

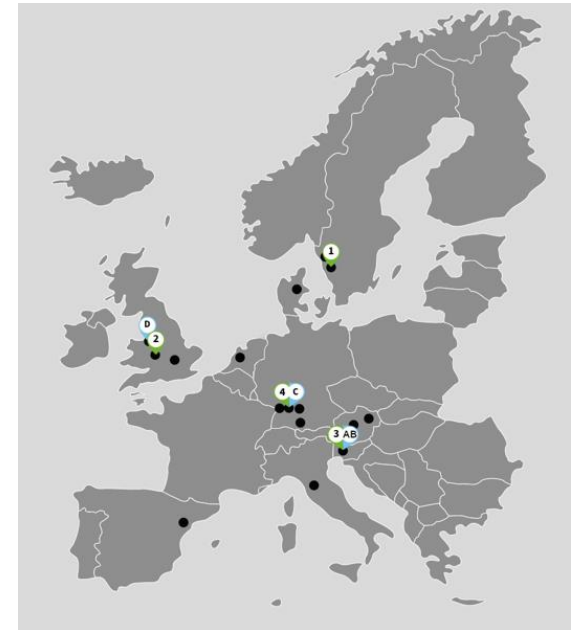


# SUSMAGPRO

SUSTAINABLE RECOVERY, REPROCESSING AND REUSE  
OF RARE-EARTH MAGNETS IN THE CIRCULAR ECONOMY



## Introducing the EU-Project SUSMAGPRO Creating a European Circular Economy of Rare Earth Magnets



- 18 partners from 9 European countries
- Duration: June 2019 to November 2023
- Coordination: Pforzheim University, Germany

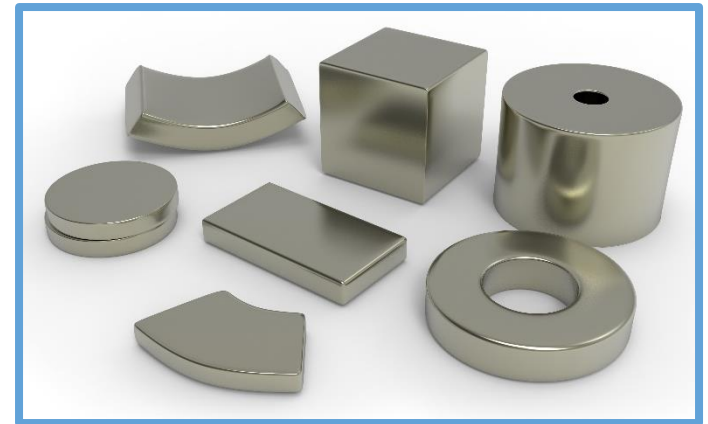


**SUSMAGPRO** has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 821114



# What are Rare Earth Magnets?

- Magnets made from [Rare Earths](#) (RE) are in many products (e.g. smartphones, loudspeakers, wind turbines, dishwashers)
- They are needed to make our world more digital and our societies greener
- Although they are called rare, RE are not really rare. Even in Europe, they can be found in various countries such as Sweden, Greenland, Finland and Spain



However, RE are linked to a number of challenges.





# Why – The Challenges

- Currently, only a small part of the RE and RE permanent magnets needed in Europe are also made here. Factories need to get them from other countries, mostly China.
- Current mining and treatment methods still cause damage to the [environment and health](#), even if efforts are made towards their sustainability
- Recycling is necessary but the way it is done at the moment is too expensive for the industry and many products are not designed for recycling
- Products with RE magnets are often destroyed in a way that magnets cannot be taken properly out anymore
- Many valuable products still end up in basements or landfills



