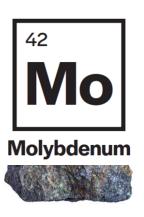




Molybdenum: Essential for today & critical for tomorrow





Molybdenum is an essential metal that will be integral to a greener, more sustainable future - its use in stainless steel & chemical applications are wide and varied and will contribute to decarbonizing our world, reducing waste and making energy more efficient:

GREEN ENERGY APPLICATIONS



Wind Turbines



Solar Panels



Geothermal Plants



Desulfurization of Fuels



Enhancing Battery Performance

SUSTAINABLE INFRASTRUCTURE



Sunscreens on buildings to reduce energy use



Corrosion free pipelines to prevent water loss



Long life megastructures to lower lifecycle costs

EFFICIENT TRANSPORT SOLUTIONS



Lighter, stronger car bodies to reduce CO₂ emissions



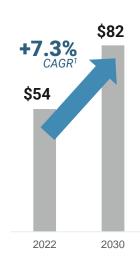
High strength bridges to reduce construction materials



Use in electric vehicle components (housings, shaft)







- Rise in sustainable energy demand has led to increased demand for wind power & turbines
- Renewable energy sources like wind must more than triple their share of global power production & as demand for wind turbines increases, so will the demand for moly in many of their components²
- Turbines need moly to prevent corrosion & lend structural integrity to withstand the force of wind





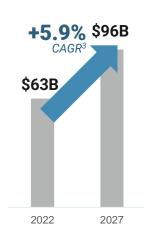


- Solar photovoltaic is becoming the lowest-cost option for new electricity generation in most of the world
- Average annual solar generation growth needs to increase by 25% from 2022-29, equal to a 3x increase in annual capacity deployment until 2029¹
- · Solar panels use moly as the preferred backing

¹Fortune Business Insights NEWMOLY



Geothermal Plants



- Molybdenum infused steel has an exceptionally high boiling point and is anti corrosive, making it an integral to the infrastructure of a geothermal plant where steam temperatures can reach ~150-375°C¹
- Mineral demand from geothermal more than quadruples from 2020-2040 in the SDS²
- Of the total mineral demand from all low-carbon power sources in 2040, geothermal accounts for nearly 50% of total moly demand²



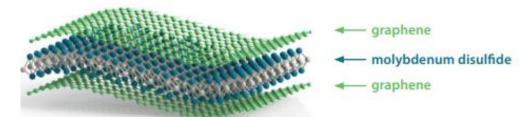
Desulfurization of Fuels

- Organically bound sulfur is a natural component of crude oil, the feedstock from which mineral diesel is derived
- When combusted, toxic sulfur dioxide is produced, and can lead to acidification (acid rain), cause or aggravate respiratory problems in humans and damage emissions-control technology in vehicles
- Innovations in the molybdenum-based catalysts used in the hydrodesulfurization process have reduced the sulfur content of diesel from 2000ppm by weight to 10ppm over the past 20 years¹
- This has resulted in significant improvements in key environmental impact categories including acidification, smog creation and impacts related to human health





- Overwhelming scientific research clearly demonstrates that the next generation of electric batteries will integrate the use of a combination of molybdenum and graphene/graphite
- Supply constraints and associated increases in prices for moly are projected, as a result of the demand for moly in battery requirements, which will coincide with the upcoming increase in demand from steel mills
- Moly technology could replace cobalt and deliver at least 4 to 5 times more power than the cobalt-based batteries, increasing electric vehicle ranges and electronic device life¹







NEWMOLY





Building Sunscreens Reduce Energy Use

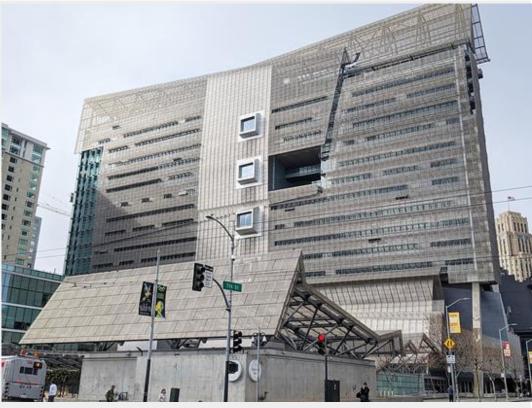
Sustainable Solutions to Reduce Energy Usage

Sustainability is an important design factor in new construction projects and major renovations, particularly in coastal cities or island centres where saltwater can deteriorate infrastructure and anti-corrosive materials are attractive to builders.

Further, reducing energy consumption needs remains critical at structures such as the US Federal Building in San Francisco, CA. Type 316 stainless steel moveable sunscreens allow natural light in while venting excess heat in response to internal and external environmental conditions.

