



Introducing the **World's First and Only**  
Ferraris efficiency augmentor module for Electric energy

June 2019 (Updated January 3, 2020)



## Ferraris efficiency augmentor module for Electric energy

To better explain where and how Ferraris products are utilized to Customer, Strategic investors and Financial investors, Ferraris products and its uses have been summarized below. Ferraris have multiple efficiency augmentor module tested runs in majority of its potential usage.

If Ferraris product interests your good company and would like require Information Memorandum for in depth analysis for investment, please feel free to contact [aj@ferrarispower.com](mailto:aj@ferrarispower.com) at your earliest convenience. If you could kindly provide a contact point and email to which we may send the information, we would be grateful.

## Ferraris Challenge



Ever since the commercialization of electricity, there have been an untapped byproduct in form of electromagnetic field generated by flowing currents in power lines. By harnessing the forgotten and unused electromagnetic energy through electromagnetic energy recycling, Ferraris has opened a new pathway for electric power generation and energy recycling technology for the mankind. Ferraris was founded in a strive to harness the power from a magnetic field produced by power lines and transform it into a reliable and countable power source.

Dr. KOO, who is the founder of Ferraris wishes the investors to set their focus and priority environmental social governance with key focus on providing clean energy produced by Ferraris' products through the magnetic energy over the corporate management of Ferraris. The prime directive of Ferraris is to provide clean energy with no environmental pollution around the world to improve and restore environment for the benefit of current and future generations to come.

We have named Ferraris Inc. in memory of Galileo Ferraris.



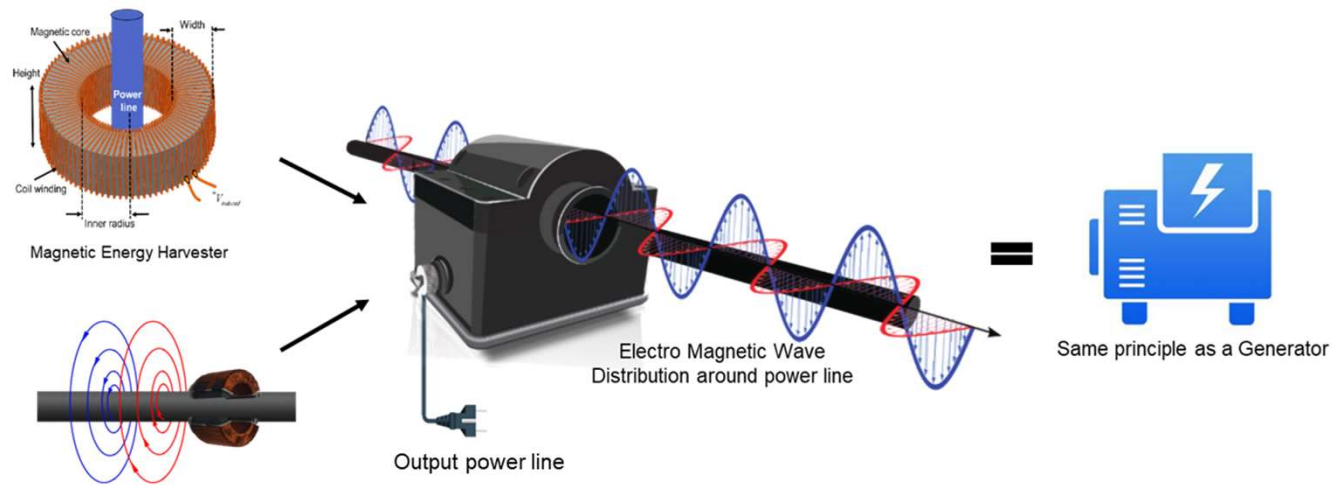
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# **I. Introducing Ferraris products**