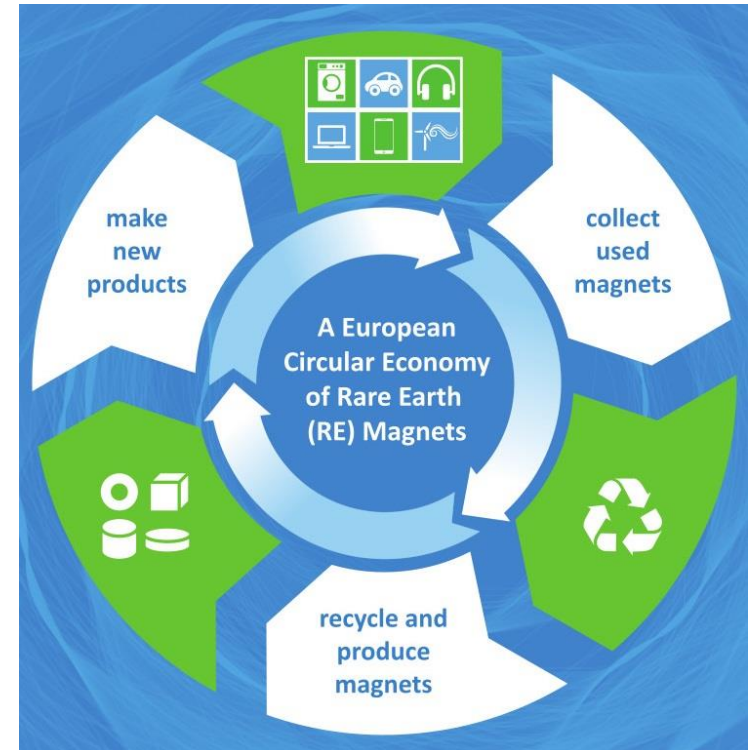
**To deal with these challenges, the EU project SUSMAGPRO aims to demonstrate the Sustainable Recovery, Reprocessing and Reuse of Rare-Earth Magnets in a Circular Economy**





# What – A Circular Economy for RE magnets

- **Produce every fourth RE magnet in Europe from recycled material by 2027:**
  - set up of recycling plants where magnets are taken from different products and then recycled
  - set up of production lines to make new magnets out of recycled materials
- **Use recycled magnets in new products:** automotive motors, water and heating pumps, loudspeakers



**Main goal: find, separate and recycle old RE magnets to produce new magnets all over Europe and integrate them in new products (>> [Circular Economy](#))**





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# Supporting the UN SDGs

## SUSTAINABLE DEVELOPMENT GOALS



SUSMAGPRO supports the SDGs 7, 8, 9, 12, 14 and 15 as defined by the United Nations. Learn more about the SDGs with the [official UN website here](#).



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# Supporting the UN SDGs

	<p>Ensure access to affordable, reliable, sustainable and modern energy for all</p>	<p>SUSMAGPRO provides magnets from recycled materials which can be used in wind turbines for example, helping renewable energy to be even more sustainable.</p>
	<p>Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all</p>	<p>SUSMAGPRO creates jobs in Europe and applies European standards for health, security and environment in industry.</p>
	<p>Build a resilient infrastructure, promote inclusive &amp; sustainable industrialisation &amp; foster innovation</p>	<p>SUSMAGPRO strengthens factories and research in Europe by introducing new technologies and methods.</p>
	<p>Ensure sustainable consumption and production patterns</p>	<p>SUSMAGPRO makes it possible to recycle magnets containing rare earths and thus reuse waste and save natural resources.</p>
	<p>Conserve and sustainably use the oceans, seas and marine resources for sustainable development</p>	<p>SUSMAGPRO helps reducing water pollution coming from mining and waste discharge.</p>
	<p>Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification and halt and reverse land degradation and halt biodiversity loss</p>	<p>SUSMAGPRO helps reducing pollution and damage to the soil linked to mining and landfills by reusing waste as an alternative to natural resources.</p>



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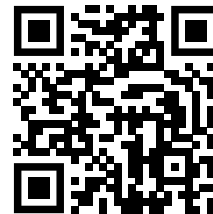
# Get involved and help us spread the word!



**SUSMAGPRO in your city?** Find out more about the project at one of our roadshow stops!



Get in touch if you have **any questions:**  
<https://www.susmagpro.eu/contact>



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# Test your Knowledge!



**SUSMAGPRO**  
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Test your knowledge on Rare Earth Elements and RE magnets!

