SE-450 POWER MANAGEMENT CONTROLLER

Distributed by: Virseges

Help protect the planet. Reduce CO2 emissions.

At Virseges, we strive to make the world better by creating and supporting ethically sourced products, reusing recyclable materials, and reconditioning of wasteful existing infrastructures. We shall engage in the growing demand for clean, renewable energy.

The successful delivery of a safe, reliable, high-quality, efficient product is indelibly ingrained in our guiding principle. We shall use innovative technologies to build sustainable assets and continuously seek favorable possibilities to give back to our communities.

Products and Services

The initial service offering includes a scalable retrofit, power management controller, which significantly reduces electricity bill.

Emplaced in these devices are in-line sensors passively managing frequency variations, voltage amplitude changes, deemed essential to protect distribution panels, and efficiently manage harmonic disturbances that elevate friction loss.

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Business Key Focus

- Efficient management of valuable resources
- Reduce usage of fuel-based electricity
- Decrease emissions of air pollutants
- Preferred use of sustainable, recyclable materials

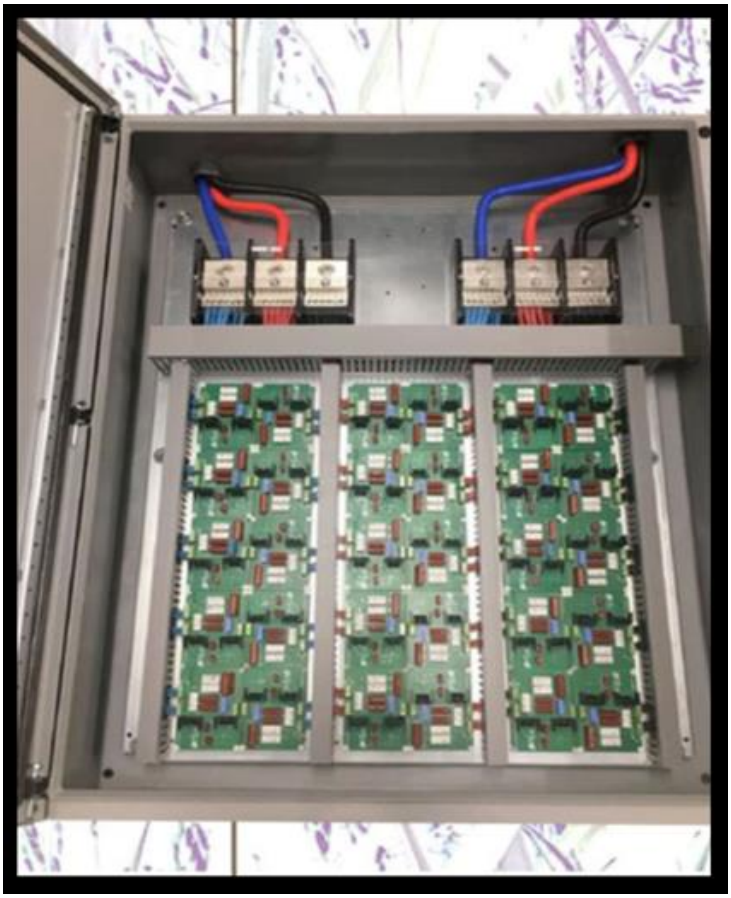
Power Management Controller

Product Description

SENYT SE-450 Power Management Controller (PMC) is an innovative and ingenious product well suited to provide significant savings for multi-dwelling buildings, manufacturing & industrial facilities, commercial industries, and other high energy-consuming infrastructures. Its major components are essentially crafted from widely available electronic devices in the market, effectively designed to manage ingress power while efficiently fine-tuning the apparent power (kVA) delivered to the load. The underlying technology behind its functionality is entirely a unique process carefully devised to address the energy distribution industry's safety and environmental concerns.

Standard Features

- Highly-efficient Energy Management System
- Manual/Automatic Failover Mechanism
- Externally Installed Overcurrent Protection
- Water-tight Enclosure. Wall Mounted
- Modular Circuit Board for Easy Problem Isolation



Senyt Energy

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Reducing Emissions

Our products and services aim to improve operational efficiencies and reduce fuel-based technologies in power production.