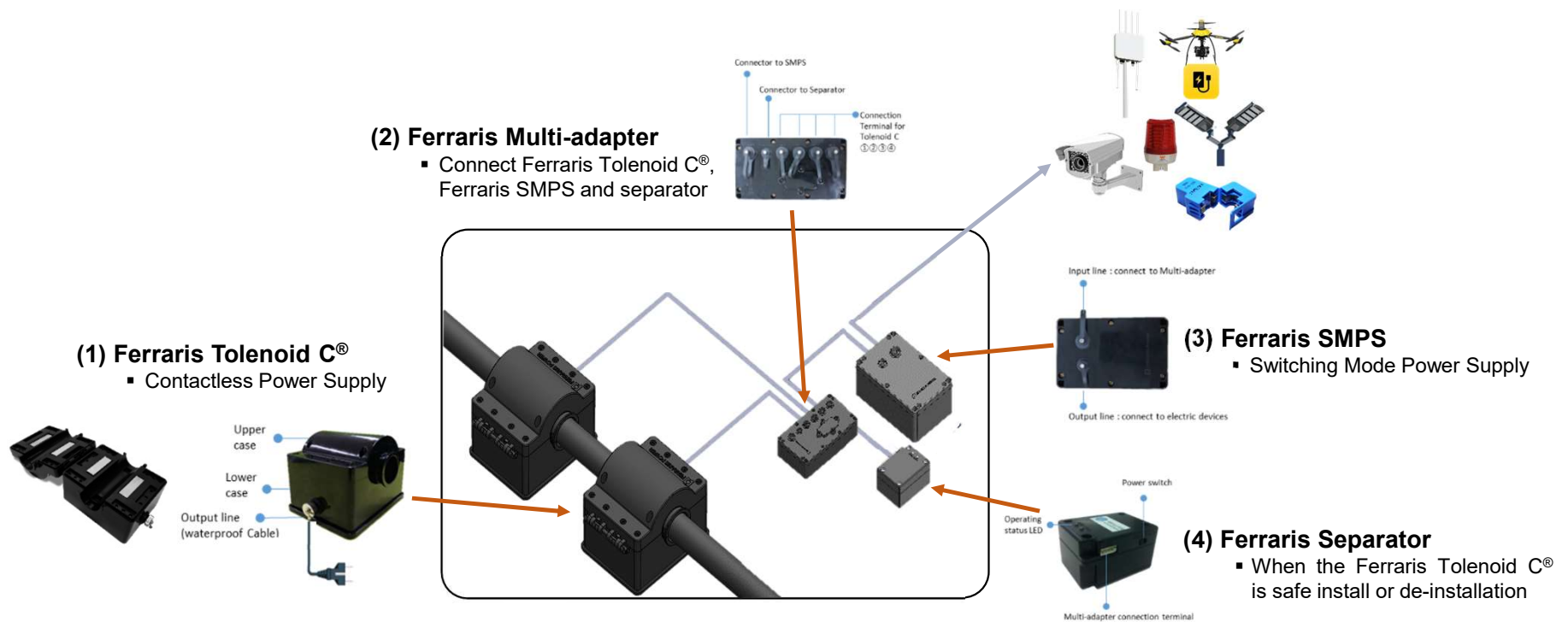
# 1. Ferraris Tolenoïd C<sup>®</sup> Technology

- A Ferraris technology which harnesses induced electrical energy from the magnetic energy variation produced from the power line regardless of the power line voltage. Ferraris Tolenoïd C<sup>®</sup> is designed, developed and manufactured mainly for the electrical power generation. The world's first technology that only Ferraris has – Linear power scalability (<https://youtu.be/Y3IR5djt5hg>), input/output power Variation controllability (<https://youtu.be/z3OLe21eFGU>), Single digit mass production loss ratio.



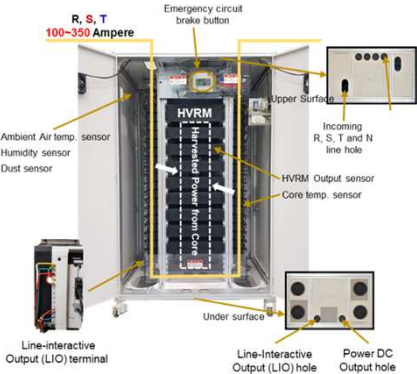
## 2. Ferraris Tolenoid C<sup>®</sup> products

- Ferraris Tolenoid C<sup>®</sup> is designed and developed mainly for the electrical power generation. For further information of the products, refer to “Introducing Ferraris Tolenoid C<sup>®</sup>” report.



### 3. Ferraris ERR (Energy Recycling Reservoir) System

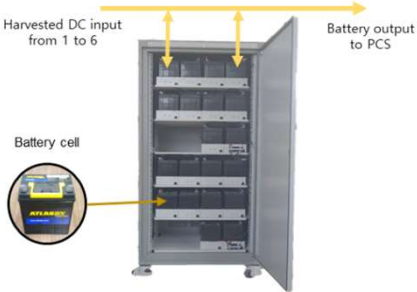
1. We proudly introduce world's first and only Ferraris ERR System created by Ferraris. **The Ferraris ERR System is decentralized power generator.** Ferraris providing a revolutionary paradigm of efficient electric power generation by using magnetic energy harvesting based on existing power lines via the Ferraris ERR System, which composed of multiple Tolenoic C® for high power power (<https://youtu.be/JUolJj0x8qM>) with state of art Linear power scalability technology.