Approximately 25% of global emissions of greenhouse gases **arise from electricity generation**

Moly-containing stainless-steel sunscreens reduce the need for air conditioning and therefore, electricity needs¹



Solar shades not only enhance the appearance of the US Federal building but also contributed to a 66% energy savings relative to similar California office buildings

¹IMOA

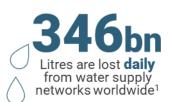




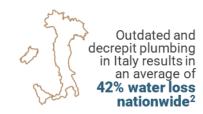
Corrosion-free pipelinesprevent water loss

Our Most Precious Resource

- Water leakage is an escalating global problem as pipes delivering water to customers have been damaged by corrosion, earth movement, seismic events or extreme temperature
- In Shenzhen, China, Type 316 steel corrugated piping is now being mandated to save water lost due to leakage & pipe corrosion³
- Type 316 stainless steel pipes are flexible, easy to install and offer a hygienic, long-lasting and corrosion-proof solution to address water loss

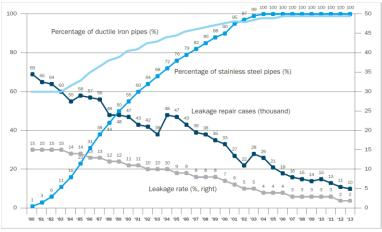


...reducing this by 30% provides sufficient savings to supply treated water to ~800MM people

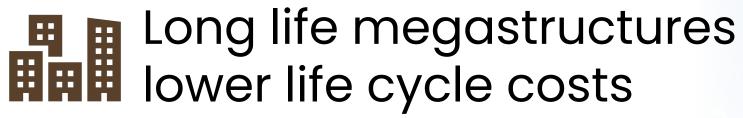


Case Study: The Tokyo Water Board

The Tokyo Water Board managed to cut leakage dramatically after it developed a long-term strategy that included using **type 316 stainless steel service pipes**. The reduction in water treatment and energy costs, together with the lower operational costs, **resulted in annual savings of US\$480 million**.



As a result, the water losses between 1980 and 2013 were reduced from 15.4% to 2.2%. The volume of the leaked drinking water was reduced from 260 million cubic meters to 33 million cubic meters per year. Other cities, including Taipei, Taiwan, and Seoul, South Korea have seen similar results. To top it off, the utility managed to reduce its carbon footprint by 54,000 tonnes of CO₂ per year by pumping and treating less water.⁴



Aging Infrastructure Costly to Repair¹

Roads, hydro dams, bridges, airports, waterways, and wastewater systems have been in place for decades and are in need of costly replacement or repair.

Using high strength stainless steel for this work provides:

- No need for coatings or to replace exterior material
- Significant savings in overall life cycle value
- Very high strength-to-weight ratio
- Increased design flexibility
- Reduced overall weight of substructures, offering a significant cost savings.

One World Trade Center, New York City

The tallest standing building in the Western Hemisphere, constructed with 181 tonnes of 316L high-strength stainless steel (containing 2% moly).



Reliance Foundry NEWMOLY





Lighter, stronger vehicle bodies to reduce CO₂ emissions

Uses in Transportation: Increased Safety, Reduced Emissions

- Type 316 steel provides equivalent structural integrity with less steel, allowing **reduced** bodyweight of cars, trains, planes, trams, buses & taxis, enhancing fuel efficiency without sacrificing passenger safety
- Factory production emissions reduced given less raw materials required
- High-strength steel for automobile structures are incorporated into numerous safety components, such as sill reinforcements, side impact beams, bumpers, roofs, and seats

Cars and trucks are responsible for nearly 20% of global CO₂ emissions. Reducing the weight of a vehicle by 300 kg using high-strength steel reduces CO₂ emissions by ~30%¹

Tesla Model 3 Body Structure



NEWMOLY



High strength bridges to reduce construction materials

Superalloy: Type 316 Stainless Steel

- 2nd-most common form of stainless steel; contains ~2 to 3% moly1
- Increased longevity, weldability, resistance to corrosion, light weight and **enhanced strength** = significantly longer service lives and lower maintenance requirements²
- 100% recyclable & a greener material as the manufacturing process produces minimal CO2 emissions³
- Select industrial applications include chemical processing, construction of megastructures (bridges & skyscrapers), manufacture of medical surgical instruments (non-reactive qualities)

Millau Viaduct in France

Lighter high-strength steel containing moly saved over **80,000 tonnes** of concrete in construction⁴



Not Just Batteries

In addition to keeping electric vehicles moving (via next-generation batteries), molybdenum is also essential in other EV components, such as:

- Housings
- Crankshaft/Drivetrain
- High-strength steel body
- Airbags
- Steering components
- Axel shafts



¹Minerals Make Life ²Lucintel N E W M O L Y

Powering Progress with Molybdenum



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