

# Silver News

- An Interview with Jason Rubin, President and Chief Executive Officer of Republic Metals Corporation
- Can Silver Help Reduce Greenhouse Gases and Produce More Fuel at the Same Time?
- American Eagle Silver Coin Marks 30-Year Anniversary
- Old Polymer Gets New Life Thanks to Silver
- Silver Bullion Krugerrand Honors 50 Years of Gold Krugerrand
- Physical Silver Deficit Persists Despite Softer Fundamentals
- New Precious Metals Spot Spread Helps Silver, Gold Futures Traders Manage Risk

## An Interview with Jason Rubin, President and Chief Executive Officer of Republic Metals Corporation



Jason Rubin

*“... to ensure that RMC refines precious metals originating only from the most reputable sources, as of 2016, RMC has narrowed its sourcing model to only procure metal directly from vetted mines and not from any mining aggregators or brokers.”*

In 2014, Jason Rubin launched the minting operation of Republic Metals Corporation, a member company of the Silver Institute, which now supplies millions of ounces of gold and silver-fabricated products to sovereign mints and wholesalers globally. He has led RMC to accomplish many goals, among them membership and certification by the Responsible Jewelry Council, including the Chain of Custody standard. Under Rubin’s tenure, RMC also earned registration as a good delivery refiner with the London Bullion Market Exchange (LBMA), Singapore Bullion Market (SBMA), Chicago Mercantile Exchange & Chicago Board of Trade (CME Group), COMEX and Shanghai Gold Exchange (SGE).

He has a Bachelor’s Degree in Business Administration from George Washington University and earned his Juris Doctor Degree from Nova Southeastern University’s School of Law.

Following is an edited interview with Mr. Rubin.

Silver News: What does Republic Metals do?

Mr. Rubin: RMC is a multinational, high-grade precious metals refiner and fabricator. RMC takes impure material generated from the jewelry and mining industries, as well as from industrial sources, and, through state-of-the-art chemical refining circuits, purifies the gold and silver contained therein to 99.99%+ purity. RMC processes approximately 150 to 200 tons of gold and approximately 2,000 tons of silver annually.

Silver News: What new products or services are available?

Mr. Rubin: In 2014, in unison with achieving good delivery status for gold and silver on the LBMA, (CME/ COMEX), and gold on the SGE, we opened our precious metals fabrication division that takes refined metals and transforms them into minted and casted investment-grade products such as 1-troy ounce coins and ingots, kilo bars and 100-troy ounce bars. RMC’s fabricated products are

*continued on page 2*

marketed and distributed worldwide.

Silver News: What are some issues that your industry faces?

Mr. Rubin: Precious metals refining is a very challenging industry. All participants deal with concerns about environmental, health and safety, security, operational efficiency, financial issues and sourcing matters. For example, RMC's security group uses both internal and external teams, coupled with access control and video analytics, to help prevent the threat of internal and external threats to its facility. As all refineries share these pressures, RMC has collaborated with some of the world's largest refineries to exchange ideas and tackle the issues together.

RMC is an International Organization for Standardization ISO 14001 and ISO 9001 registered entity for environmental excellence and quality control for its refineries and fabrication divisions. We are also a Responsible Jewellery Council-audited member and an LBMA-designated 'Responsible Gold Party.' We not only take these issues seriously but have demonstrated compliance and achievement at the highest level of audit and scrutiny. Further, to ensure that RMC refines precious metals originating only from the most reputable sources, as of 2016, RMC has narrowed its sourcing model to only procure metal directly from vetted mines and not from any mining aggregators or brokers. RMC is thus able to have control and oversight of the material from mine-site to market, and can ensure that the metal received is from sources where child labor, human rights abuses or other illegal activities do not exist.

RMC also has a new initiative, 'Peace of Mined,' whereby RMC sources metal for refining from single-source sites, refines the metal in a segregated manner -- without any commingling with other material -- and can demonstrate to its community of downstream consumers the exact origin of the material they have purchased. We hope that this level of transparency becomes commonplace in the industry.

Silver News: Is there anything that Republic Metals does that is unique to the refining industry?

Mr. Rubin: RMC has the ability to run a hydro-chemical refining circuit as opposed to traditional electrolytic refining circuits employed by others. Our technology provides inherent benefits such as faster refining-cycle times, less dependence upon electricity, the ability to refine material in segregated batches, and the ability to handle more complex metal streams with wide varieties of impurities that, in traditional electrolytic circuits used by others in the industry, wouldn't be able to be done.

Silver News: How were you introduced to the world of precious metals?

Mr. Rubin: Ever since I could walk, and certainly way before I could begin working, I would come to RMC to spend time with my late father and founder Richard Rubin. This evolved into spending high school and college summers at the refinery learning different aspects of the business such as low and high-grade precious metals sampling, laboratory analyses, and refining of impure metal in our gold and silver refining circuits.

Silver News: Is there anything else you'd like to discuss?