**Ferraris Core/HVRM  
(High Voltage Regulator Module)  
System and LIO power**



**Power Control Subsystem**



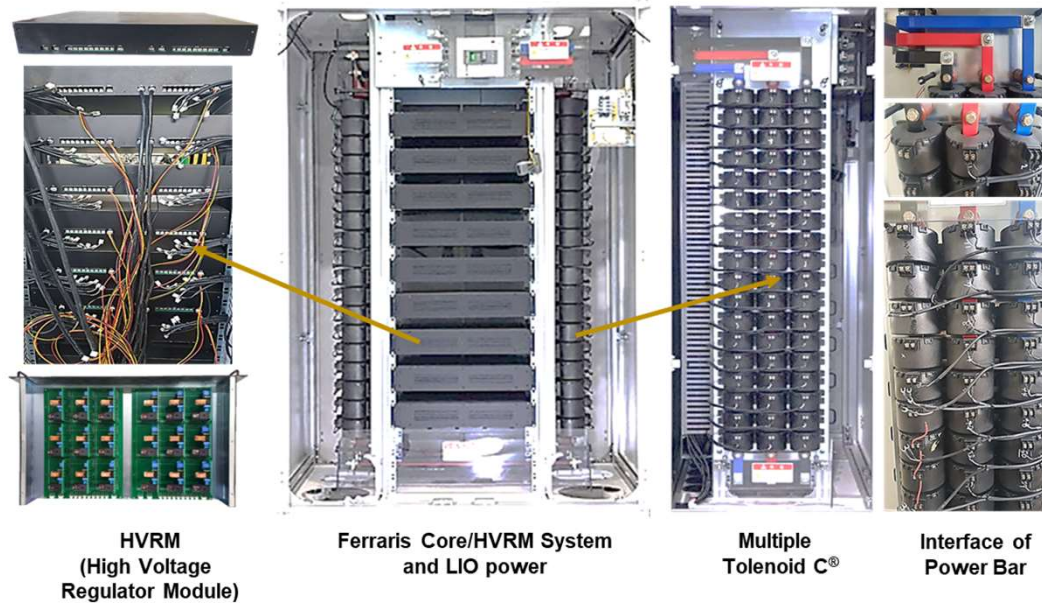
**Battery and BMS Subsystem**



**Remote Monitoring Power and  
Control system for Multi-site**



2. Ferraris ERR System is designed to be multiple contactless (Linear power scalability technology) attached to incoming power lines to harness induced electrical energy from magnetic energy variation produced from power lines. The harnessed electrical energy then can be stored in the battery to be used when needed or real-time distributed to the Load, which means magnetic energy harvesting and using power for Load are happened at the same time.



3. The Ferraris ERR System is normally installed using contactless method on three-phase four-wire power lines (R, S, T and N). Ferraris ERR System can be cascade (serially) and/or Parallel connected and is highly scalable with decentralized installation. This scalable feature enables customer decide electric power capacity of Ferraris ERR System depending on the environment and customer requirement easily.
4. Under assumption that Ferraris ERR System is installed in 100, 200 or 1,000 different buildings, sudden power outages or shortages arising from emergency situations, the Ferraris ERR System can be used to provide steady electrical energy to power the building's load. This could potentially be used to save lives by providing alternative to medical facility's backup generators as the network of buildings (**InterBuilding Power Energy Network**, where Building-to-Building power energy share) using Ferraris ERR System can support such facilities in the direst circumstances.
5. This is a simple example of Ferraris ERR System's future use, and Ferraris envisions further application of its Ferraris ERR System beyond interBuilding power energy network to an **InterCity Power Energy Network** where City-to-City power energy share where a stable emergency power can be provided to the most critical electric infrastructures such as hospitals in state of emergency.
6. Potential power backup system feature in case of main power outages.
7. Ferraris have developed Ferraris ERR System with remote monitoring power and control systems that can simultaneously operate on more 1,000 different sites.

8. For example, the high power lines, such as commercial building, server operating company, EV charging station (level 3 charging), markets (Whole foods market, Costco, VONS, Ralphs etc.), cold storage, frozen foods storage, factories, solar farm, wind farm and more potential customers can be easily used to harness the magnetic energy constantly from their existing power distribution lines without upgrading power source.
9. Therefore through Ferraris ERR System, customers can vastly improve electric energy usage efficiency, such as reducing reactive power and improving power factor and so on, ultimately reducing costs from power consumptions over the long run.
10. For further information of the products, request to “Introducing Ferraris ERR System” report.

## 4. Estimated electricity production by Ferraris ERR System

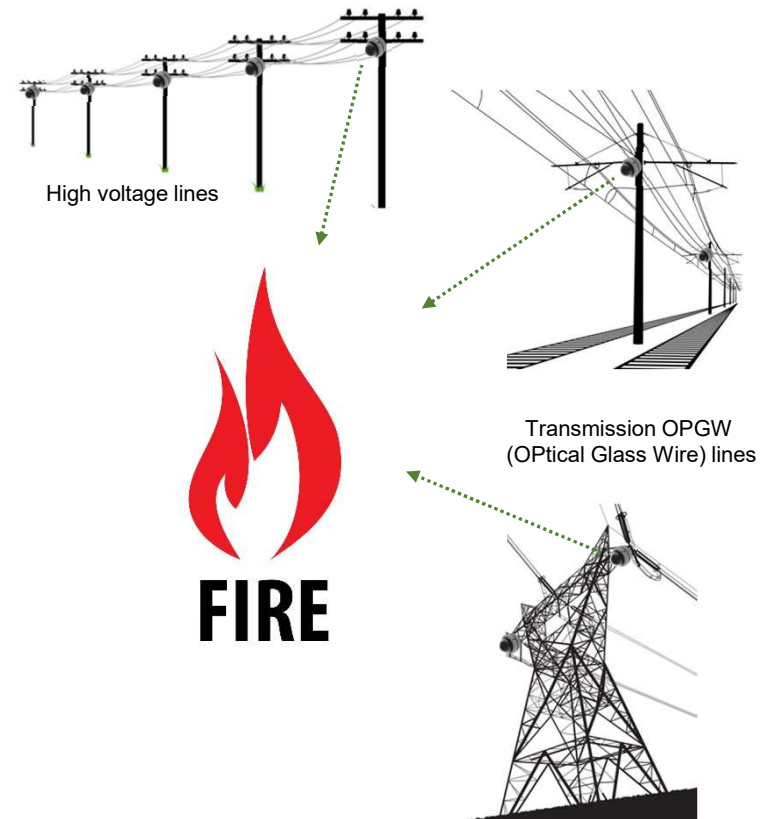
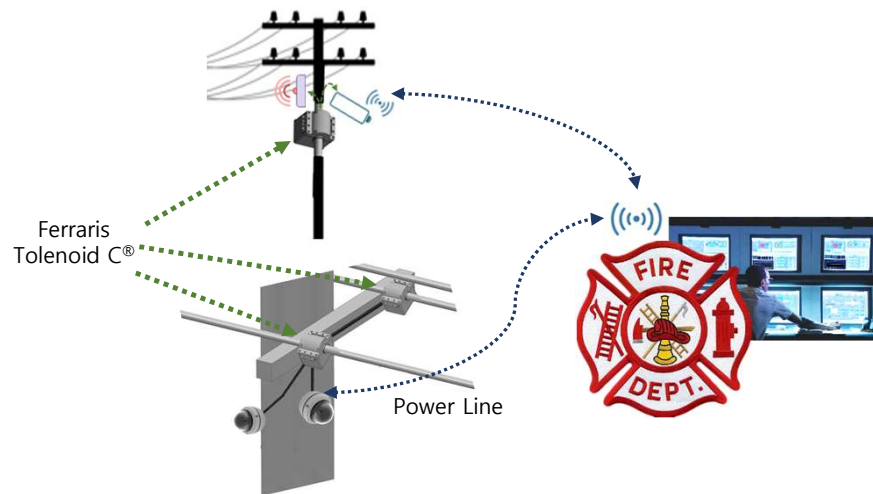
- For further information of the case 1 to 7 configuration, request to “Introduction to Ferraris ERR System” report.

