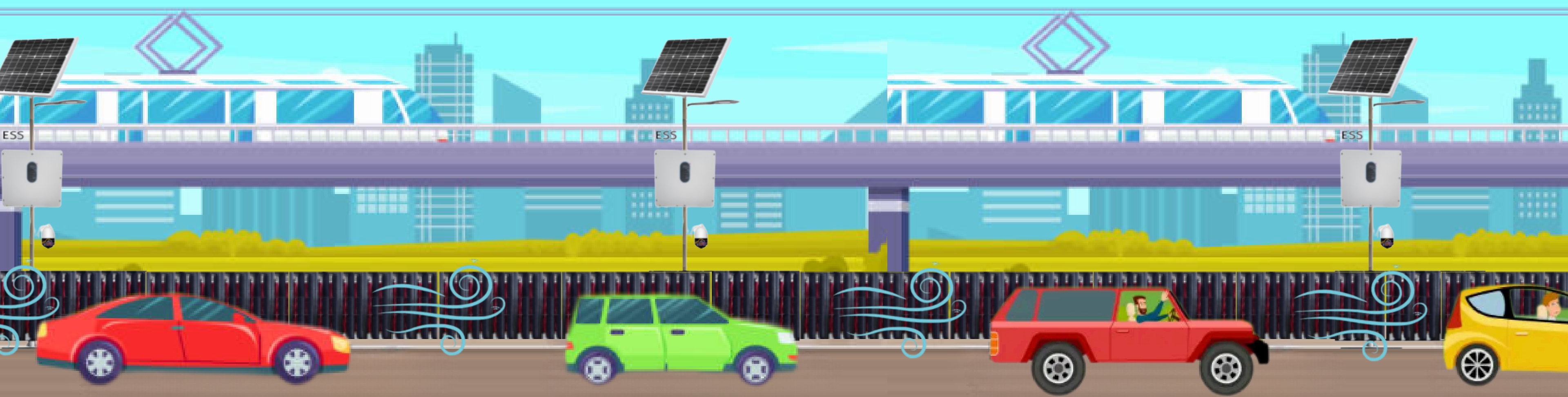




Presented by: Kim man ik

“ENERGY HIGHWAY WIND POWER SYSTEM”

Innovations and Infrastructure for a Sustainable Future

SL SEONGIL ENERGY INC

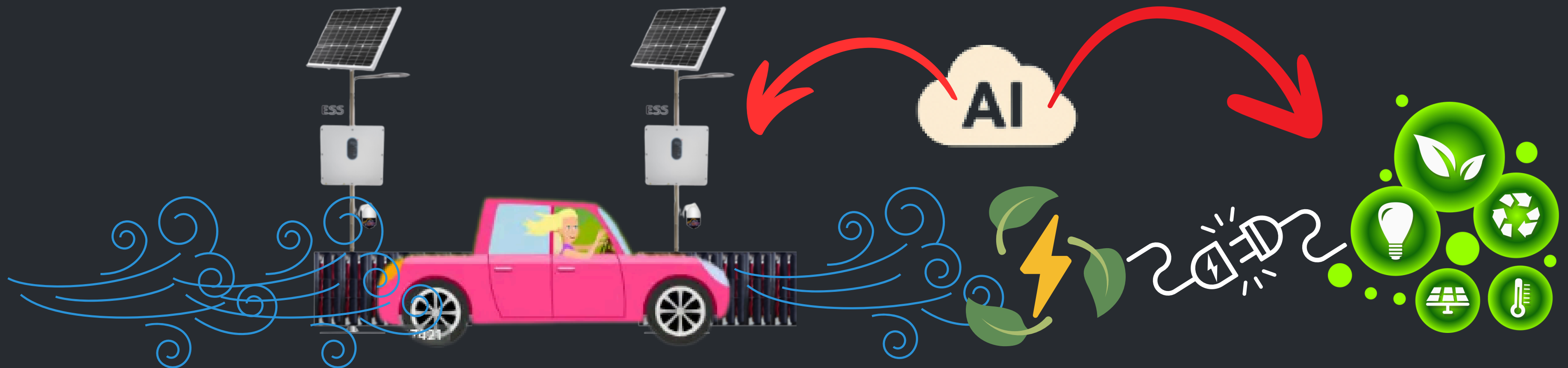
Website: www.seongileng.kr | Contact: kjs8876@naver.com

"We propose a new approach utilizing existing road infrastructure."

