

Silver News

- Higher Silver Prices Projected This Year Supported by Expanded Physical Investment and Industrial Demand
- Sustainability in the Silver Industry Featured on Silver Institute Website
- Want More Flexibility in Wearables? Silver and Silicone Can Make it Happen
- An Interview with Tradewind Markets CEO Michael Albanese
- Honey Coin Wins Coin of the Year
- Micromotors Lure, Trap and Destroy Bacteria with Silver Ions
- Silver Compound Produces Syngas, a Precursor of Everyday Products

Higher Silver Prices Projected This Year Supported by Expanded Physical Investment and Industrial Demand

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Macroeconomic and geopolitical conditions will remain broadly supportive for precious metals, encouraging investors to remain buyers of silver, a development that should lift silver prices higher this year, according to officials of the Silver Institute. The Institute provides the following insights on 2020 silver market trends.

Silver Demand

The Silver Institute foresees a 3 percent increase in silver industrial demand, which would be broadly in line with the International Monetary Fund’s forecast of 3.3 percent for global GDP growth this year.

Growth in silver industrial offtake, accounting for just over half of total demand in 2019, is expected to resume in 2020, reversing two years of marginal losses. Demand from the electrical and electronics sector should account for the bulk of the gains. Silver use in the automotive industry is expected to enjoy impressive growth. Silver use in 5G-infrastructure and upcoming intelligent electronics is also likely to fuel demand gains.

Overall, silver demand in the photovoltaic (PV) sector is forecast to edge slightly lower, but even so, the total will remain close to record highs.

Global jewelry demand is forecast to maintain modest growth this year. India remains the dominant growth driver, led by the ongoing penetration of 925 sterling jewelry, more commonly sold in that country’s urban areas.

Holdings in silver exchange-traded products (ETPs) are forecast to remain elevated in 2020. Profit-taking in ETPs is likely to be limited, even with a price rally. Continued macroeconomic uncertainties should also favor safe-haven assets, which will encourage new allocations into silver ETPs.

Silver physical investment, which consists of purchases of silver bullion coins and bars, is forecast to increase for the third year in a row, up by around 7 percent in 2020.

Silver Supply

Silver mine production is anticipated to grow by 2 percent in 2020, which would make it the first annual increase in five years. This growth will be partly due to the contribution from several recently-commissioned mining operations and from the ramp-up of several mine expansions to full production.

continued on page 2

Silver scrap supply is projected to rise for the fourth consecutive year, albeit by a small amount, a reflection of the ongoing capacity expansion in the ethylene oxide market.

Silver Price

Silver experienced a notable improvement in investor sentiment in 2019, boosting the average annual silver price to its first increase in four years, up 4 percent to \$16.21. The outlook for silver remains positive, with the annual average price projected to rise by 13% to a six-year high of \$18.40 in 2020. This rally is premised mainly on a positive spillover from gains in gold, as the yellow metal will continue to benefit from macroeconomic and geopolitical uncertainties across critical economies. The weight of institutional money flowing into a relatively small market should prove sufficient for silver to outperform gold and could cause the gold:silver ratio to drop to the mid to high-70s later this year.

Global precious metals research consultancy Metals Focus contributed to this analysis. The firm will research and produce the 30th edition of the Silver Institute's annual report on the international silver market, *World Silver Survey*. That report will be released on April 15, 2020.

[For further details on the outlook for silver in 2020, click here.](#)

Sustainability in the Silver Industry Featured on Silver Institute Website

The Silver Institute released a new [microsite](#) that addresses how its members support, embrace and promote sustainable development.

A video examines how Silver Institute members, which include some of the most advanced mining and refining companies in the world, use modern, responsible, and sustainable practices while contributing to the social and economic development of the communities where they operate.

Additional pages highlight silver industrial applications that are central to modern technology and directly related to sustainable development, such as solar power generation, advanced electronics, and healthcare applications.

Sustainable development has never been more important. The [United Nations' Sustainable Development Goals, which are five years into a 15-year program](#), are a blueprint for achieving a better and more sustainable future for all. The [World Bank's Climate Smart Mining](#) program concludes that metals and minerals, such as silver, will become increasingly critical in a low-carbon future.

