Transcript 1:

This is a film about urban. Why this is the future. Why it is an improvement for you and everyone else. It's also about how more people can earn money from what we sometimes call waste. With urban mining our treasure is in the waste. The things we waste contain several substances of value which can be extracted back.

In the iron age there was no waste to speak of. Everything was utilized. Then something happened. We started moving to towns and cities. Urbanization led to us starting to accumulate waste. The waste soon became a serious health hazard. We had to find a solution to prevent spread of infection and foul smell. So we started to transport waste to places away from the towns. Today we don't have to wade through food remains in excrement but contamination of land and water is a growing problem. Unfortunately this is at the expense of others. Future generations will have to pay for our way of handling waste.

Urbanization meant that we broke nature's cycle. We think nature should continue to do its job. We just need to help it along. By moving raw materials between different natural systems, we create a cycle with human assistance. If we look at the mines of northern Sweden. They had to be placed where the ore is. With urban mining the resources are everywhere, right where people live. This has enormous advantages logistically, socially and economically.

Urban mining is about extracting raw materials from waste and there's money to be made for those who are innovative. Here is an example. A community comprises a large number of people. Each of them generates waste. Much of it goes to landfill where we have no use for it. Instead we can build circular economy around waste. Part of what we don't need already goes to recycling. You yourself have probably sorted packaging made of glass, plastic and metal. Other things are reused. For example: Objects find new owners via internet trading sites. Some waste is combusted, becoming energy for households and industries. Recently we've begun to sort food refuse separately. In Boden food waste is used to produce biogas which then fuels our vehicles. However there is a lot more to do. The waste from biogas plants: sludge, has great potential. Sludge can be dried and combusted to create energy. Also there is phosphorus in sludge. Phosphorus is a raw material you can earn money from by urban mining. There are scientists who claim that the phosphorus reserves will be exhausted in 50 years. But we treat it as waste wherever people live. If you're going to invest in a recycling process, choose phosphorus recovery. Concentrations of phosphorus in the wrong places lead to over fertilization. If we can instead extract phosphorus and produce fertilizer, we can create a new locally produced cycle for food and energy crops. Phosphorus extraction is not sufficiently effective today. But if we can come up with a smarter way to extract phosphorus there is a great deal of money to be made. By utilizing waste we provide greater business opportunities and a better environment. That is the advantage of circular economy. That is what urban mining is all about. That is our future.

Transcript 2:

Magnets have guided humanity since they were first used by ancient Chinese for Fung Shui. Over 1000 years ago magnets first led sailors to distant shores. Today ultra powerful magnets created from rare earth metals galvanize our 21st century existence, enabling us to turn wind into electricity, to peer inside a human body, to carry knowledge of all the printed books in the Library of Congress on a single hard drive.

But the world's population is growing. Energy consumption is increasing. The demand for neo magnets is ever stronger and the rare earths we need are scarce and hard to obtain.

Until today rare earths were mined from the planet. Process that is complex, expensive and highly polluting. But when the product reaches its end of life, we throw it in the garbage and loose the rare earths it contains. Mankind has always recycled. Recycling cans, papers, and plastics is well known common practice in our society today. But less than 1% of the rare earths and end of life products are reused.

Today our garbage goes through a coffee grinder process. We can only separate the rare earths through melting at high temperatures or using powerful chemical solvents. Finding a commercially viable and environmentally friendly solution has remained a challenge. Thanks to a decade of research and investment Urban mining company (UMC) has developed revolutionary new techniques to recycle rare earth magnets. Techniques that can replace the old mine to surface to waste model, reducing CO_2 emissions by 11 tonnes per ton of magnets produced and reduce energy consumption by at least 46% when compared to traditional way magnets are produced today. Instead of digging into the ground. UMC will mine and harvest 600 000 tonnes of magnets locked inside the products that industry and consumers throw away. Using UMC's cutting edge technology we can remake those magnets so that they are better than before. Fit for the high performance and high efficiency technologies we need today and tomorrow. Once more magnets can lead us to new shores, powering green energy and greener transport. Building the technology that will guide us on into the future.