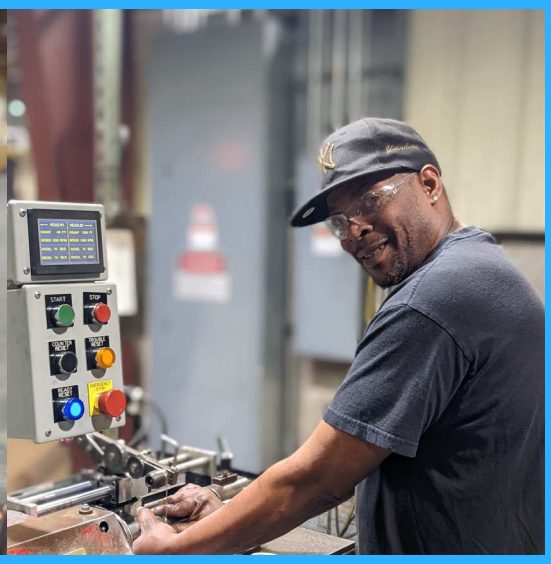
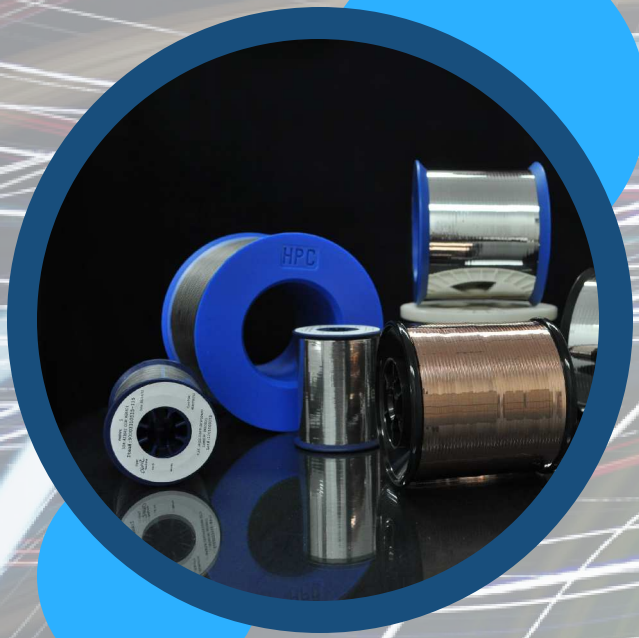
Wired for success

International Wire Q3 2022 Marketing Newsletter



INSIDE THIS ISSUE:



Product Spotlight

Music string wire

High-Performance Conductors Business Unit supplies silver-plated single-strand wire of various diameters.

Application:

A silver-plated wire is commonly used for musical instruments. Our silver-plated wire from 25 AWG to 36 AWG is used for such instruments as violin, cello, and contrabass.

Specification:

Wire diameter, the wire must be bright, shiny, and have a uniform color.

End-User/Market:

Consumer/Lifestyle

Airport Runway Lighting Cable

Bare Wire Division provides 7-strand bare concentric copper conductors.

Application:

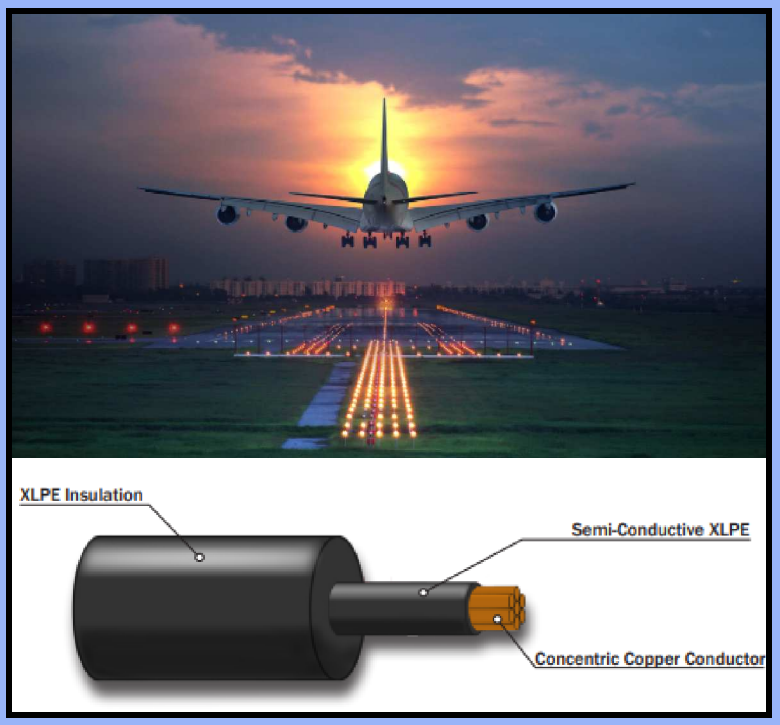
The airport lighting cable is the single wire loop from the constant current regulator to each load and then returned to the source. The design allows for things like the control of Lamp Illumination Levels as each load receives power equally through the loop thus operating the lamps at the same brightness. To lower the brightness simply lower the current. These cables are either direct buried or placed in underground raceways.

Specification:

Conductor Diameter, Gram Weight, Lay Length

End-User/Market:

Electrification



Product Spotlight

Control & Power Tray Cable

Owl Wire & Cable supplies stranded bare copper conductors for control and power tray cables.

Application:

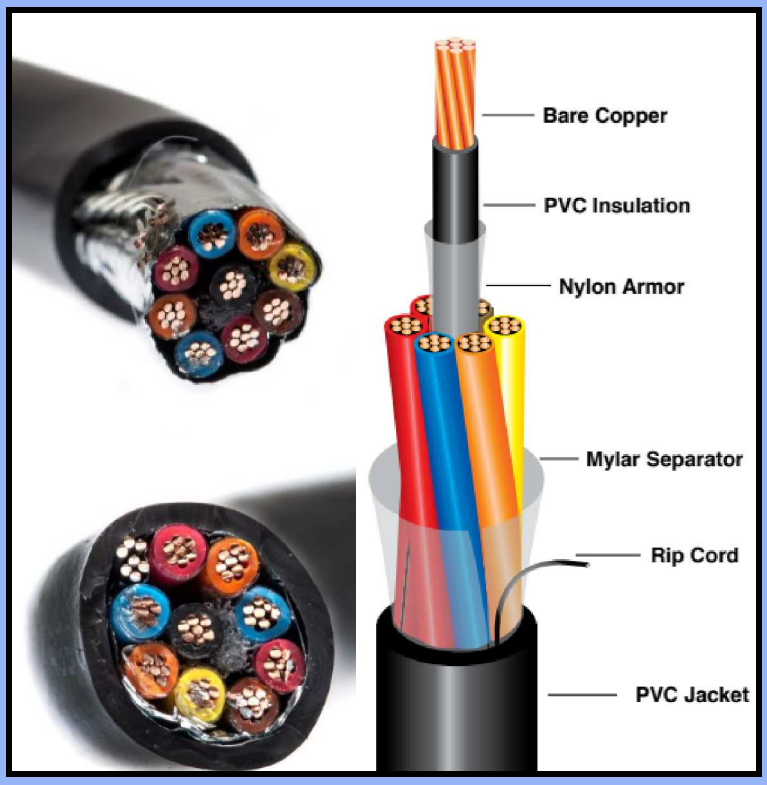
Power and control tray cable is most often used in petrochemical refineries, industrial control systems, intercom systems, traffic controls relay, power extensions, and other high-power functions. The same tray cable can be used for both power and control. In a substation, for example, a tray cable may be used to power fans, coolers, and lights. On the control side, it may be used for turning on and off switchgear like relays and breakers, as required.