Highways, soundproof walls, streetlights, traffic systems → infrastructure already spread nationwide

Combine Wind + Solar + ESS + One-Code Inverter → transform into distributed power plants

"Instead of building new transmission grids, let's turn existing roadways into power networks."



⚡ Concept

Roadside Wind → Electricity (Wind from Roads, Turned into Power)

Harvest wasted driving wind → supply as distributed power



⚡ Why the Energy Highway is Essential

1) Imminent National Energy Crisis

Data center boom → AI & cloud driving massive electricity demand

Expansion of EV charging → surging grid load

Seasonal peaks (summer/winter) already threaten economic and national security

2) Traditional Approaches Are Too Slow

Nuclear, offshore wind, large-scale solar → require 7–10 years due to land acquisition, compensation, and conflicts

HVDC & long-distance transmission → repeated resident opposition, long lead times, huge costs

Korea's land scarcity & high land cost → large-scale solar/wind is nearly impossible domestically

3) Energy Highways Can Be Deployed Immediately

Utilize existing infrastructure: highways, roads, soundproof walls, streetlights

No land acquisition cost, no conflict

Modular deployment → phased rollout possible within months

Localized production & consumption → avoids the need for long-distance transmission & substations

4) Safer and More Reliable than Centralized ESS

Large-scale ESS = catastrophic fire/explosion risk → major social hazard

Distributed small-scale wind + solar + ESS per segment → localized, no systemic risk

With AI integration → ensures stability, efficiency, and resilience

5) Public & Private Investment Participation

Segment-based distributed generation = modular investment units

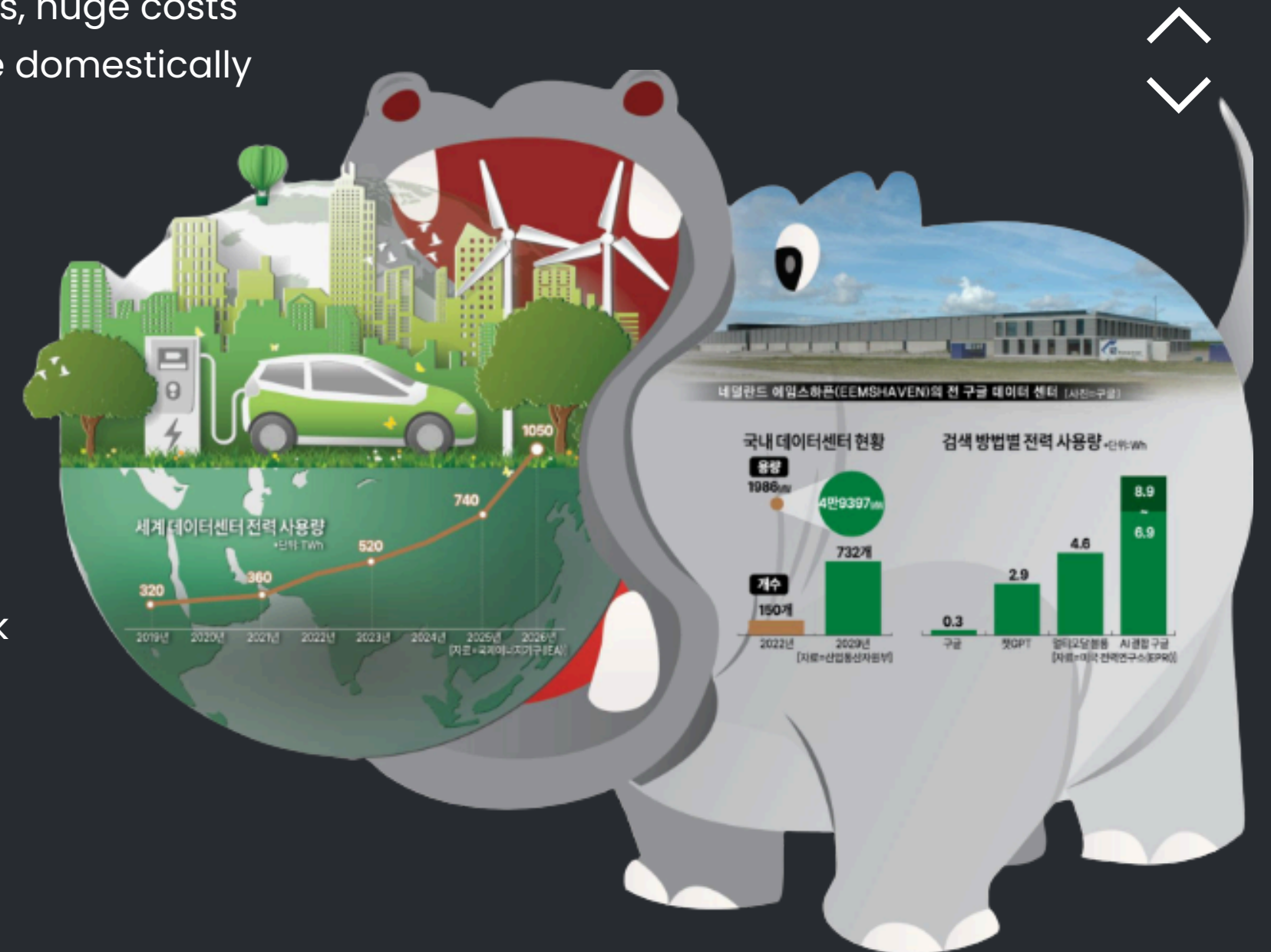
REC sales & electricity trading → new profit model