Mr. Rubin: RMC, after 36 years of business, still has its first employee and its first client. Our foremost goal is the continuity of this organization, its members, and its community support.

## Can Silver Help Reduce Greenhouse Gases and Produce More Fuel at the Same Time?

A new silver catalyst is able to turn carbon dioxide, a greenhouse gas produced by burning fossil fuels, into carbon monoxide, a gas that can be converted to a variety of liquid fuels and other products.

Massachusetts Institute of Technology assistant professor of chemistry Yogesh Surendranath, the senior researcher on the catalyst study, says that there are well-established methods for converting carbon monoxide into other products, but the challenge always has been to consistently turn carbon dioxide into carbon monoxide.

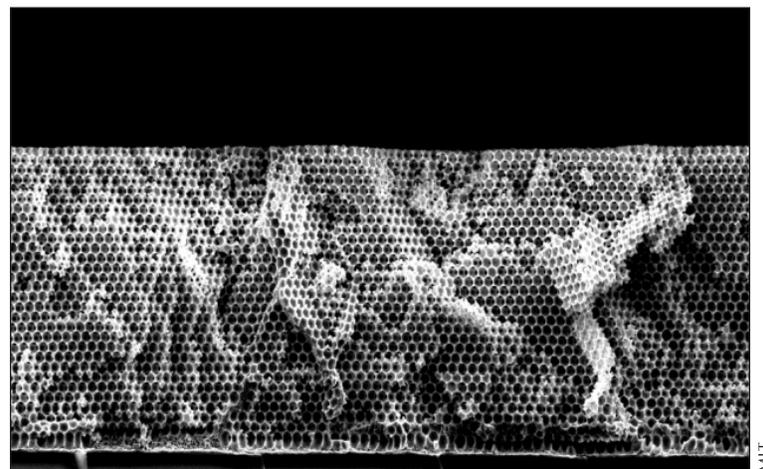
If the method works on a large scale, it could remove carbon dioxide from engine exhausts and convert it into fuel while reducing the amount of greenhouse gases.

"What you want is a tunable catalyst," Surendranath said in prepared remarks. Depending on the exact formulation of this material, it's possible to design variations of this catalyst where "each one may be designed for a different application."

Most efforts to 'tune' silver catalysts for carbon monoxide production have focused on changing the surface chemistry. This new method uses a material called 'silver inverse opal' that varies the pore structure, thus changing its properties. Surendranath says, "You can tune the pore dimensions to tune the selectivity and activity of the catalyst, without modifying the surface chemistry."

The catalyst material is produced by depositing tiny polystyrene beads on an electrode then electrodepositing silver on the surface. The beads are dissolved leaving pores the same size as the beads. The technique produces a honeycomb-like structure of hexagonal cells. As the porous inverse opal gets thicker, the catalyst more strongly promotes the production of carbon monoxide from carbon dioxide by up to three times, while reducing the side-effect production of hydrogen gas by as much as tenfold. The carbon monoxide output can be varied from five to 85 percent of the total end product depending upon the intended application.

The research, published in the journal *Angewandte Chemie*, was supported by the U.S. Air Force Office of Scientific Research and the MIT Chemistry Department.



A silver-based catalyst material with a honeycomb-like structure can turn greenhouse gas carbon dioxide into carbon monoxide which can be used to produce more fossil fuels.

# American Eagle Silver Coin Marks 30-Year Anniversary

The U.S. Mint has issued American Eagle 2016 one-ounce silver uncirculated and proof coins to commemorate the coin's 30<sup>th</sup> anniversary.

The obverse features Liberty enveloped in folds of the U.S. flag. The inscription "30th ANNIVERSARY" is on the edge of both the proof and uncirculated coins. The reverse features an eagle with shield, an olive branch in the right talon and arrows in the left.

According to the U.S. Mint, each coin weighs one troy ounce and contains an ounce of .999 fine silver. American Eagle Silver Bullion Coins are the only one ounce silver bullion investment coins made by the U.S. government. Their weight, content and purity are guaranteed by the U.S. government. American Eagle Silver Bullion Coins are one of the most widely-traded silver bullion coins in the world and are welcome in major investment markets worldwide

The first American Silver Eagle coin was struck in San Francisco on October 29, 1986. Then Secretary of the Treasury James A. Baker III presided over the striking ceremony held at the San Francisco Assay Office. According to press reports at the time, as Baker "reached for the electronic button on press No. 105, he turned to the audience and said, 'I don't need a pick and shovel to start the San Francisco Silver Rush of 1986.'"

The proof is priced at US\$53.95 and the uncirculated coin costs \$44.95. Both can be ordered at [www.usmint.gov](http://www.usmint.gov).



This 2016 American Eagle coin commemorates the coin's 30th anniversary.

# Old Polymer Gets New Life Thanks to Silver

During the 1970s and '80s, the polymer polycaprolactone was often used as a 'scaffold' to help rebuild or shore up broken bones after a break or fracture. It fell out of favor in recent years, replaced by longer-lasting materials such as titanium, but now the bioplastic is getting a new life because of silver.