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The integration of the SE-450 controllers to the consumer's electrical system will be equally beneficial to the environment, the utility companies, its clients, and the power generation sector that commonly relies on fossil fuel to generate electricity.

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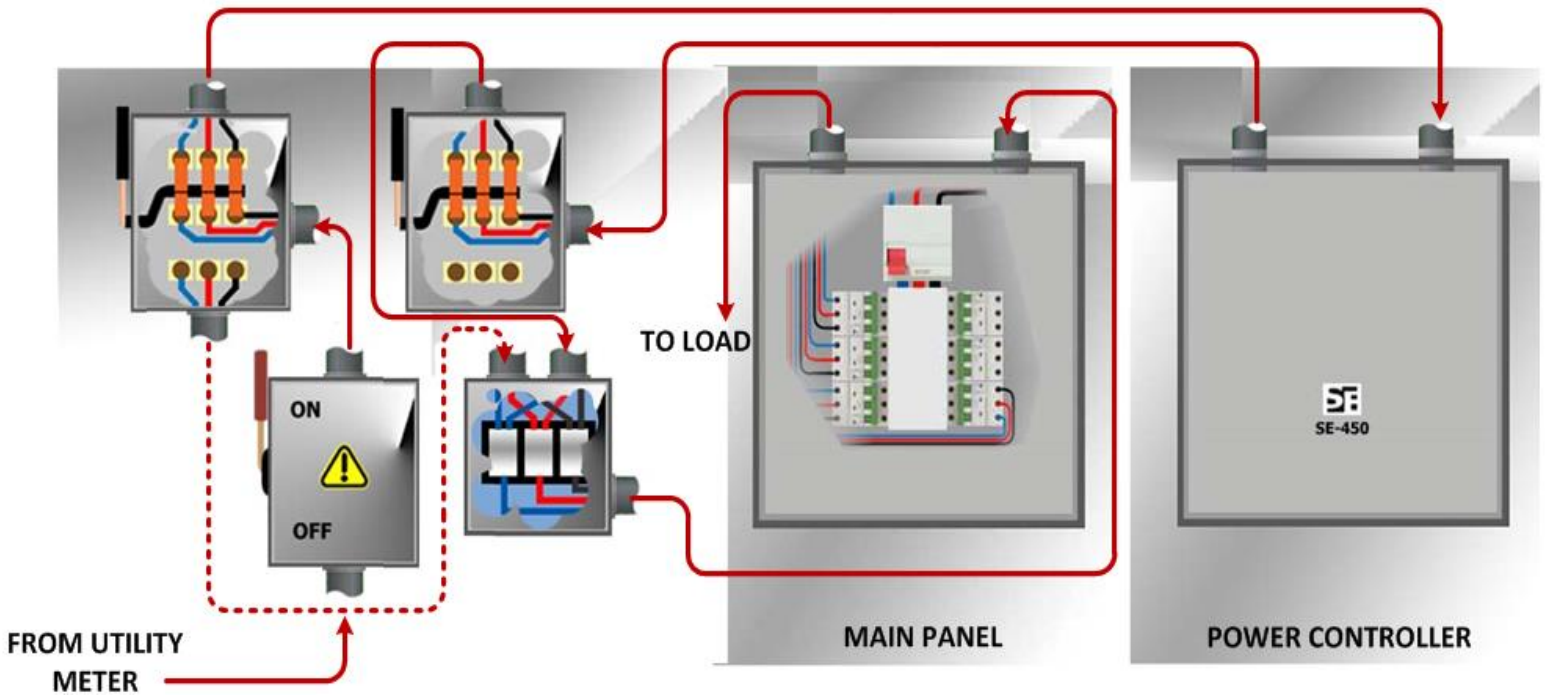
Business Competitiveness

- Design – Build – Lease – Maintenance
- Adherence to our goal of providing the client with sustainable product while ensuring investment recovery before the end of its supported operational life cycle.
- Maintain suitable residual savings from the monthly electricity bill, enabling the client to pay the lease negotiated from the savings that we deliver.
- Materials needed are mostly available locally; it shortens the implementation lead time and product delivery.
- As demand grows, we will outsource programmatic production and assembly of major components through a manufacturing company.

