

**High performance  
and low cost –  
a novel method  
of wireless energy  
transfer**

**REASONANCE**

Wireless. Indeed

# Wireless energy transfer

## Current situation



Relevant main wireless energy transfer solutions:

a. Inductance or capacitance method, transferring energy for up to 5 cm

b. Magnetic resonance, transferring energy for up to 20 cm

Both have certain limitations in power, distance, design freedom and safety. Few relatively effective solutions are very pricey.

That is why wireless power transfer has not yet been massively implemented in real-world products or particularly in e-vehicles.

The real wireless technologies boom requires not only efficient, but also cost-effective solutions. Current methods are not.

# REASONANCE

is the long-awaited answer

REASONANCE is a fundamentally new technology that differs from all known methods of wireless transfer

# REASONANCE technology description

REASONANCE brings the technology to the next, advanced level:

- it combines both resonant inductance and capacitance packages in one single element

At the same time, our design solutions allow the coil itself to become a capacitor of increased capacitance. While everybody else has wired connected oscillating circuits which consist of 2 elements, we have a single-element oscillating system which performs both functions at the same time. Moreover, the number of oscillating circuits is unlimited.

- magnetic field is generated by both conductivity and currents

In REASONANCE system, we managed to transmit electric current as displacement current, not conductivity current. Electric current is transmitted through a dielectric (alternative current “going through” a capacitor) as displacement current and generates a magnetic field around itself with similar intensity.

# REASONANCE vs. other wireless technologies



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## Transferring wireless energy

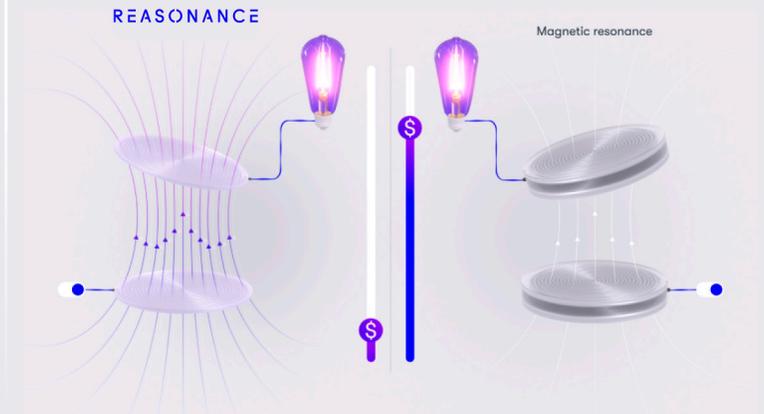
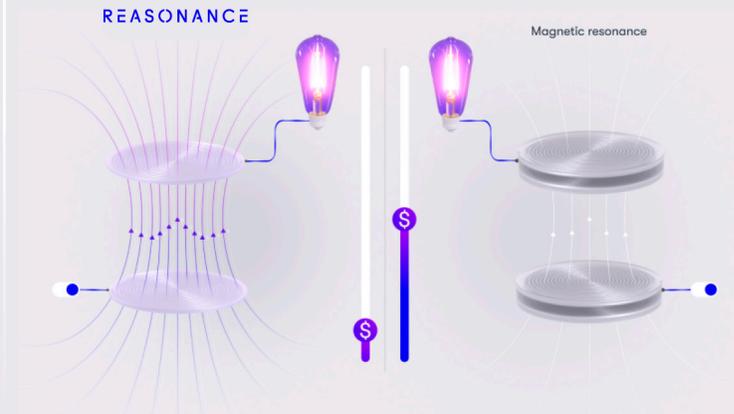
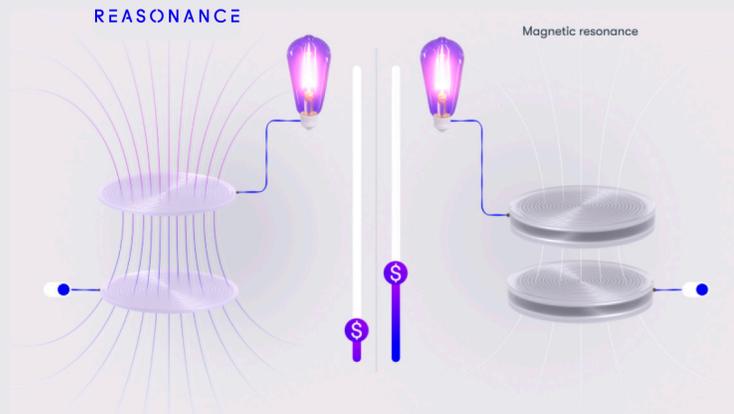
REASONANCE provides a size and cost-effective solution compared to other magnetic resonance technologies existing today.