Case	Configuration of Ferraris ERR System	R, S, T Line Current (Ampere)	Using R, S, T Line	Using Ferraris Core/HVRM system (20kWh)	Supply power to the Load	Supply power (kWh/each the Load)	Total supply power
1	Basic	100~350	1	1	1	20	<b>20 kWh</b>
2	Cascade	100~350	1	3	3	20	<b>60 kWh</b>
3	Cascade	100~350	1	3	1	60	<b>60 kWh</b>
4	Cascade	100~350	4	12	4	60	<b>240 kWh</b>
5	Parallel	200~600	1 (line split)	2	1	40	<b>40 kWh</b>
6	Parallel & Cascade	200~600	1 (line split)	6	1	120	<b>120 kWh</b>
7	Parallel & Cascade	200~600	4 (line split)	24	4	120	<b>480 kWh</b>

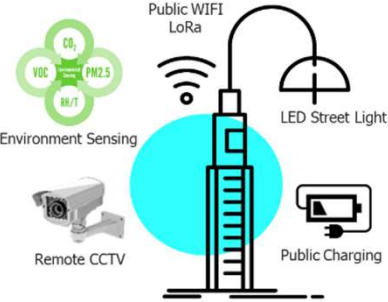
## **II. Power application using the Ferraris Tolenoid C<sup>®</sup>** **(Power supply solution for Above / Underground)**

# 1. Wildfire early warning system on Power pylons without transformers

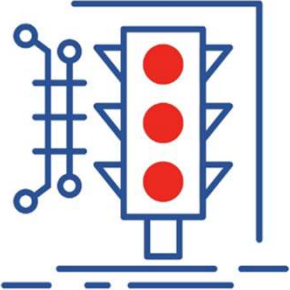
- Ferraris solutions can provide electric power to remote devices anywhere power lines can be found. The contactless power supply (Tolenoid C<sup>®</sup>) can be installed on existing high voltage lines, transmission OPGW line and provide power to various devices.
- Devices such as CCTVs, Fire sensors, Lighting sensors, Wireless network devices and more can be setup using Ferraris Tolenoid C<sup>®</sup> to form an early warning system against Wildfires.



## 2. Above ground for Smart cities



Smart Pole  
w/ 5G Repeater

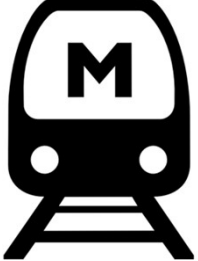


Smart Traffic lights  
and controller

## 3. Underground for Smart cities

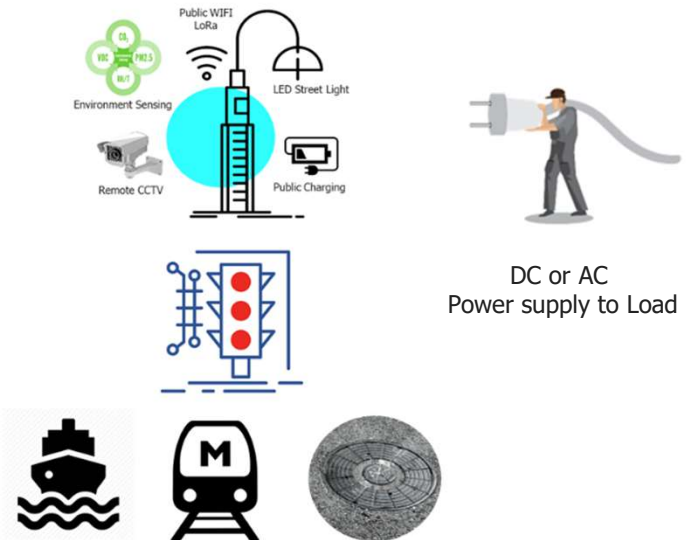


Electric IoT sensor,  
Manhole fault detection system or  
Partial discharging system  
for underground transmission line zone