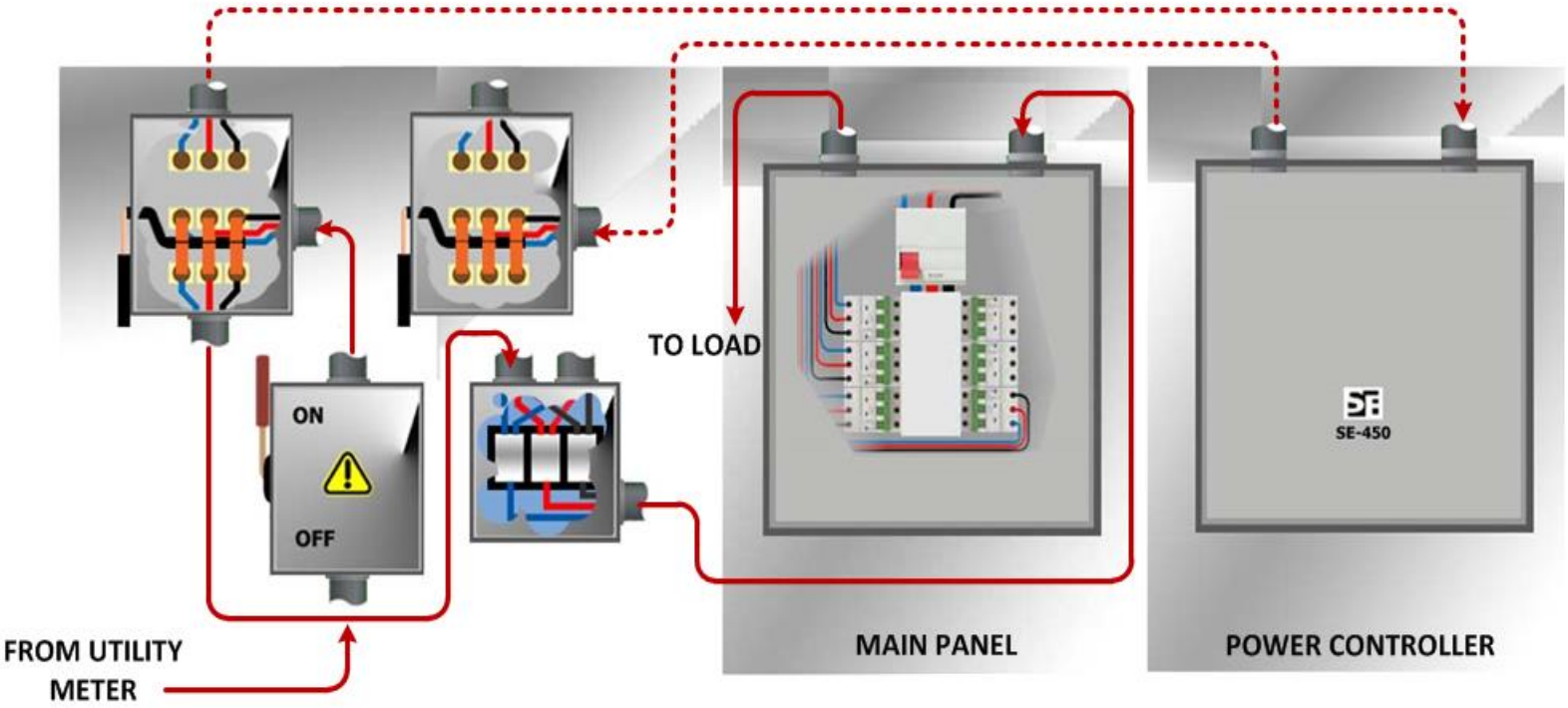
SE-450 Controller Connection



The SE-450 Power Management Controller is installed in-line with the load and the power source, which ingresses the clients' facility through the service entrance. A terminal block between the switch disconnect and the load panel would allow easy integration into the existing power infrastructure.