## Increasing the gap

REASONANCE maintains the same efficiency and keeps costs down at larger distances while other magnetic resonance technologies dramatically increase their expenses, and it is an open question whether they can actually do it or not.

## Misaligning the coils

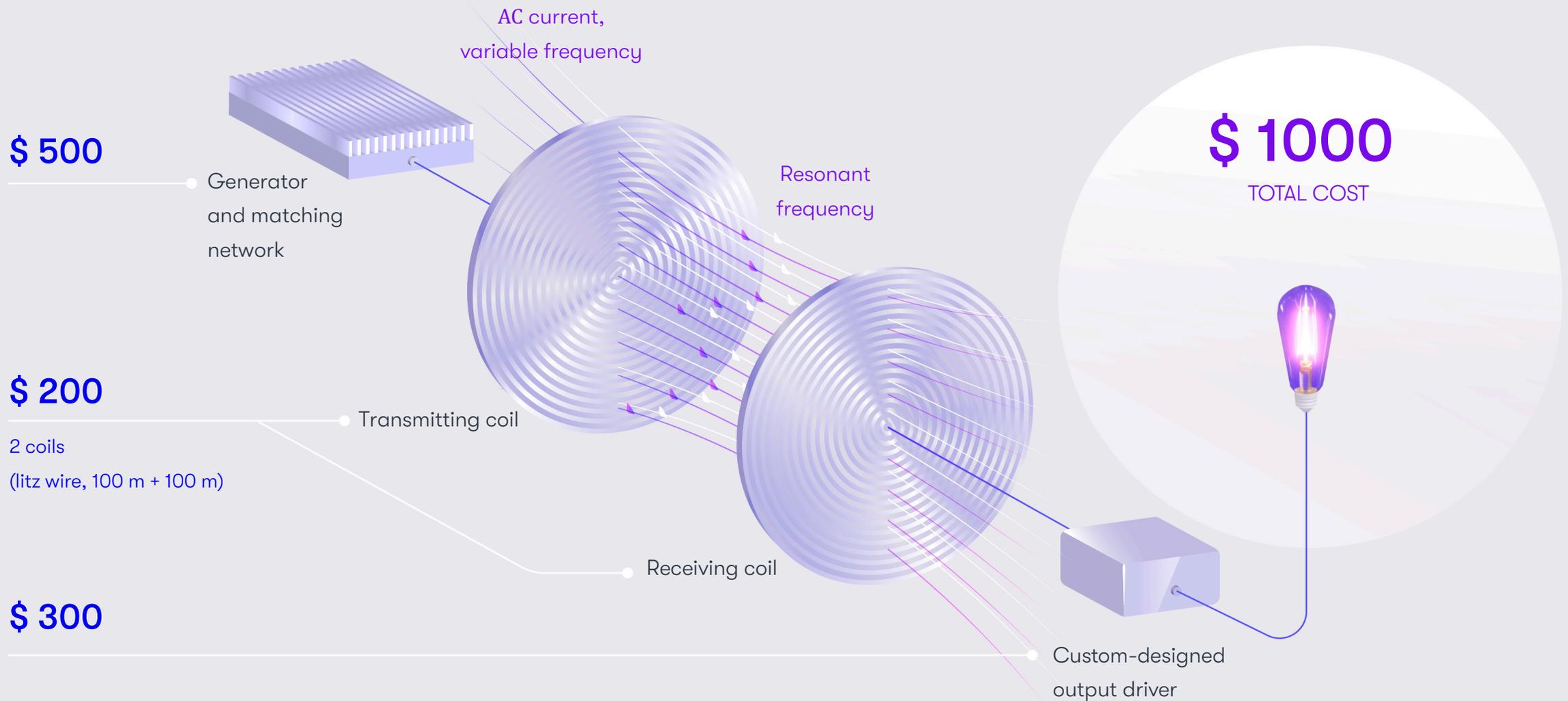
REASONANCE maintains the same efficiency and keeps costs down even when the coils are misaligned while other magnetic resonance technologies dramatically increase their expenses to keep transferring energy.