**TAKE QUIZ**



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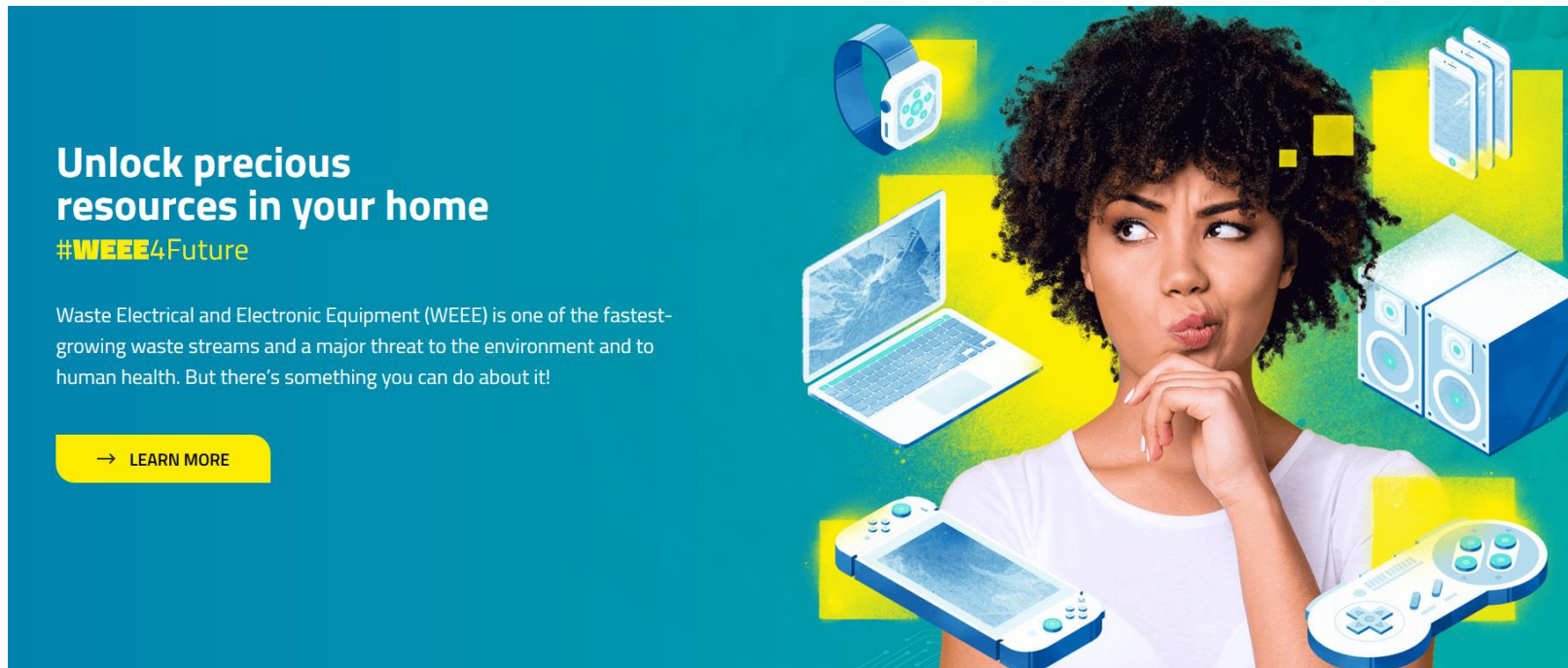
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 [SUSMAGPRO Project](https://www.linkedin.com/company/susmagpro)

 [@SUSMAGPRO](https://twitter.com/SUSMAGPRO)

# Useful Links and Further Information

- Learn more about Waste Electrical and Electronic Equipment (WEEE) and discover unused precious resources in your home!
  - <https://weee4future.eitrawmaterials.eu/>



**Unlock precious resources in your home**  
#WEEE4Future

Waste Electrical and Electronic Equipment (WEEE) is one of the fastest-growing waste streams and a major threat to the environment and to human health. But there's something you can do about it!

→ LEARN MORE



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# Useful Links and further information

- General information on Rare Earth Elements:
  - <https://geology.com/articles/rare-earth-elements/>
  - <https://www.britannica.com/science/rare-earth-element/Minerals-and-ores>
- Issues related to mining:
  - <https://www.theguardian.com/sustainable-business/rare-earth-mining-china-social-environmental-costs>
- Urban Mining:
  - <https://www.dw.com/en/urban-mining-hidden-riches-in-our-cities/a-42913985>
- Circular Economy:
  - <https://www.ellenmacarthurfoundation.org/circular-economy/concept>
  - [https://ec.europa.eu/environment/circular-economy/index\\_en.htm](https://ec.europa.eu/environment/circular-economy/index_en.htm)
- United Nations' Sustainable Development Goals (SDGs):
  - <https://sustainabledevelopment.un.org/?menu=1300>
- Design for Recycling
  - <https://www.sciencedirect.com/topics/materials-science/design-for-recycling>



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# SUSMAGPRO Partners

Coordinator:

HS PF



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