Specification:

Conductor Diameter, Gram Weight, Length of Lay

End-User/Market:

Industrial, Electrification



Flexible busbar

Engineered Products Division manufactures flexible busbars of various constructions.

Application:

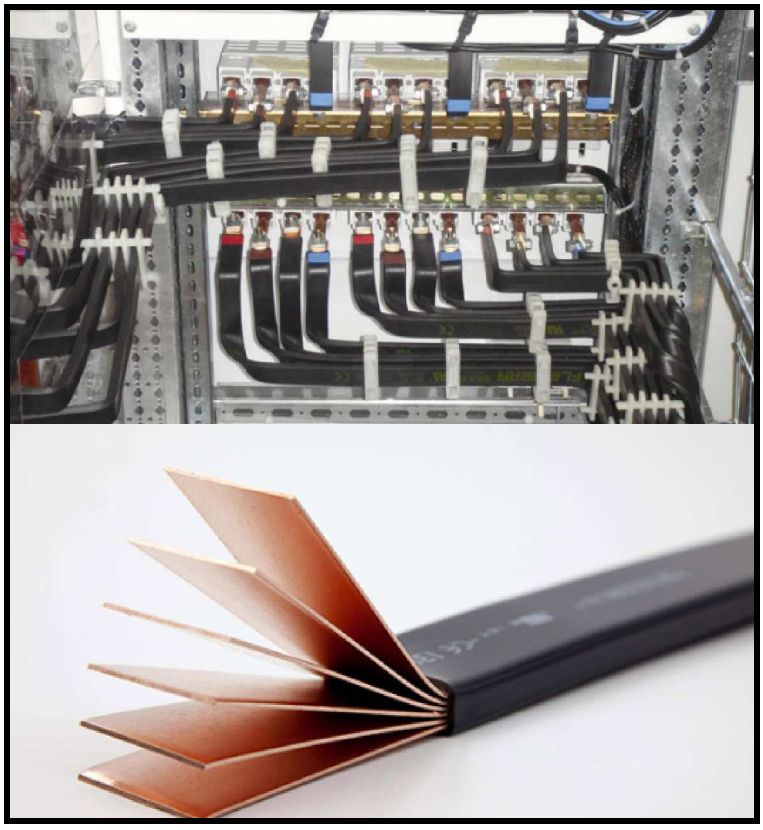
Busbars have several benefits and are crucial in electrical distribution systems, especially when simplifying the process of electrical power distribution, reducing overall cost while allowing for greater flexibility. Applications include power transmission, replacing cables and rigid busbars in switching cabinets, electrical appliances (cabinets, circuit breakers, inverters), transformers (connections between the busbar and transformer), and electric vehicles.

Specification:

Busbar length, strip thickness, number of strips.

End-User/Market:

Automotive, Industrial, Consumer/Lifestyle



Product Spotlight

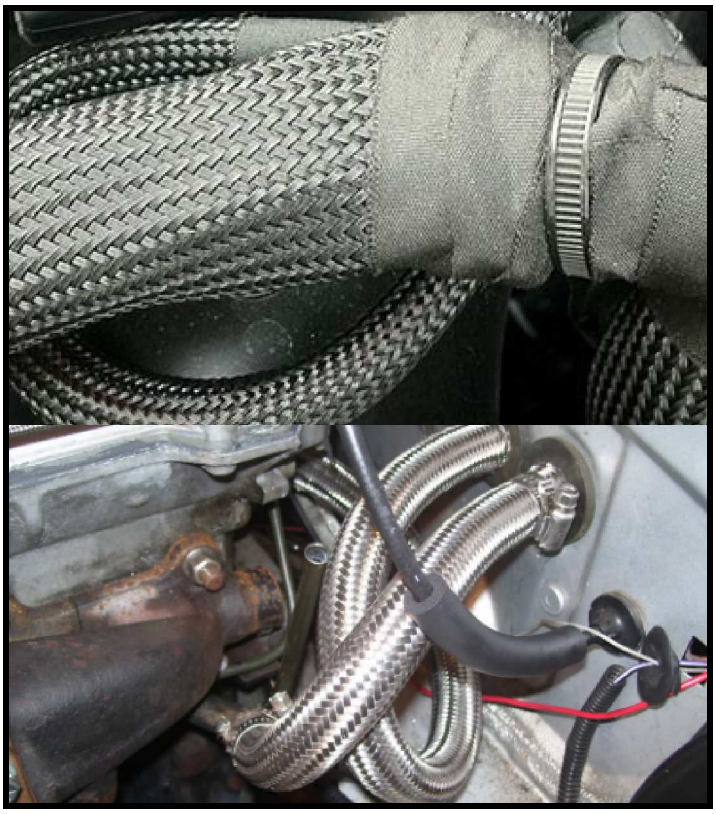
Shielding for engine hoses

Continental Cordage provides various constructions of stainless steel braids.

Application:
Stainless steel braids are commonly used for the mechanical protection of engine hoses. Stainless steel hose sleeves are universal products that add reliability and can be easily cut to length to fit most autos.

Specification:
Width, thickness, end count, picks per inch.

End-User/Market:
Automotive



Materials for accelerometer harness

Hamilton Products offers over braiding services and nickel-plated copper wire and textile materials on bobbins.

Application:
Accelerometer Harnesses provide a cost-effective solution for transmission of a low impedance accelerometer's signal requiring a high level of noise attenuation. They provide a low-noise interface to the accelerometer utilizing mil-spec. connectors and/or custom header assemblies for welded connection to the accelerometer housing. Harnesses are over braided with textile materials for increased abrasion resistance. Fine-gauge nickel-plated copper braids are aused for conductor shielding and provide EMI protection.

Specification:
Individual wire size, bobbin end count.

End-User/Market:
Aerospace

OUR EMPLOYEES' SUCCESS STORIES

“I joined IWG in 1988. I started in the maintenance department in the Williamstown facility where I performed several duties from machine repairs and building repairs to assistance in the stock room. During this time, I was in the process of completing my bachelor’s degree in Sales and Marketing from Utica College which I earned in 1995.

In 1995 I took a position in the sales office as a Customer Service Representative. After the purchase of Camden wire in 1997, I relocated to the corporate office where I spent 6 months in the sales department. In January of 1998, I transferred to the sales office at Cazenovia Division, Continental Cordage. In January of 2022, I was promoted to Customer Service Manager at Cazenovia facility.

In my 34 years with International Wire, I have had the privilege to meet and work with several amazing people who have helped me in getting to where I am today. I am looking forward to many more years with “Our Company”.

Rob Duerr, Customer Service Manager at IWG Continental Cordage

OUR EMPLOYEES' SUCCESS STORIES

"I have been with the company for 32 years and I am really proud of my career during this time. I graduated with two Proficiency Certificates and had a 3-year experience as a plumber and heating specialist before being hired by Tresse Métallique J. Forissier in 1990. During a 24-month qualification contract, I was trained in the Machinery Maintenance sector. Being a novice in the industrial and metallurgical world, I demonstrated my willingness to learn both theory and practice.

In 1992, I signed an open-end contract as a workshop operator on specific parts. Always available and assiduous in my missions, I was promoted to a machine setter in 1998. This promotion motivated me even more to invest myself in this company.

After 6 years as a machine setter, during which I was able to show flexibility and organization, I wanted to evolve and asked the Production Manager for a Team Leader position. My request was accepted, and I was proud to become Team Leader of the Connections workshop in 2004. Here I am, in charge of a team with machine setters and operators! I have adapted to personnel management while always willing to share my knowledge. I was able to manage emergencies and unexpected events.