# REASONANCE advantages for the real-world use



# REASONANCE target cost



# Possible applications

Any device that uses electrical power and wires can be charged wirelessly.



## Houses

Houses can be equipped with completely cordless kitchen. You can charge your devices by simply leaving them on the table or move your wireless TV set closer to your bed.



## Logistic terminals

Forklifts can work non-stop using wireless charging lines integrated in the pavement. No time wasted while recharging. Fewer machines, fewer people. Logistic drones can be fully autonomous and work non-stop, too.



## Nautical ports and airports

Aircrafts and vessels of any type can get electricity without any cords in a much safer way. Convertible equipment is not a problem anymore.



## Offices

Smart office spaces with no wires and compatible with any devices. No need to match plug & socket types anymore!



## E-vehicles, smart roads

E-vehicles of any type can be charged on parking lots, garages, and special areas. And more importantly, they can also be charged on the go using smart roads. That will remove "the range anxiety" for e-cars and we will finally be able to behold smart cities and smart highways.



## Robots, quadcopters

Multipurpose robots and quadcopters can be fully autonomous and function non-stop. This may lead to a massive growth in autonomous technologies.



# Current status and vision

## Current status:

We can transfer up to 10 kW of power at frequencies less than 85 kHz at 93% efficiency (grid-to-battery) and with an air gap equal to diameter of the transmitting coil.

10 kW

power

85 kHz

frequencies

93%

efficiency

## Potential:

REASONANCE technology can be customized to the specific engineering needs. Power, transfer distance, frequency, and alignment angle are all personalized. Therefore, REASONANCE technology can be integrated into a wide range of industrial products.

\* REASONANCE also complies with SAE J2954 standard for wireless charging of e-vehicles

# Video

Here are some video  
that demonstrate  
REASONANCE  
technology

**1.** [TV powered by wireless energy transfer](#)



**2.** [Transfer distance of 30 cm](#)



**3.** [Transfer distance of 1 m](#)



**4.** [Changing the distance and misaligning the coils](#)



**5.** [Electrified road solution](#)



**6.** [REASONANCE vs. magnetic resonance](#)



# Team

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**Anton Vishnevsky**

Founder & CEO

MSc, Financial University, Russia  
Anton Vishnevsky was the Chief Financial Officer at one of the largest industrial groups in Russia. Served in executive and non-executive positions in many public and private companies. His 20 years of experience span business development and investments in technological venture projects.



**Oleg Trubnikov**

Chief Engineer

MSc, National University of Science and Technology MISIS. Electrochemistry.  
Has 15 years of experience in R&D, worked at Institute of Physical Chemistry, the Academy of Sciences of the Soviet Union. Has 10 years of experience in business management in private companies. Co-author of patents.



**Andrey Tarasov**

CTO

MSc, Novosibirsk Technical University, Physics, Radio Engineering. MBA.  
Holds 25 years of experience in R&D and management in automation, telecom, and power industries. Areas of interest: energy transfer by standing waves, wireless power systems. Co-author of patents



**Marina Dobrinchuk**

Head of Marketing

The Chartered Institute of Marketing, UK  
Holds more than 15 years of experience in strategic and international marketing, mainly in B2B. Her expertise covers marketing strategies and communications for start-ups and innovations.