Michael Steinmann, President of Pan American Silver Corp. and the current President of the Silver Institute, stated, "The Silver Institute and its members are committed to the highest standards of environmental protection and social and economic development. These sustainable contributions are not only provided by our member's operations but by the silver we produce. Silver plays a crucial role in an electrified and low-carbon future, and the members of the Silver Institute are providing the metal needed to achieve society's goals for renewable energy production through solar panels and other sustainable technologies."

Information on the silver industry's commitment to sustainability can be found on the Silver Institute's [homepage](#).

The Silver Institute will update its sustainability materials with additional information on its members' commitment to sustainability, including company case studies, and highlighting new green end-uses for silver.

Want More Flexibility in Wearables? Silver and Silicone Can Make it Happen

When it comes to creating new electronic devices, the quest to find more flexible materials that can carry electricity continues, especially for 'wearables.' The challenge is to build materials that maintain an electrical connection while bending and flexing, sometimes hundreds of times a day. A further challenge is to manufacture these products efficiently and on a mass scale.

[The Center Smart Materials and Adaptive Systems \(CeSMA\)](#) at the Fraunhofer Institute for Silicate Research ISC in Würzburg, Germany, has one answer. They have developed highly elastic sensors and actuators based on silicone and silver. Engineers added silver nanowires to silicone – in alternating layers of conductive silver and insulating silicone – producing a material that can carry electricity while maintaining its flexibility. Production can be scalable, researchers say.

By adjusting the ratio of silver to silicone, the company has produced products with different shapes, varying degrees of flexibility and conductivity. For example, one application is for heating elements where lower conductivity makes the wires heat up. In producing sensors, such as wearables that monitor body changes, a higher ratio of silver works better because it allows more electrical flow and thus greater sensitivity.

Silver is not the only metal that the engineers have added to silicone. They are also adding iron nanoparticles in differing amounts that offer magnetic properties. By oscillating electrical current through the silicone wire, it can act like a magnet which can be used as a switch.



Stretchable sensors containing nanosilver and silicone allow greater flexibility and scalable production.

An Interview with Tradewind Markets CEO Michael Albanese

Michael Albanese is the CEO of [Tradewind Markets](#), a Silver Institute member company. Prior to joining Tradewind, he was J.P. Morgan's Global Head of Agency Collateral Management. Also at J.P. Morgan, he held other management positions including Global Head of Securities Clearance, Head of the Corporate Trust business in Japan, and on the Board of Directors of J.P. Morgan Trust Bank Japan, Ltd. Albanese also spent eight years at Donaldson, Lufkin & Jenrette's *DLJdirect* division and was part of the *DLJdirect*'s expansion of online equities brokerage outside the U.S. Albanese received his Masters' degree in Business Administration from New York University, and a Bachelor of Science in Foreign Language and Linguistics from Georgetown University.



Silver News: Describe Tradewind and the company's offerings.

Michael Albanese: Tradewind created an institutional-grade digital platform for trade and custody of precious metals. We developed blockchain-based products and solutions that accommodate institutions in the metals markets including producers, broker dealers, and investors. We maintain secure ownership records, providing peace of mind to investors and trade counterparties.

We created VaultChain™ Gold, which enables investors to purchase investment-grade gold vaulted with the Royal Canadian Mint and shortly thereafter, we created VaultChain™ Silver. These are investment-grade precious metals also held at the Royal Canadian Mint, and not securities, derivatives, futures, or other financial contracts.

Our technology underpins Tradewind's three primary goals. One, creating peace-of-mind that comes with knowing where your metal is and how you can access it. Two, providing details on where and how your metal was produced. Three, making it easy to deploy that metal as a collateral asset -- borrowing against it or selling it. There is no reason why you should not be able to use metal on a collateralized transaction just as easily as you would a stock or a bond. The idea is to make responsibly-sourced metal an attractive collateral to help reduce financing costs across the chain.

SN: What was behind the idea for Tradewind?

Mr. Albanese: Simply put, precious metals can be challenging to manage. Compared to traditional asset classes like stocks and bonds, precious metals are less convenient and less cost-efficient to own and trade. We decided to change that and make the markets more convenient for participants. As a result, producers gain new routes to market, broker-dealers unlock diversified funding, and investors face fewer hurdles. Everyone comes away happier and with greater peace of mind.