Enables private capital participation without government reliance

📢 Key Message

"Current solutions like nuclear or HVDC require 10+ years and are unrealistic for Korea due to limited land and high costs.

The only practical and immediate alternative is the Energy Highway – distributed wind & solar power along existing road infrastructure. No land, no conflict, no delay → deployable right now."



"1 km (one-way) = 14 lamp posts × 3 kW = 42 kW.

Over a 100 km section (one-way), it supplies a stable 4.2 MW to the local grid without intermittency.

For both directions, this doubles to 8.4 MW over the same 100 km section."

Power Supply: 3 kW

"70 units of 6 kW wind turbine modules"

"For a 3 kW supply, up to 420 kW of wind power modules can be installed – about 140 times more capacity, ensuring there is no intermittency issue."

Inverter: 3 kW + Battery: 10 kWh

Each unit is an independent ESS energy storage system.

"As a low-voltage (48V) ESS battery, it has no risk of fire spread and allows rapid recovery."

70M

HIGH VOLTAGE

LOW VOLTAGE

"Since the Energy Highway supplies electricity directly to the low-voltage grid, it can significantly reduce the power losses that occur in the high-voltage transmission and distribution network."

"China and Saudi Arabia can install large-scale solar power plants in vast deserts, making them even more cost-effective than oil.

However, in Korea, land is scarce and expensive, so the same approach is not competitive. Instead, by building an 'Energy Highway' that combines wind and solar power on existing highway infrastructure, we can achieve the same level of economic efficiency without additional land costs."