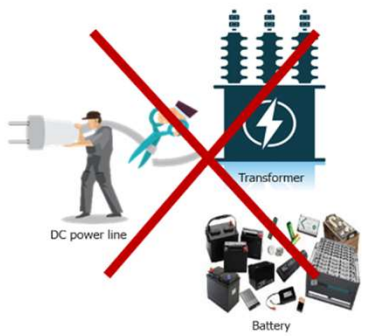


Distribution power line  
monitoring system  
For Train monitoring system

# 4. Contactless power supply solution (Tolenoid C<sup>®</sup>) for Smart cities



Ferraris Tolenoid C<sup>®</sup>



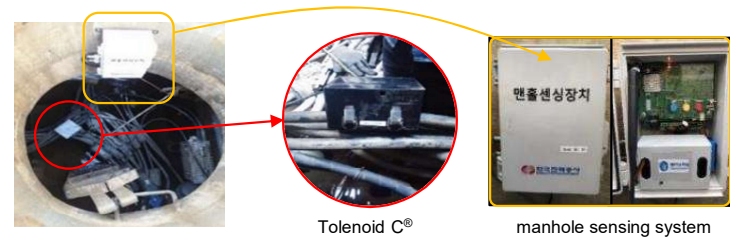
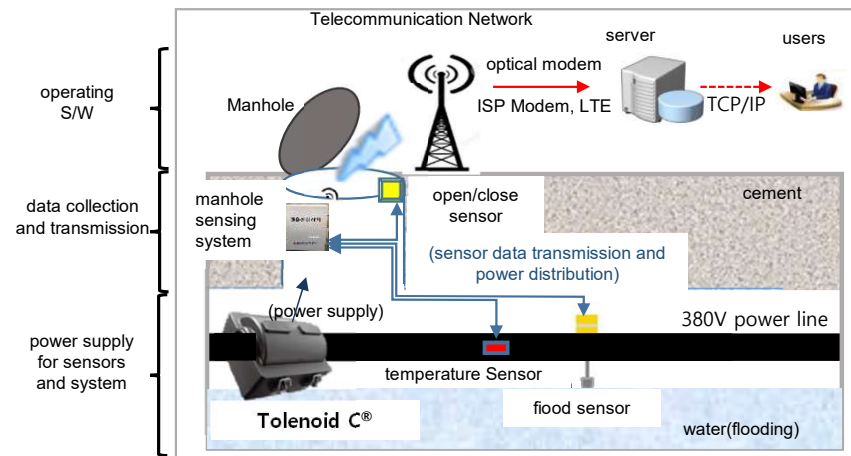
### Key obstacles of current power supply

- A Huge investment in the usage of electric power line via transformer is required
- Long construction period, sometimes couple of years
- Continuous investment in operating & maintenance cost



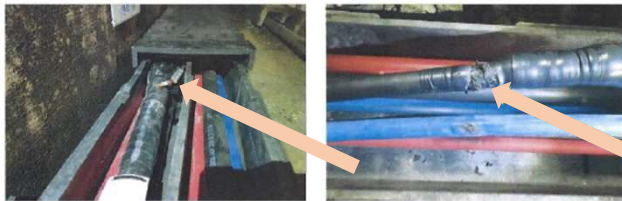
## 5. Manhole status information system

- Ferraris smart grid solutions provide electric power to devices anywhere where power lines are, such as distribution line and underground line. The contactless power supply device(Tolenoid C®) can be installed on existing high voltage lines and provide required power to various meters and sensors. (Environmental conditions are considered, such as temp. and water)
- With conventional solutions, it is difficult to secure separate conventional power source, such as 110V or 220V) when dealing with underground power lines. Power can be acquired from an underground high voltage power line and used for the power source of various meters and sensors installation.