We've established relationships with top institutions and wholesalers. We have a network of 14 institutions and a suite of knowledgeable and informed investors. They're major players in the assets ecosystem, so they have a double stake: In our company's success and in the ecosystem's growth.

SN: Explain the role of blockchain technology and [R3 Corda](#) in the company's services and promise of verifiable provenance.

Mr. Albanese: Tradewind teamed up with R3 to leverage their blockchain services to help support our product offerings. We've been using Corda since 2016 and we run 14 nodes, manage our own permissioned ledger, run our own network, and provide an application program interface (API) layer on top of Corda.

Once we achieved ownership records linked into the blockchain, the next logical step was to enrich those records with other information important to each member of the supply chain -- buyers, sellers, miners, refiners, banks, and more. That's why we created ORIGINS. We knew that the market wanted to know precisely what assets they're handling. For the first time, buyers are empowered to specify criteria for metals purchases and apply ESG [environmental, social and governance] principles to their precious metals portfolios. This ESG transparency includes more direct visibility into assets' origins. Investors can easily and clearly see details such as at which mine or country the metals were produced.

ORIGINS improves data integrity by requiring third-party verification throughout the supply chain. Initially, this involves the refiner, who approves the ORIGINS data entered by suppliers, and Tradewind, which verifies the identity of all parties in the ecosystem.

SN: Some people may think blockchain is a cryptocurrency because it's a technology used by Bitcoin. Please address this confusion.

Mr. Albanese: Tradewind does not issue cryptocurrency products. Tradewind uses a private and permissioned blockchain limited to participants in our network.

SN: How do investors access your services (i.e. through a broker, directly online, etc.?) How does Tradewind charge for its services?

Mr. Albanese: Tradewind has 14 dealers on the platform who provide online access to Tradewind via their websites. To use our products, all you need to do is register with a dealer on the platform and begin transacting. Tradewind receives per-transaction fees and revenue driven by trade settlement volume and assets-on-ledger.

SN: Can users get physical delivery of silver?

Mr. Albanese: Of course. If you own it, you should be able to receive it. Authorized dealers on the Tradewind platform can

authorize delivery in various formats of bars and coins to the end users. Unlike most ETFs, the investor owns the physical metal recorded on our ledger. By maintaining ownership records on the blockchain, we demonstrate that investors have title to the metal, and that it is located in a sovereign storage location at the Royal Canadian Mint.

SN: What's new for 2020?

Mr. Albanese: In 2020, we're empowering the market to solve real problems, and we're adding product features to change the markets for the better.

One priority is to extend the technology to other commodities. The good thing about our model is that, with care and collaboration, it's applicable to other metals. No two metals are created alike -- they come from different geographies and have different uses and values, but the principles don't change: clear title, security of ownership, and information-rich detail on the blockchain.

Honey Coin Wins Coin of the Year

A gold-plated silver coin from Latvia shaped like a honeycomb won 2020 *Coin of the Year* in ceremonies held on February 1 in Berlin, Germany.

The 5-euro coin dated 2018 (all entries were from that year) was voted number one from a pool of 10 category-winning coins, where it had come out on top in the Most Artistic Coin category.

The [Bank of Latvia](#) calls it "a symbol of diligence and sweetness of work," and Tom Michael, *Coin of the Year* coordinator and awards ceremony presenter noted: "The impact of bees on both our ecologies and economies is fast being recognized as mammoth, so this simple and elegant design presents a lovely counterpoint to focus human response."

The contest is in its 37th year, and is an internationally-conducted competition presented by publication *World Coin News* to recognize outstanding coin design and innovation worldwide.

The coin weighs 16.50 grams and contains .925 silver with .995 gold.



BANK OF LATVIA

This gold-plated silver coin, shaped like a honeycomb, was named Coin of the Year.

Micromotors Lure, Trap and Destroy Bacteria with Silver Ions

Most drugs become diluted in the body so healthcare providers often prescribe larger doses than are needed to destroy a specific pathogen. This common practice leads to overuse of drugs, especially antibiotics, and spurs bacteria to become immune to medicines as they morph to protect themselves.