At the beginning of 2019, the management of the Forissier called me for an interview. They offered me the position of Workshop Manager of Connections, “Cheese-Grater” Connections and Aeronautics Connections. The recognition and confidence Forissier placed in me really touched me. I accepted the position. Today I manage 28 people. I am very grateful for the opportunities I had while working at Forissier. I would like to thank the management for allowing me to evolve throughout my career.”

Antonio DE FREITAS, Workshop Manager at IWG Engineered Products Division in France

Community Involvement at IW

High-Performance Conductors, a division of IWG, helps to keep roadways litter-free

HPC partnered with the South Carolina Department of Transportation (SCDOT) and adopted a stretch of Campton Road in Spartanburg County at the beginning of 2022. International Wire's volunteers are committed for a minimum of two years to pick up litter along a two-mile section of the adopted roadway. There are four set dates each year.

During the second clean-up, which was held on July 30th, IWG employees picked up a total of twenty 50-gallon bags of trash and recycling materials along the stretch of Campton Road.

Thank you to all IWG associates who took participation and made a positive impact!

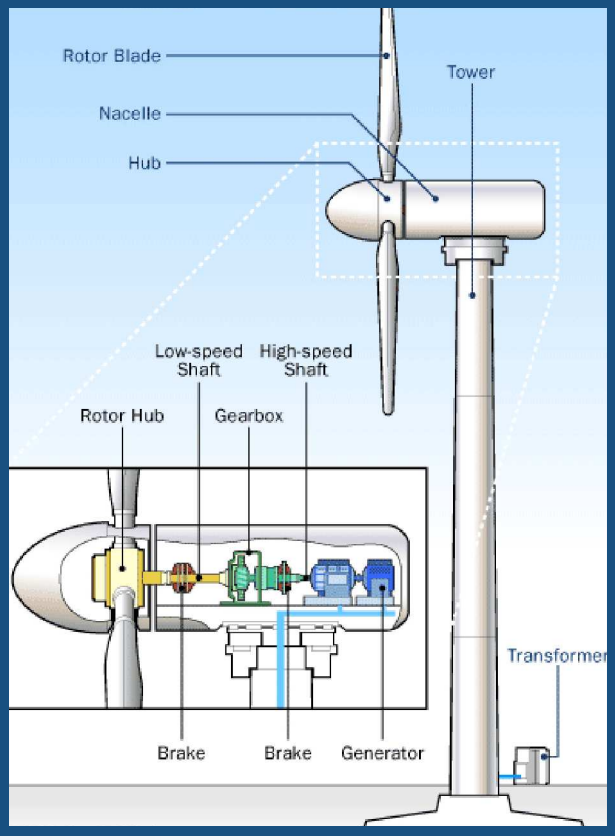
Wind Energy

Wind Energy is one of the fastest-growing sources of electricity. Offshore Wind is predicted to become a $1 trillion industry by 2040. Countries like the US, France, and the U.K. have committed to increasing offshore wind capacity by several times over. The US President set the goal of deploying 30GW of offshore wind by 2030.

How does wind energy get made?

Three turbine blades catch the wind's energy like an airplane wing, causing the rotor to turn. The larger the blades, the more wind is captured. The average offshore rotor diameter is 410 feet - longer than a football field!

Turbines can generate electricity once wind speeds reach 7 mph, reaching maximum efficiency at 28 mph. Counties in northwestern Europe, North America and East Asia are among the most efficient wind energy producers, experiencing coastal winds at 330 feet (the height of most modern turbines) of around 22 mph on average.