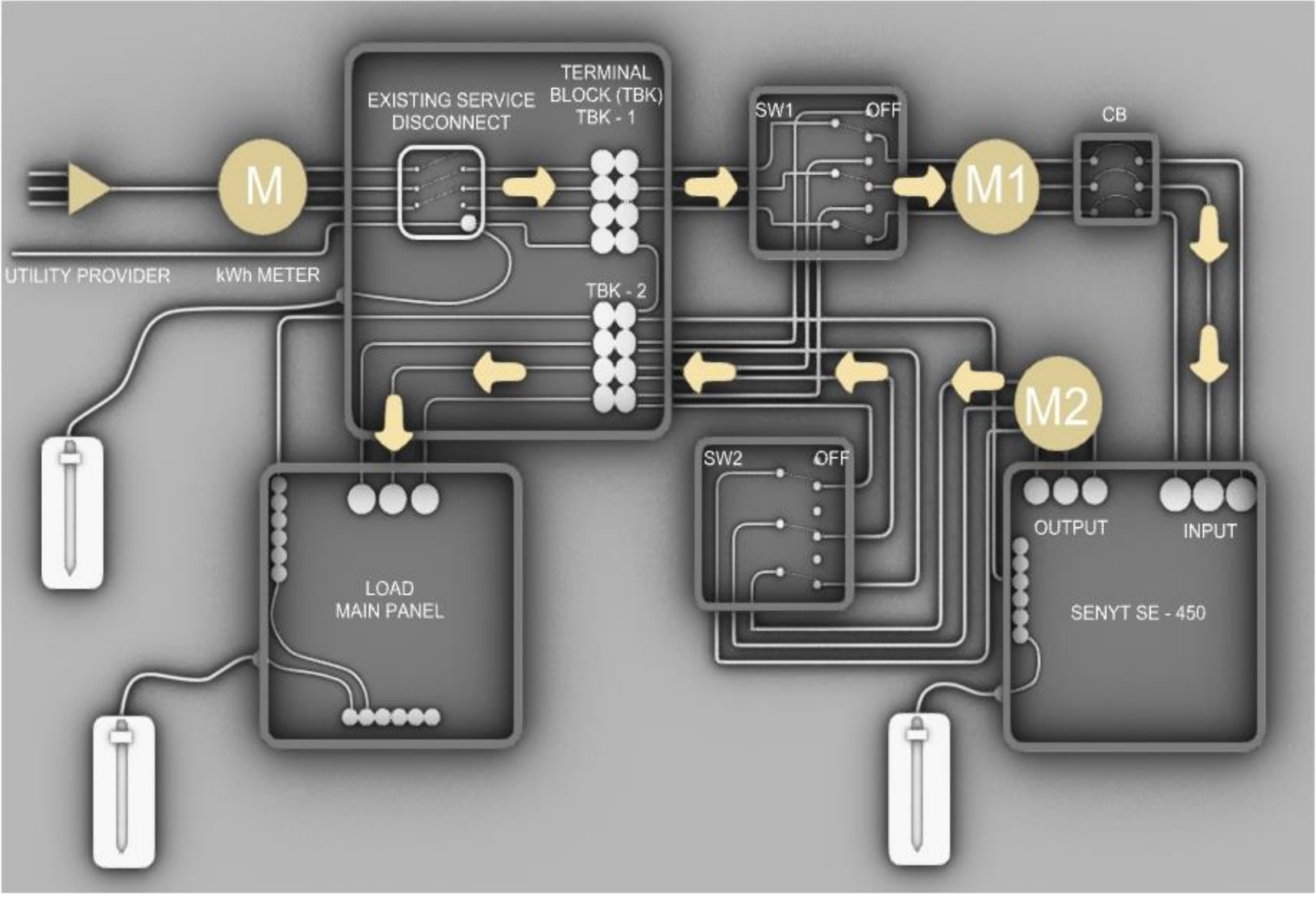
Ideally, two magnetic contactors may be installed to provide redundancy for system maintenance or if a bypass is needed. Alternatively, a set of two switches or a combination of a magnetic contactor will ensure a safe manual transfer of power back to the utility, mitigating the potential impact in production if the unit fails.

