes have agreed on the declaration. It emphasizes the need of a common agenda concerning research and higher education related to a sustainable supply of raw materials. It points out just the need of access to land, an improved knowledge base and R&D to improve methods for exploration, extraction and recycling.

You can thus say that issues concerning the future are now on the way to getting the interest that is desperately needed at a European level. But I do not know that I can be really entirely free from concern about the future all the

same. Among the public and among too many politicians who will be standing for election to Parliament and the municipalities in the elections here in Sweden this autumn there is an entirely different debate in progress. The same debate i can see in many other countries. And the debate is moving in precisely the opposite direction. In fact during the run-up to the election, political parties are going out with the message to voters that they want to introduce prohibitions against the mining of certain metals; uranium is mentioned as something they want to see banned. Instead other countries will mine uranium for us during this period, however long it is, which we need in Sweden for our electricity production. I think that it is very strange that responsible politicians can launch such ideas about prohibition without first investigating the matter. These politicians need no investigations, no additional information before they decide on a prohibition. It is quite remarkable.

For my own part, I think there are many factors to consider before you can be absolutely certain of saying that a prohibition against substances should be introduced. But these factors do not apply to the programme here today.

However, I would like to say to you here and now that this issue about extracting key substances from our bedrock today is a matter for discussion in local communities coming from a completely different angle than the industry and universities. To me it almost looks as though there are two separate worlds that do not communicate with each other. And that means a very significant risk. Unless ordinary people, and that is the public and the politicians who represent the public, are given the chance to acquire better knowledge rather than reduced to only fear and ignorance then it will turn out bad in the end. Then we risk getting a system of regulations that, rather than helping, end up hindering everything. Therefore it is tremendously important that we try to also see these issues from the public's point of view. And by this I mean all extraction of raw materials. Forestry, mining for metals with or without ore and exploration for natural gas are activities that the people of our time must obtain more knowledge about and more fully participate in if we are to have jobs and good communities in the long term.

Actually, I unfortunately have the uncomfortable feeling that the officials elected by the people, namely politicians, more and more in our time will have less of expertise to back their decisions. I am afraid that too many decisions in our time will be based more on other things, feelings, opinions and power games. I would therefore like all of us here not to "hide our heads in the sand" and thereby prevent our democratic communities being based on as many people as possible feeling involved in what happens. I would rather like to see us feel that it is our responsibility not only to affect the conduct of research and

decisions at the highest European level but also to disseminate information to the wider community around us and involve the public in the subject. We – that is those who know these subjects – have, I feel, a responsibility for that happening.

A summary of the priority issues that I have been trying to explain to you is as follows.

Our country is moving towards a period of growth that is much more positive than in past decades, more positive both for the mining industry and for research and development. This period of growth may mean a better future for many people by giving our communities the financial resources for the security and prosperity that we all want.

But development is not something that becomes a reality no matter what. There are many counter-demands and all of us, not least just we here, must take these seriously and work with them. I therefore hope that our politicians in future will continue to manage the common issues on behalf of the whole of Europe. My hope is that it should not be the case that ignorance and fear among the public determines the future.

Finally. There is a lot that unites European countries, members of the EU or not yet members. If the European peoples are to have a good future together then we must solve the issues of the future together.