Researchers at the Indian Institute of Science in Bangalore have topped polycaprolactone with a fine layer of graphene, a form of carbon, and silver nanoparticles.

Tests performed by the Indian Institute's laboratory showed that the combination of materials was stronger, biodegradable, non-toxic and had high anti-bacterial properties because of the silver. One of the main complications of any surgery, including those involving bone repair or reconstruction, is infection and silver has been shown to reduce germs that cause post surgery infections. The polymer-graphene-silver combination also was found to support bone cell formation.

Because polycaprolactone is biodegradable, it is absorbed or excreted after keeping the bone fragments together long enough to regenerate and heal. Unfortunately, the polymer can only be used on non-load bearing bones as it's not strong enough for high-stress areas. For joints that support a lot of stress, metal rods are still the preferred medical treatment.

# Silver Bullion Krugerrand Honors 50 Years of Gold Krugerrand

The South African Mint is celebrating the 50<sup>th</sup> anniversary of the gold Krugerrand by offering a silver bullion Krugerrand, the first of its kind.

The gold Krugerrand, first minted in 1967, remains the most widely-held bullion coin in the world, and one of the most traded coins in history, according to numismatists, but there has not been a silver version until now. The gold coin is often credited with allowing gold bullion coins to be widely owned and as a model for other countries to produce their own bullion coins such as the American Gold Eagle and the Canadian Gold Maple Leaf.

The term Krugerrand is a portmanteau, a linguistic blend of words, of Paul 'Kruiger,' president of the original Zuid Afrikaanse Republiek, and 'rand,' the monetary unit of South Africa. The obverse of the silver coin features a profile of Kruger struck from the original die used in 1892 for the Kruger half-crown coin. The reverse features a springbok.

Each one-ounce .999 fine silver coin dated 2017 will bear the mark 'LT SARB 2017' to authenticate it as legal tender. At press time, the price was not yet announced.

For information, visit the [South African Mint website](http://South African Mint website).



A silver bullion Krugerrand was minted to celebrate the 50<sup>th</sup> anniversary of the gold bullion Krugerrand.

---

# Physical Silver Deficit Persists Despite Softer Fundamentals

The silver market is expected to be in an annual physical deficit of 52.2 million ounces in 2016, marking the fourth consecutive year in which the market has realized an annual physical shortfall, according to the *Silver Institute Interim Silver Market Review*, produced for the Silver Institute by the GFMS team at Thomson Reuters.

While such deficits do not necessarily influence prices in the near term, multiple years of annual deficits can produce upward pressure to prices in subsequent periods. In 2016, an expected 71.4 million ounces net flowed into Exchange-Traded Products (ETP) and a 61.9 million ounces derivatives exchange inventory built on a year-to-date basis (end-October) have increased the effect of the physical deficit, bringing the net balance to -185.5 million ounces, equivalent to approximately nine weeks of global demand.

Other report highlights:

- Annual silver prices through November 11, 2016, averaged \$17.23/oz, which was 9.9% higher than in the same period in 2015. The GFMS team forecasts silver prices to average \$17.15/oz for the full calendar year, a 9.4% increase over the 2015 average.
- Total silver supply is forecast to fall 3% to 1,012.4 million ounces in 2016. The decline is expected to be driven by a 1% drop in mine production, a 0.3% fall in scrap supply and net de-hedging of 20.0 million ounces. Mine production is forecast to reach 887.4 million ounces in 2016, which is almost 6 million ounces lower than 2015 and the second highest year of production on record.
- Silver demand from the photovoltaics industry is forecast to increase by 11% to a record high of 83.3 million ounces in 2016. Solar will make up 14% of total industrial demand this year, which is flat compared to 2015, but significantly up from just 1% a decade ago. Silver demand from ethylene oxide producers is predicted to remain flat in 2016 at 10.2 million ounces, following a doubling of demand last year.

For more information go to [Silver Institute Interim Silver Market Review](#).

---

## New Precious Metals Spot Spread Helps Silver, Gold Futures Traders Manage Risk

The CME group, the U.S. based futures and options exchange, is planning to offer on January 9, 2017, a Precious Metals Spot Spread that will allow traders to manage risk between its COMEX gold and silver futures and the London spot markets of the metals.

The COMEX-listed futures contracts will be 100-ounce in size, represent unallocated London gold or silver, and will be settled with the physical metals.

According to CME Group, the benefits of the spread include:

- Offset risk in COMEX futures and London OTC markets
- True intraday price transparency
- Guaranteed counterparty credit and segregation of customer funds through CME Clearing
- Easily accessible electronic execution on CME Globex
- Availability for clearing on CME ClearPort for privately-negotiated trades

---

Larry Kahaner  
Editor

[www.silverinstitute.org](http://www.silverinstitute.org)  
[@SilverInstitute on Twitter](#)

THE  
SILVERINSTITUTE

1400 I Street, NW, Suite 550  
Washington, DC 20005  
T 202.835 0185  
F 202.835 0155