SE-450 Controller Bypass



Both a single-phase and a three-phase configuration is supported without exerting tedious changes in the physical construction of the product. Once the ampacity rating is determined, the required setup can be easily provisioned by merely moving the cables to the appropriate terminal block.

Safety notes. It is always a reasonable precaution to disconnect the power source before servicing or repairing electrical equipment. Even if the switch disconnects have been turned off, check the power terminal using multi-meters; to be safe, treat all electrical devices as if it is live.



SE-450 Integration Block Diagram

IMPORTANT! The integration must be thoroughly discussed with the client and fully approved with their Change Management process. Installation of other supporting components such as conduits, terminal blocks, switches, or contactors before the integration is essential. It will serve as a junction point useful in safely isolating the flow of electricity to the system, overly critical in doing maintenance activities. Mounting the SE450 Power Management Controller ahead of the scheduled cutover time will mitigate the production's potential adverse impact**.**

Energy Industry Facts

Electricity is a secondary energy source for many applications that include heating, lighting, cooling, and powering machines.[1] The demand and usage of electric power consistently soar every year, and yet the relentless question of how much less we burn fossil fuels to keep the global temperature well below 2 degrees is even more challenging to meet. It is where our company directs its focus. Decrease the demand from the generation plants through efficient power management – and deliver a stable power needed by the load.

A few of the segments we initially plan to penetrate are the leading supermarkets and hardware supply stores. Supermarkets are among the most energy-intensive commercial buildings, attributed mainly to refrigeration, heating and cooling equipment. Energy costs are typically around 1% of sales, which is about the same as a store's overall profit margin.[2]

As of December 2019, Ontario had the most grocery stores among all provinces in Canada - there are 5,460 grocery stores located in Canada's most populous regions. Quebec and British Columbia ranked in second and third places, with a total of 4,290 and 1,665 stores, respectively. At that time, Loblaws subsidiary was operating 2,429 units nationally.[3]

[1] Natural Resources Canada. (2019, August 9). Electricity Facts. Retrieved from https://www.nrcan.gc.ca/electricity-facts/20068

[2] Natural Resources Canada. (2019, June 17). Energy Benchmarking for Supermarkets and Food Stores. Retrieved from https://www.nrcan.gc.ca/energy-benchmarking-supermarkets-and-food-stores/17188?wbdisable=true

[3] Emma Bedford, E. (2020, February 24). Number of grocery stores in Canada as of December 2018. Retrieved from https://www.statista.com/statistics/459530/number-of-grocery-stores-by-region-canada/last edited Aug 28, 2019

Electricity Consumption

The total electricity energy usage in Canada in 2017 was **1,812 Petajoules (PJ)**. The residential, commercial, industrial, transportation and agricultural sectors all share in the intensive demand for Canadian electricity.[4]

Sector	Energy use (PJ)	% of the total
Residential	604.1	33.30%
Commercial	429.7	23.70%
Industrial	739	40.80%
Transportation	4.4	0.20%
Agriculture	34.8	1.90%
Total	1,812.00	100%