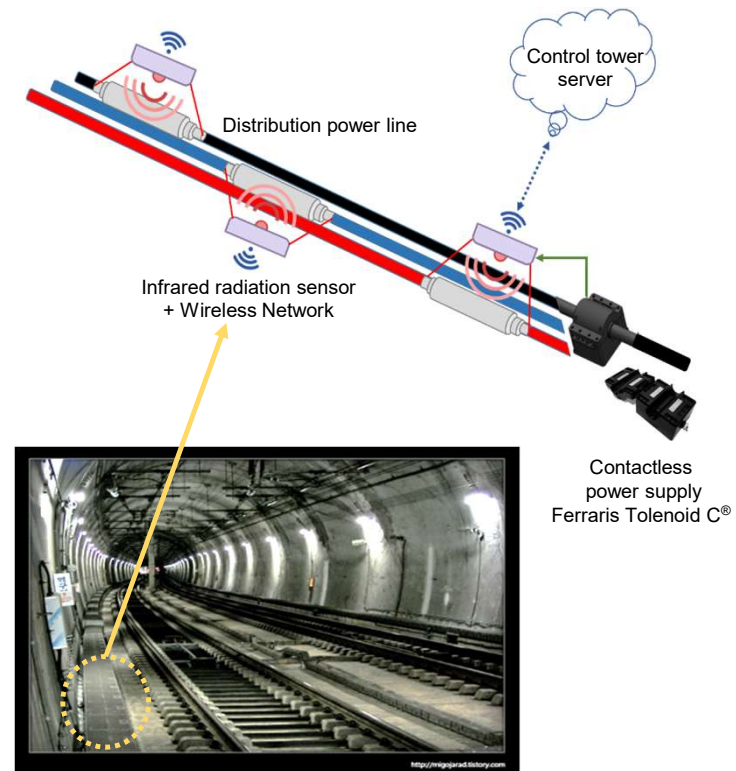


## 6. Monitoring system for Metro distribution power line

- Definition - Firewatch system that monitors changes in temperature in real time on the bridged point of interface power line along the 22.9kV distribution power line of Metro train system.
- Utilizes Infrared radiation sensor, Wireless network and Ferraris Tolenoid C®(contactless power supply - power generator).
- Installing Ferraris Tolenoid C® provides stable power to the monitoring system for 8 to 10 years, thus reducing battery replacement costs and following labor cost for the battery replacement and hazard material.
- Inside distribution power line trough.



Point of interface power line  
(Normally 22.9kV line)



### **III. Power application using the Ferraris ERR System**

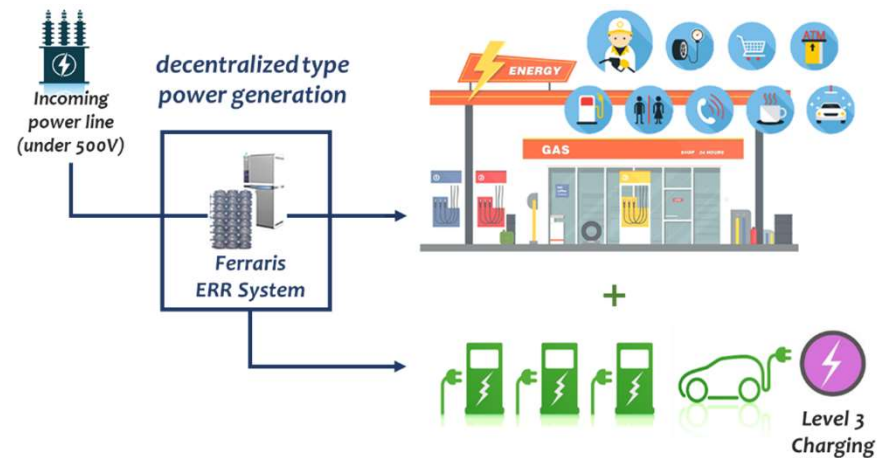
# 1. EV Charging station (Level 3 Charging)

- Current EV Charging station



- ✓ Current EV Charging station can not support Level 3 charging without changing Incoming power line method.
- ✓ Level 1 Charging - Up to 2 miles, 30 minutes
- ✓ Level 2 Charging - Up to 10 miles, 30 minutes

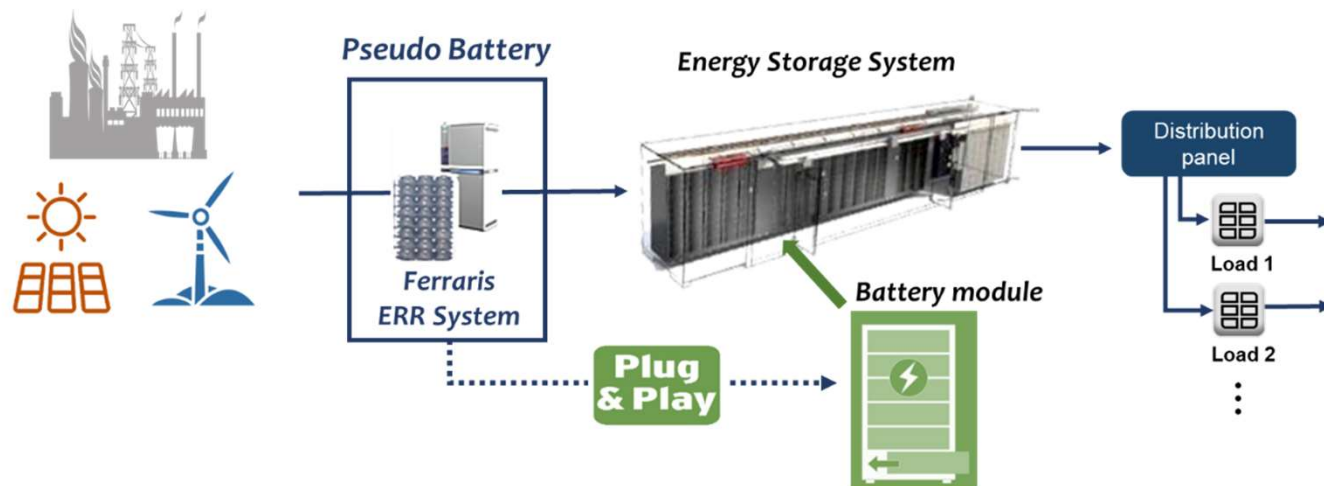
- In the future, EV can recharging *Anywhere*



