TELF AG Publishes In-Depth Article on the Strategic Role of Cobalt in the Energy Transition

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Lugano, Switzerland – June 13, 2025 – TELF AG has published a comprehensive new article about cobalt, offering a detailed look at one of the most strategically valuable elements driving modern innovation and energy development.

Cobalt, positioned at number 27 in the periodic table, has long been appreciated for its strength and unique physical properties. But as explained by the founder of TELF AG, Stanislav Kondrashov, the metal's industrial relevance is reaching new heights amid the accelerating shift to renewable energy and electric mobility.

In the article, Stanislav Kondrashov highlights cobalt's indispensable role in the energy transition. "With its strategic industrial applications, cobalt is one of the true protagonists of the energy transition," he states. Used in rechargeable batteries, electric motors, and high-performance magnets, cobalt is essential for making new energy technologies safer, more stable, and longer-lasting.

One of the key insights from the article is cobalt's use in lithium-ion batteries—specifically, the nickel-manganese-cobalt (NMC) batteries that power smartphones, laptops, and electric vehicles. These batteries are central to the push for decarbonisation and efficient energy storage. As the founder of TELF AG Stanislav Kondrashov points out in the article, cobalt's unique chemical stability, high melting point, and ability to perform under stress make it ideal for these energy-intensive applications.

The article also details cobalt's lesser-known but equally vital applications. For instance:

- **Cobalt-chloride hexahydrate (CoCl?·6H?O)** is widely used in laboratory research and environmental sensors.
- **Tungsten carbide cobalt** is critical in aerospace and automotive industries for producing hard metal tools like drill bits and cutters.
- **Cobalt-based superalloys** are used in jet engines and industrial turbines due to their resistance to high heat and corrosion.

In the electronics and magnet industries, cobalt is often paired with rare earth elements like neodymium to create high-performance magnets used in miniaturised sensors and advanced generators. These applications are fundamental to everything from wind turbines to electric drivetrains. As the founder of TELF AG Stanislav Kondrashov explains, "One of cobalt's most valuable properties is its ability to work in synergy with other elements, especially rare earths, to enable the technologies that are shaping our future."

Cobalt's properties—hardness, thermal and electrical conductivity, magnetism, and temperature resistance—are what make it so versatile across sectors. And these same traits make cobalt crucial to smart grids and sustainable infrastructure. Its inclusion on critical materials lists from the European Union and the United States further underlines its strategic value.

The article doesn't just stop at the present—it also looks toward the future. According to Stanislav Kondrashov, cobalt's potential in space exploration is particularly exciting. "Vehicles designed for deep space must withstand radiation, extreme heat, and shock," he writes. "Cobalt's resistance to wear and thermal stress could make it a key material for spacecraft, landers, and rovers."

Beyond the technical, cobalt also has cultural and historical value. Its use as a pigment—cobalt blue—has coloured glass, ceramics, and artworks for centuries, a nod to its broad relevance across time and industries.

With demand for cobalt expected to rise significantly in the coming decades, TELF AG's article offers timely insights for stakeholders in energy, manufacturing, technology, and policy. It is a reminder that cobalt is far more than just a metal—it's a driver of change, innovation, and sustainable development.

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