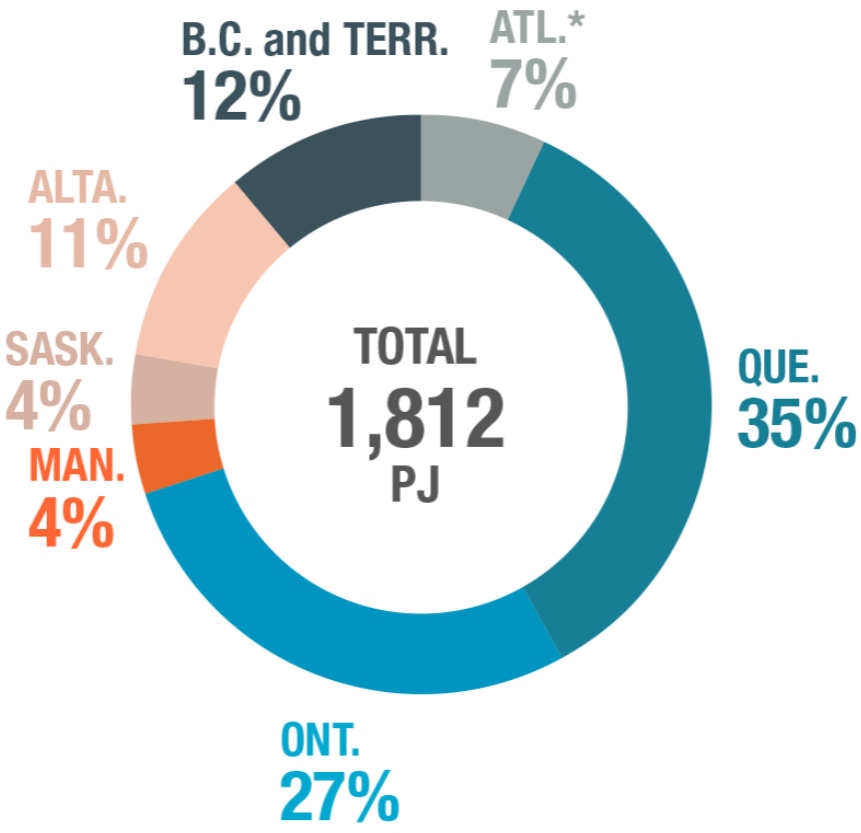
In 2019, the global energy demand grew at a much slower pace than in recent years, limited to only 0.9% compared to an 18-year average of 3%. This deceleration was mainly due to a global slowdown in economic growth and the impact of milder temperatures on heating and cooling in several big economies.

Lower demand from the industrial and residential sectors had contributed to cut electricity consumption by 2.2% in the US.[5]

[4] Natural Resources Canada. (2020, October 6). Electrical Energy Use by Province, 2017. Retrieved from https://www.nrcan.gc.ca/science-data/data-analysis/energy-data-analysis/energy-facts/electricity-facts/20068

[5] www.iea.org (2020, April). Global Energy Review, 2017. Retrieved from https://www.iea.org/reports/global-energy-review-2019

Energy Data Analysis



Electricity use varies greatly from province to province. Provinces with plentiful and cheap electricity from large scale electricity projects like British Columbia and Quebec, tend to use more electricity per person than those provinces who rely on other energy means to do things like heat their homes and water.[6]

[6] Natural Resources Canada. (2020, October 6). Electrical Energy Use by Province, 2017. Retrieved from https://www.nrcan.gc.ca/science-data/data-analysis/energy-data-analysis/energy-facts/electricity-facts/20068

Silicon mineral is the base material of the products we support to distribute. Abundantly found in sands, rocks, clays, and soils, combined with either oxygen as silicon dioxide (SiO2), or with oxygen plus other elements as silicates. Silicon compounds are also found in water, in the atmosphere, in many plants, and even in some animals.

Its semiconductor properties are critical in making discrete components, such as diodes, transistors, and integrated circuits (ICs), used to amplify signals or switch electrical current.

Solid-state devices undeniably became the backbone of modern electronics from radios to iPhones and are found extensively in the computer and microelectronics industries supporting various applications. The advances in semiconductor technology have substantially driven systems efficiency.

Micro-electronics innovation will continue to transform our lives – and at the heart of these technological leaps are intricate and sophisticated systems powered by integrated circuits.

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Environmental Impact

It is inevitable and vital for us to eventually recover essential minerals and resources to support new technologies that would enable human civilization more sustainable.

The socio-environmental damages generated from silica sand mining and its related industrial activities is a legitimate concern that merits a strict assessment. It cannot be overlooked and must be addressed explicitly by all organization involved, even if the degree of exposure is minimal.

Virseges shall take due diligence in researching industries that comply with government standard regulations; and consistently observe the best practices required in dealing with various high-risk mineral extraction and other related processes that may involve in the handling of toxic materials. We must support employers that follow the Code of Practice for Mining and protect their employees and the public from exposure to hazardous substances.

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Consulting