- ✓ Currently, Gas station using electricity for customer service.
- ✓ Ferraris ERR System make Gas station possible to support **Level 3 charging.**
- ✓ DC Fast/Level 3 Charging - Up to 90 miles, 30 minutes

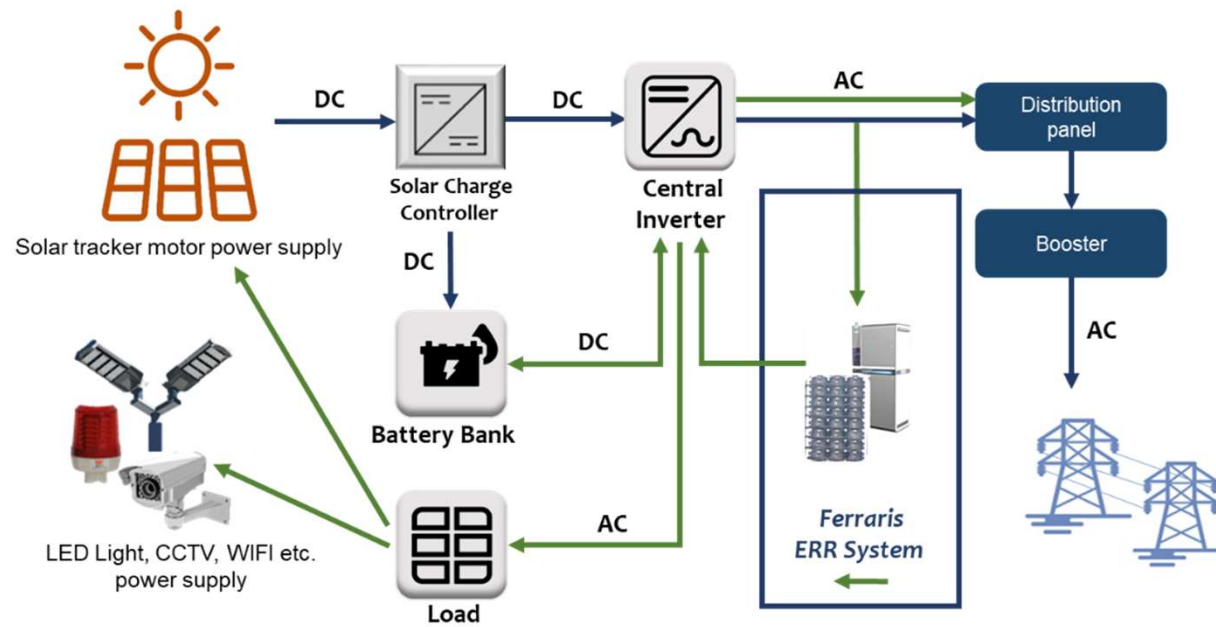
## 2. Pseudo battery for Energy storage system

- Replacing defective batteries, without interruption of the power. Make possible preventive and predictive maintenance for ESS battery module management.