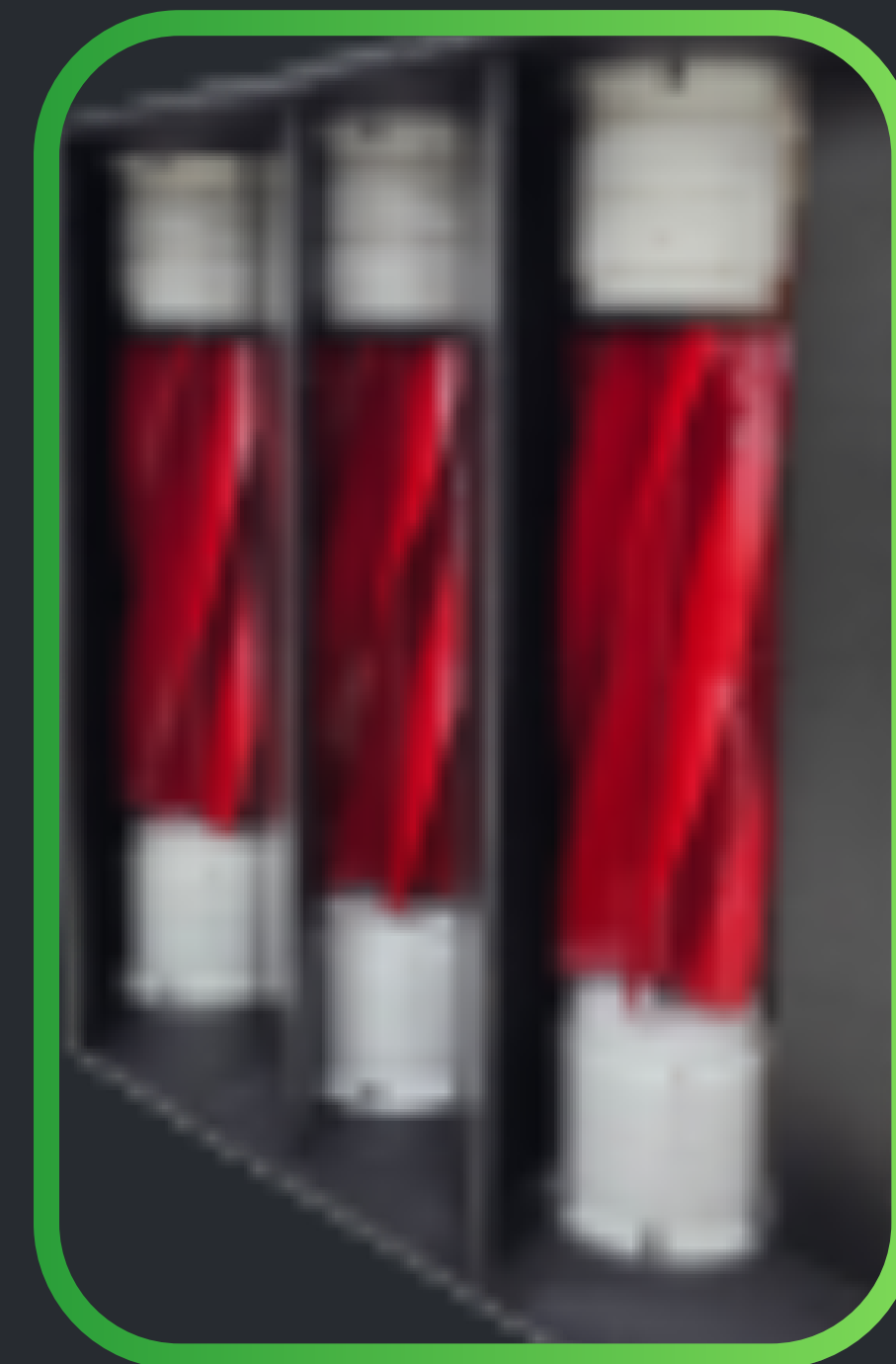
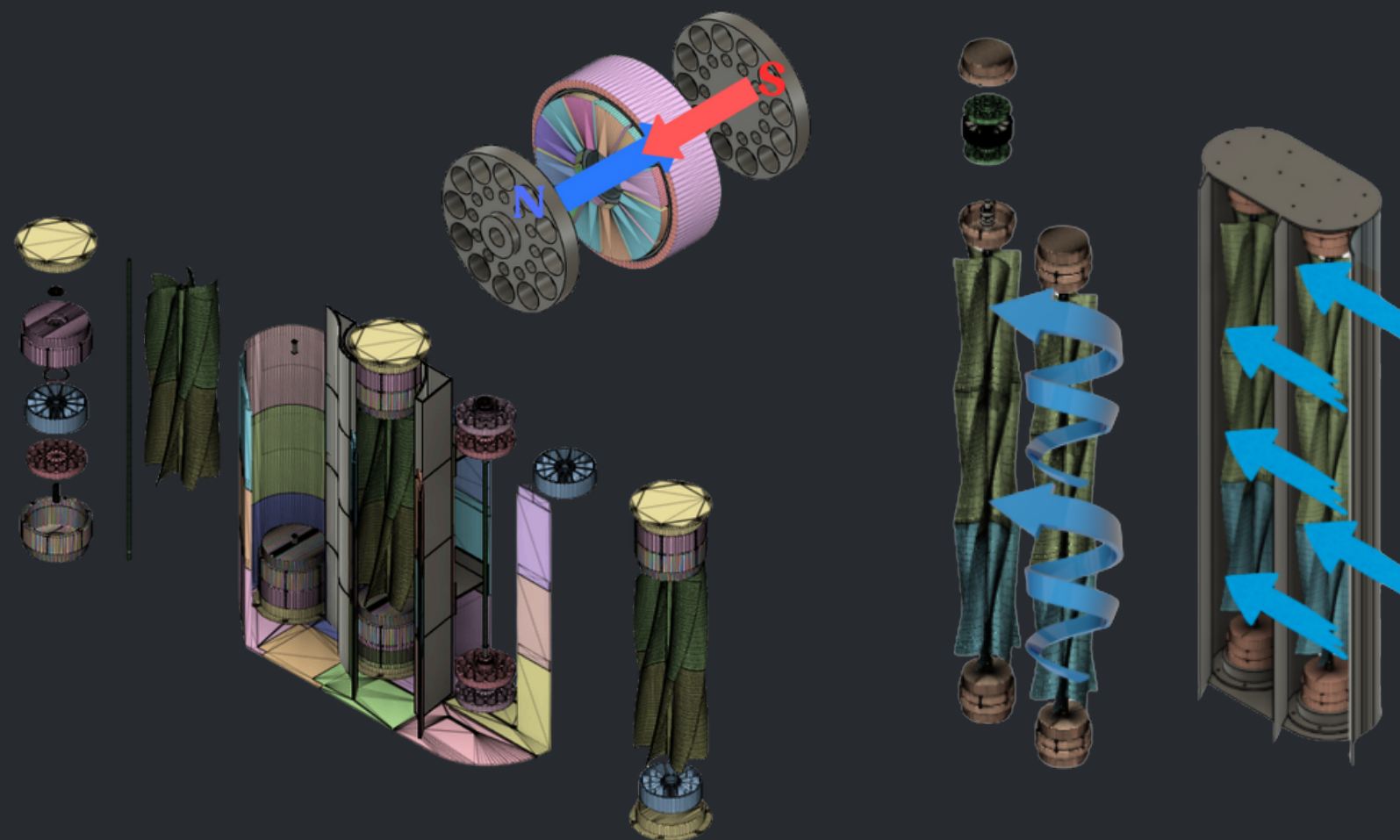
Key Advantages of the Generator (Summary)

