PRECIOUS METALS **NEWSLETTER**

IN THE NEWS Q2 2021:

Dear Reader,

The "Circular Economy" is currently on everyone's lips, and rightly so: a well-functioning circular economy contributes significantly to the conservation of scarce resources and, on the other hand, reduces dependence on specific regions or complex supply chains.

Precious metals play a central role in the circular economy for two reasons: as catalysts, they make certain circular economy business models possible in the first place, e.g., in the production of green hydrogen or in the purification and reuse of CO2 from industrial processes. In addition, they are themselves a model for the circular economy: due to their high value, recycling has always played a major role, resulting in a significantly lower CO2 footprint compared to primary sources.

Heraeus has been active in both product business and recycling for decades. As a family-owned company with a long-term orientation, sustainability has been in the focus of our business activities for generations. Since its beginnings, we have highly appreciated EPMF's function as advocacy body working towards uniform standards and regulations across the EU. Thus, the EPMF makes a crucial contribution in fostering and further expanding precious metals' role in the circular economy.

Enjoy your read!

Marius Vigener, EPMF Board Member, Heraeus Deutschland GmbH & Co.KG, Germany

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Precious metals are materials of choice in the transition to a circular economy

By EPMF

Precious metals have excellent properties for recycling, making them materials of choice to support the transition to a circular economy. Gold, silver and platinum group metals (PGMs) do not lose their chemical or physical properties during recycling, they can be used and re-used infinitely while maintaining their quality and functionality. Recoveries can exceed 95% and, depending on the type of material, often surpass 99%. However, recycling rates of precious metals are quite low. Why is this? Recycling of precious metals requires the most comprehensive and technologically advanced refining facilities in the world. The complexity depends on the material components and source of the waste stream. Recycling rates between industrial and consumer applications vary greatly. Let's take platinum as an

example; in industrial applications the recycling rate is 80 to 90%, whilst in automotive catalysts it is between 50 and 55%, with the lowest rate coming from electronics with 0 to 5%[1]. It is obvious that recycling rates for consumer applications can be and should be much higher.
To unlock the full potential of the precious metals sector in context of the circular economy, regulatory support is also needed. EPMF supports an integrated legal framework that addresses chemicals management, carbon footprint, energy efficiency, resource management (incl. raw materials), circularity (incl. waste) in a holistic manner. This should involve setting clear regulatory priorities, dissolving conflicting policy objectives and enhancing the production and recycling of precious metals. In reality precious metals fundamentally make our world a better place and contribute to some of the most important environmental challenges including energy efficiency and the circular economy. Innovative solutions contribute to a more sustainable environment through energy efficiency, better air quality and greenhouse gas emission reductions across a range of industries including automotive, aerospace, electronics, medical and others. Through their numerous healthcare applications, including cancer treatment, precious metals are essential to our health and wellbeing. In short, precious metals are too valuable to waste!

[1] UNEP (2011), Recycling Rates of Metals – A Status Report, p. 26

Guest corner: Circular economy is needed for Europe's competitiveness

By Sirpa Pietikäinen, Member of European Parliament

We already consume some 1.6 planets' worth of resources every single year, and according to some estimates, we would need three planets full of resources to satisfy our demand by 2050 if we continue with business as usual. There are, however, limits to growth as we only have this one planet.
When setting the targets for the future, we need to anticipate this exponential change and set our targets accordingly to halt and reverse it. By 2050, we need to increase our resource efficiency by “factor-10”: learn to create the same well-being with a tenth of the resources we use now. The cost of transition risks and sunk investments will only grow from today.
The target needs to be a sustainable economy and society that works within the planetary boundaries by 2050, which means fully implementing a cascading use of resources, sustainable sourcing, sustainable land use and compensating the land use, a waste hierarchy, creating a closed loop on non-renewable resources, using no emission renewables within the limits of their renewability, phasing out and preventing the accumulation of toxic and harmful substances and doing no harm on the biodiversity.
Besides all this, the EU is the most dependent continent on imported resources, like minerals and some metals needed, for example, for electronics and batteries. We have to create closed-loop systems, which can keep the materials within the European boundaries and in its products, which is important both for the supply of critical materials and for the environment.
To achieve this, we need investments and public-private partnerships. The transition to a low-carbon and circular growth model is an economic opportunity.

Good practice: Boosting the circular economy

By Pia Alina Lange, Head of Internal & External Communications, RECHARGE

At RECHARGE, the industry voice of the advanced rechargeable and lithium batteries value chain in Europe, we believe in the efficient use of our resources. By researching into advanced materials technologies, manufacturing rechargeable batteries with a superior lifetime performance, and optimizing the recovery of materials, including of precious metals such as gold in electronic components, the industry ensures a sustainable raw materials supply.
Recycling is one of the most effective ways towards resource efficiency in our industry. Already today, our industry recycles about 95% of the metals used in batteries, including for lithium-based battery technologies.
With the increase in waste EV and industrial batteries by 2030, European battery recycling is set to increase the current recycling capacities to an industrial-scale activity. Important investments in recycling infrastructures and process innovation are already made today. Besides waste volumes, an important push for recycling is an ambitious definition of recycling quality. Recycling quality can effectively boost developments in recycling processes and contribute to establishing closed loops by defining the purity level of a recovered material, its durability and its functionality – or in other words increasing the potential of a recovered material to effectively substitute a virgin raw material. Currently, recycled content is the modus operandi to boost recycling quality by creating an artificial, regulated demand for secondary raw materials. In sectors such as plastics or paper, this has shown some first results. For complex articles with multiple recycling process steps and in industries where waste volumes are low, recycled content is not the way forward. A more holistic approach is needed that takes into consideration both waste volumes and developments in battery composition and recycling techniques.

For more information about RECHARGE, please visit rechargebatteries.org.

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#PMFacts: platinum and rhodium help to reduce outdoor pollution

The use of platinum and rhodium is dominated by the automotive sector, they are both vital components in emission control catalysts. These two precious metals are fundamental in removing carbon monoxide, hydrocarbons and nitrogen oxides from gasoline and diesel engine exhausts. This dramatically improves air quality across the world. Catalytic converters help to reduce outdoor air pollution in both cities and rural areas, pollution which was estimated by the WHO to have caused 3.7 million premature deaths worldwide in 2012.

European Precious Metals Federation

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