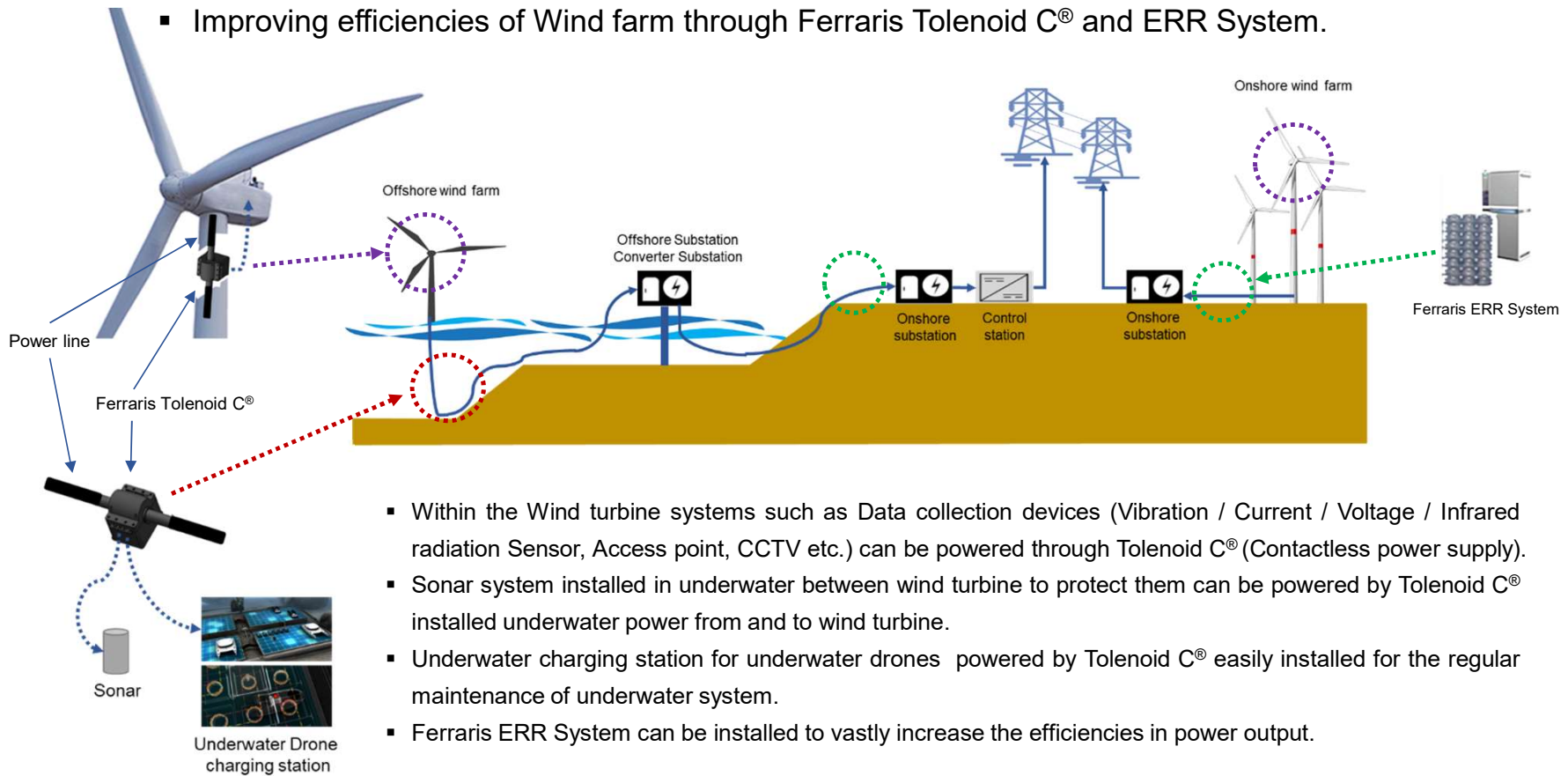
### 3. Solar farm

- Improving efficiencies of Solar farm through Ferraris ERR System.



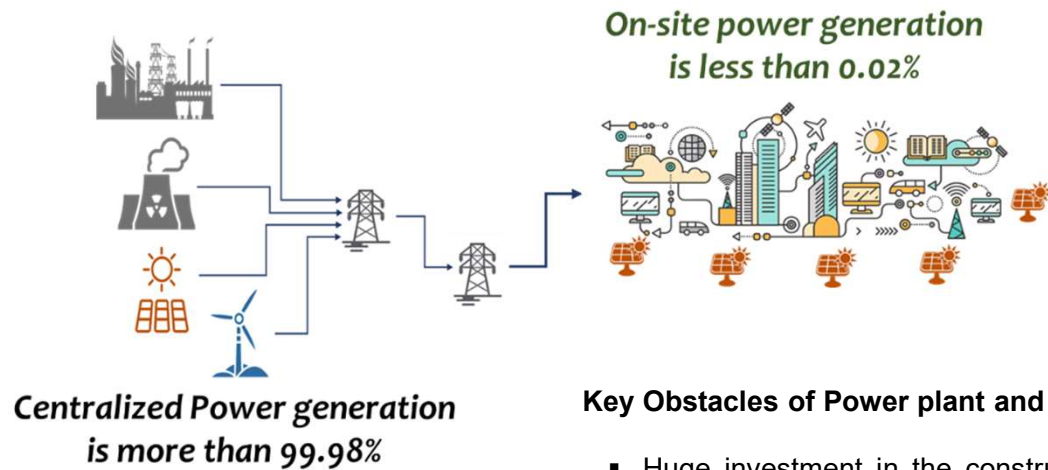
## 4. Onshore/Offshore Wind farm

- Improving efficiencies of Wind farm through Ferraris Tolenoid C<sup>®</sup> and ERR System.



## 5. Decentralized power generation solution for Smart cities

### 1. Current electric power generation for Smart cities



#### Key Obstacles of Power plant and Grid

- Huge investment in the construction of Power plants, Transmission tower and Grid system
- Construction period is 2 to 9 years or longer
- Continuous resource and water supply
- Continuous investment in O&M cost

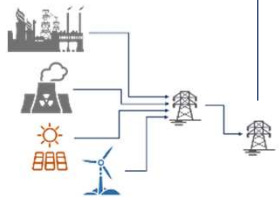


## 2. Future electric power generation for Smart cities

*Decentralized power generation to be more than 25%*



*Numerous Ferraris ERR System Installation*



**Centralized Power generation  
to be less than 75%**

Ferraris value lies in providing Ferraris ERR System solutions for customers with needs as listed below.

- Seeking electric energy saving due to new governmental regulations and policy.
- No Environmental Pollution.
- Reduce the huge investment expenditure.
- Economical O&M cost.
- Resources that will be required is Only incoming power lines in the building.
- When seeking for electric power generating and cost reduction (typically in Residential, Commercial, Industrial and Transportation sector).
- Shorten construction period (1~2 months/site).



***Electric energy is Electromagnetic energy,***

***Our approach to a new paradigm of efficient electric power generation and recycling !***



*If there are any questions, please feel free to contact Ferraris Inc. as below,*

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