Horizontal Opposed Double Generator → Balanced rotation, enhanced output stability

Double Rotor Structure → Concentrated magnetic flux, delivers stator-level output even in compact size

Screw Blades → Minimized friction and noise, smooth and quiet operation

Compact Design → Minimal installation constraints, suitable for urban areas, vehicles, and tower applications



"There has never been a wind turbine this smooth and this powerful."

"The world's only compact wind turbine that is both the quietest and the strongest."

"Maximum smoothness, maximum power."

"On the road, on buildings—smoothest and strongest, anywhere."

"Uniquely quiet, uniquely powerful – the next-generation wind turbine."





One-Code Inverter – Key Features

Grid-Connected + Stand-Alone → Automatic switching with a single code

In case of blackout → Instantly switches to stand-alone mode, ensuring stable power supply

Upon recovery → Automatic re-synchronization without conflict

Eliminates complexity and risk of collision found in traditional two-code systems

Simplifies installation & operation, reduces maintenance costs

💡 “The One-Code Inverter is the only solution that seamlessly integrates grid and stand-alone operation with a single code.”

ONE CODE INVERTER
PCS 3KW BATTERY 12KWh



Commercial ESS

ONE CODE INVERTER 산업용 3KW



Industrial ESS

전시회



ONE CODE INVERTER
PCS 1.5KW BATTERY 2KWh



Portable Plug-In ESS

ONE CODE INVERTER
PCS 3KW BATTERY 3KWh



Residential ESS



“The first inverter connected with a single code—no electrical work required.”

“The simplest power-line connection solution, unlike anything before.”

“World’s only One-Code technology—seamless connection without complex electrical work.”

“One line of code, infinite possibilities – redefining power connection.”

“Simpler connection, stable power – a way never seen before.”

 Message from the CEO

Hello.

We are here to open a new path that the world has never seen before.

The Energy Highway —

This is not just an idea.

It is the first true solution that goes beyond the limits of traditional transmission expansion,
and a blue ocean market that no one has ever entered.

With decades of expertise in wind power technology,
our knowledge and dedication have borne fruit in the form of a breakthrough innovation:
a system that transforms the wind flowing along our roads into electricity.

We do not let wasted energy slip away.

Driving wind, natural wind, and solar power —
we harvest them all to reshape cities, industrial complexes,
and even the national power grid.

A future where roads themselves become the power grid,
and where the wind itself becomes electricity.

The starting point of that journey is the Energy Highway.

CEO: Kim Young-Sil





Company Introduction

Seongil Energy Co., Ltd. is a startup founded just two years ago as a one-person venture. Despite its short history, professional team members have voluntarily joined to collaborate on the development of prototypes for our core technologies. Although we have not yet reached the stage of formal employment based on labor costs, specialists from multiple fields are working together to advance our research and development.

Our co-founder brings over 30 years of experience in wind and renewable energy technology, and the accumulated know-how has now borne fruit at Seongil Energy. Without outsourcing, we have independently completed the design of both wind turbine generators and blade structures. As a result, we developed a world-first integrated system that combines BLDC motors and generators with hydrogen power. Based on this, our wind-hydrogen hybrid generator has now reached completion as an innovative new technology.

This system solves two long-standing problems:

The inability to install large wind turbines within urban environments.

The insufficient power supply of small wind turbines when used alone.

For the first time in the world, Seongil Energy has implemented a modular small wind turbine cluster system capable of concentrated power supply. More than just a turbine, it responds even in light urban winds, and when there is no wind, hydrogen generation alone ensures power supply. When the wind does blow, the combined effect of wind and hydrogen generates even greater output. This enables stable, non-intermittent power supply, representing not only an energy revolution but also a new global opportunity.

Furthermore, while virtually all inverters worldwide are built on a two-code system, we have successfully developed our own One-Code Inverter. Unlike the conventional two-code method, which requires complex power line construction and separate connections, our solution allows simple parallel connection to existing lines, delivering a breakthrough in renewable energy deployment.

Today, nations around the world are investing heavily in grid expansion. Yet, even in renewable energy adoption, transmission infrastructure shortages and grid instability remain critical issues. Seongil Energy's technology provides a core solution: a distributed system that supplies renewable power directly into cities and infrastructure without requiring massive new transmission lines. This is more than just a technology—it is a practical alternative that can reshape the global direction of energy transition.

That said, we acknowledge that such an ambitious and revolutionary technology cannot be fully realized by a startup alone. While we bring the expertise and the innovation, partnerships and investment are essential to lead the market forward. We sincerely hope to meet strong partners who can join us in ensuring that this technology becomes a breakthrough model of Korea's K-Energy industry and expands across the globe.



CONTACT US AT

Mobile Number : +82-10-4405-5604

Website : www.seongileng.kr

Email Address : kjs8876@naver.com

SL SEONGIL ENERGY INC