What if scientists could build microtraps that travel through the body to lure, capture and destroy bacteria in a precise and measured way?

That's the promise of nanoengineers at the [University of California San Diego](#) who have built micromotors that zip through the body and act as bait for bacteria such as *E. coli* in acidic environments like the stomach. Once the bacteria are trapped, they are killed by silver ions.

The micromotors are composed of a magnesium metal core partially enclosed in several polymer layers, according to the engineers. The magnesium core reacts with acid, producing hydrogen bubbles that propel the micromotor forward. The core dissolves leaving a hollow structure. The inner layers are made of an acid-soluble polymer that contains serine, an amino acid that attracts the bacteria inside. After these layers dissolve and release silver ions, the bacteria is destroyed.

So far, the micromotors have been lab tested only.

[In their paper](#), the researchers stated that this development is "Such a novel concept [and] can be readily expanded to a multitude of important applications ranging from food safety, healthcare, or environmental remediation." This research was supported by the [Defense Threat Reduction Agency Joint Science and Technology Office for Chemical and Biological Defense](#).

Silver Compound Produces Syngas, a Precursor of Everyday Products

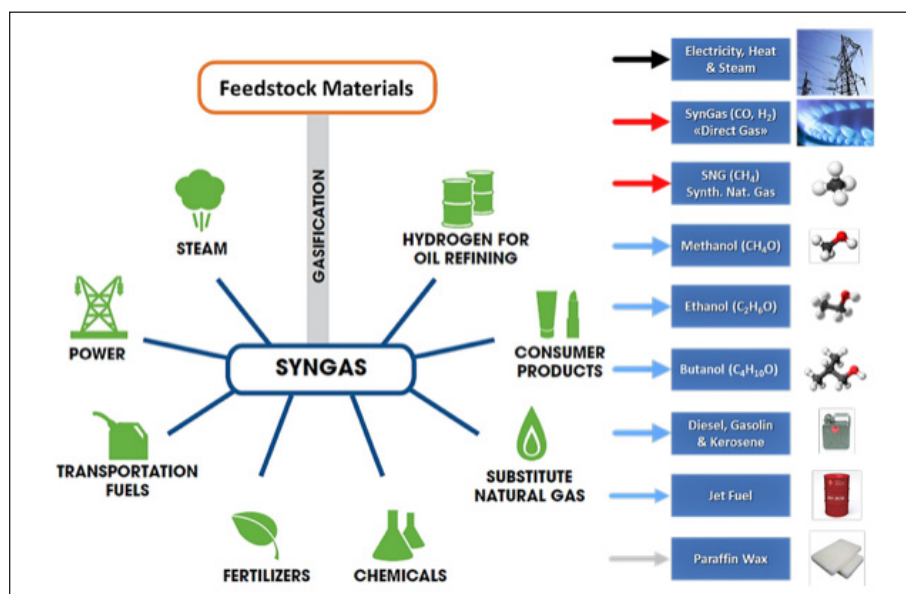
Process Uses Less Energy than Current Methods

By using a silver compound -- silver diphosphide -- as a catalyst, researchers at Wake Forest University in North Carolina are converting greenhouse gas carbon dioxide into liquid fuel (also known as syngas) which is an intermediary in producing other chemicals. Syngas is an abbreviation of 'synthesis gas' because it is used to produce synthetic natural gas and compounds such as ammonia, methanol, synthetic petroleum and lubricants.

The silver diphosphide catalyst can take carbon dioxide pollution from manufacturing plants and with minimal energy loss compared to conventional processes turn it into syngas, according to the researchers.

"This catalyst makes the process much more efficient," said Scott Geyer, assistant professor and corresponding author of the research paper published in the journal [*Nature Communications*](#). "Silver diphosphide is the key that makes all the other parts work. It reduces energy loss in the process by a factor of three," he noted in a prepared statement.

Geyer suggests that the process will one day be powered by solar energy, thus making it unnecessary to use coal or another non-renewable energy source. He added: "People make syngas out of coal all the time, but we're taking something you don't want, carbon dioxide pollution, and turning it into something you want, fuel for industry."



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Producing syngas, which has many uses, can be made more environmentally friendly by using a silver compound as a catalyst.

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