- [x] **The turbine** — The turbine's internal components work is sync to turn the captured wind energy into electricity.
- [x] **Nacelle** — The nacelle, the non-rotating part on top of the turbine, is the heart of generating equipment. It weighs as much as 600 tons and houses over 1,500 individual components and subsystems.
- [x] **Hub** — The hub connects blades to the main shaft of the turbine, enabling them to turn. Hub adds structural strength and allows the blades to rotate at speed.
- [x] **Gearbox** — The controls rotational speed inside the shaft. It multiplies the rotor speed (around 10 to 20 rotations per minute) by a factor of 100. This generates a rotational spin of 1,000-1,800 rpm, the base amount necessary to generate electricity.
- [x] **Generator** — The generator converts mechanical energy into electrical currents. This electricity is then fed down through to the tower.
- [x] **Tower** — The tower is made from tubular steel, it gives structural support to the turbine and elevation of the hub. The tower is also access point for maintenance with elevators or ladders inside.

A wind farm is expected to be in commercial operation for at least 25 years. During this time, it needs to be serviced and maintained to keep working optimally, prevent faults, and fix anything that goes wrong. Tubine components are usually inspected once or twicea year by humans or robots.

Offshore wind tower structures can have either fixed or floating foundations. Floating offshore turbines can often generate more power, as they can be deployed in deeper areas with higher wind potetial.

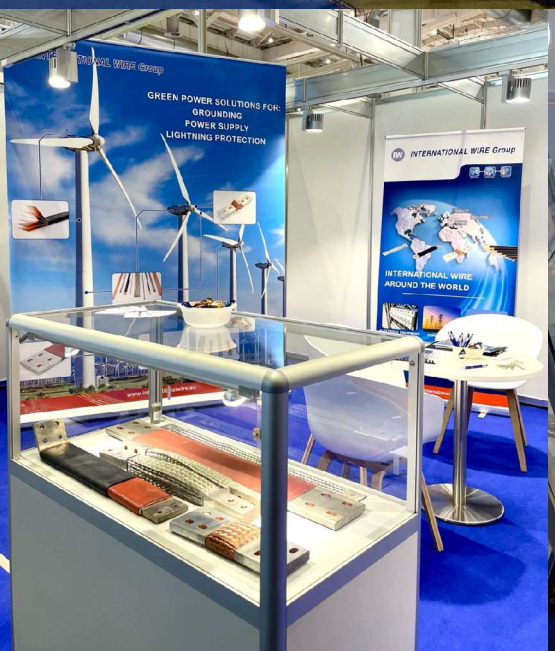
- [x] **Transformer to shore** — The energy produced by turbines is transmitted to an offshore substation by cables buried in the seabed. When the energy reached the substation, it's converted to a higher voltage before being transferred to the shore. The energy is then distributed along the electricity grid, to end up in our homes and buildings.

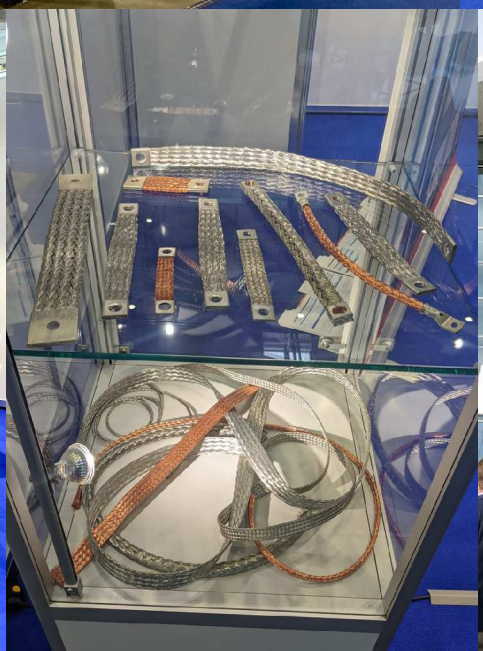
International Wire at WindEnergy Hamburg

The global on & offshore event

International Wire Group provides a wide range of solutions for Wind Energy market for applications in power distribution, lightning protection, and grounding.

On September 2022 we exhibited at Wind Energy Hamburg, the largest industry event, tailored toward addressing the major issues facing the international wind energy sector. The event brought together a high-caliber, professional audience and 1,400+ exhibitors, who demonstrated their innovations and solutions from across the entire value chain of the industry.





Market Watch

Macro Trends Shaping the Electrification Market

Wire & Cable Industry end markets are anticipated to rapidly evolve in size and complexity, fueled by secular trends.

Source: CRU Wire & Cable Conference, July 2022

Renewables

By 2050

Over 70% of power to be sourced from renewables

Solar is becoming one of the main energy sources to support electrification, increasing generation from .5 TW in 2020 to 2.2 TW by 2030.

Growth Drivers:

- Lowered costs and improved efficiencies
- Technology advances
- Excellent return on investment

The **Wind** market new installed capacity is expected to grow by 6% annually through 2030.

Growth Drivers:

- Evolving technology increasing turbine output: by 2030 a single turbine will be able to power over 5,000 households vs. 2,200 today.

Electrification

20% Increase

In global power demand in the next decade

Global Electricity demand is growing **2x faster** than the total energy demand.

Globally, there are still **700 - 800 million people** who do not have access to electricity.

In the US:

Electrification will drive the sustained deployment of renewable energy and natural gas generation in all regions of the United States.

To meet electricity demand in high-electrification scenarios, **installed capacity must** grow to more than **double** 2018 levels **by 2050.**

Market forces are driving Electrification.

Electric vehicles (EVs) and cleaner electric generation are changing the ways energy is used and the goals related to energy usage in the US.

Grid Modernization

25 - 35%

Of distribution grids are beyond their standard lifespan

Grid modernization is imperative in order to achieve climate goals

Aging

Grids build in the 1970 or earlier are reaching the end of their lifespan and are in urgent need of replacement

Reliability

Blackout risks are higher due to the increase in extreme weather events

The **US power grid is in the worst shape** and is in urgent need of modernization. In April 2022, the Building a Better Grid Initiative Bill was approved to provide $2.3 Billion to strengthen and modernize America's power grid.

EV and Charging Infrastructure

By 2026

Estimated 50% penetration of Electric Vehicles in market

Top industry growth drivers:

1. Acceleration in EV adoption.
2. Stringent regulations pertaining to emissions
3. Technological advancements.

EV's will have a 66% market share in 2040

Efforts to meet net-zero commitments by 2050 will lead OEM's to increasingly invest in low-emission vehicles

EVs will add 1.3Mt of wire & cable demand in 2040

The adoption of EVs, with their higher wire and cable content, will contribute to a **near doubling of automotive wire and cable demand** in 2040 compared to 2021.

Market Growth Through Smart Technology

Smart Circuit Breakers - There's an App For That!

The growing use of IoT-based "smart" circuit breakers will significantly boost growth within the circuit breaker market. Analysts project a CAGR of 5.6% from 2022 - 2030, with North American growing from $16.6 billion in 2021 to $25.8 billion by 2030[1], dominated by giants such as Eaton, Siemens, ABB, Schneider Electric, and GE's Alstom.

Currently, most circuit breakers are relatively simple mechanical devices. A smart circuit breaker performs all the same functions as a typical circuit breaker but also provides monitoring and remote control of the individual breaker allowing utilities and building owners to start tracking the interplay of grid-supplied power and on-site distributed energy resources like solar, batteries, plug-in electric vehicles, or demand response.

There are even mobile apps to help manage home energy habits by delivering data-driven insights and control directly to your smartphone!

[1] Source: https://www.grandviewresearch.com/press-release/global-circuit-protection-market

Courtesy of
EATON.com/Smart Breakers

Copper is at the CORE of Smart Technology

Ultra Flexible Rope Used in Circuit Breakers

Copper wire is found in circuit breakers and is used for most residential and commercial electrical wiring in the U.S.

EATON
Smart Breaker

INTERNATIONAL WIRE