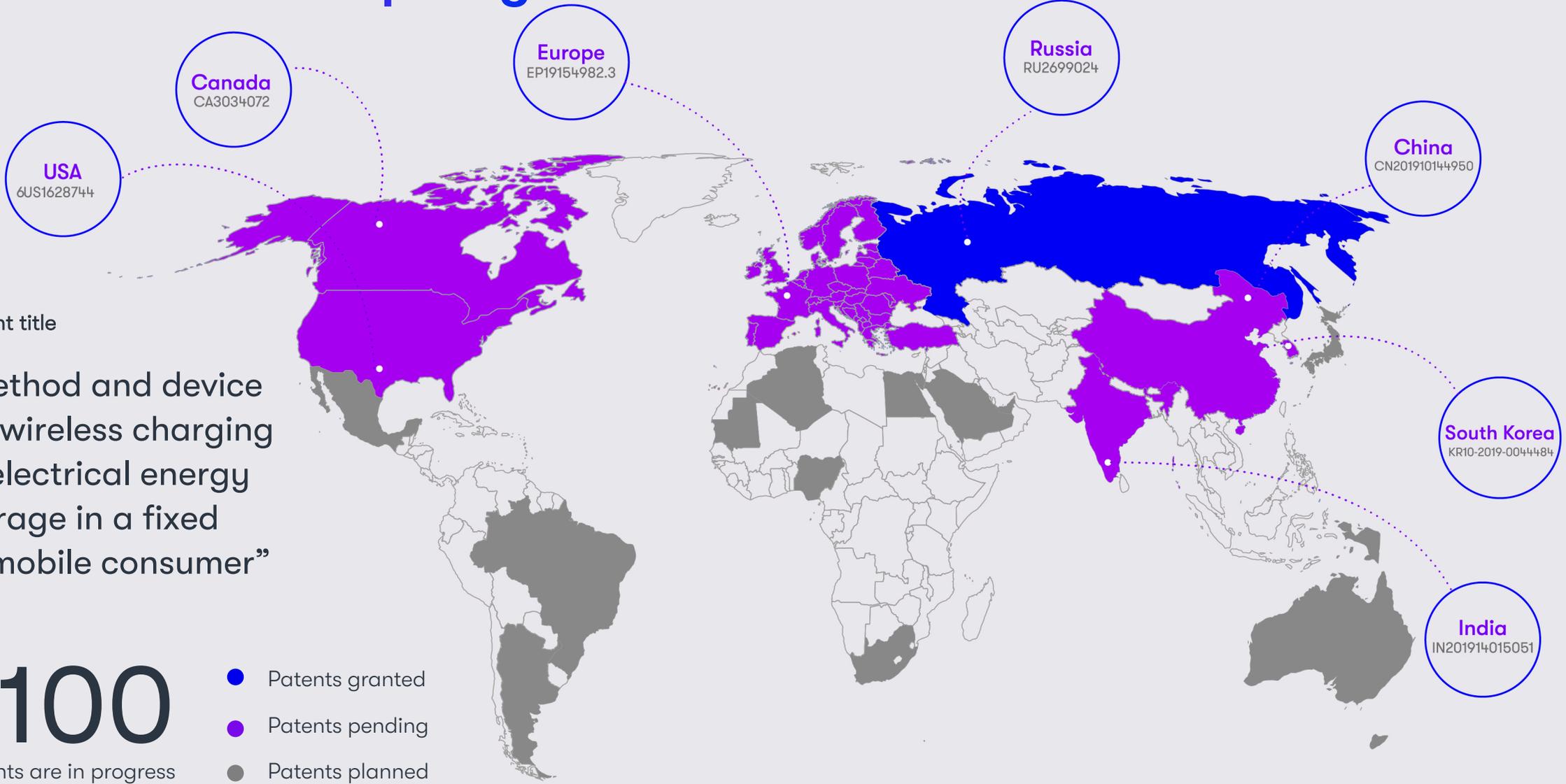


**Vladimir Trubnikov**

Inventor

MSc, Moscow Power Engineering Institute (MPEI), Electrical Engineering.  
Head of the Laboratory, Technical Director at Scientific Research Institute of Semiconductor Devices. Areas of interest: standing wave method of energy transfer. Author of scientific papers, co-author of patents.

# Intellectual Property



Patent title

“Method and device for wireless charging of electrical energy storage in a fixed or mobile consumer”

# >100

patents are in progress

- Patents granted
- Patents pending
- Patents planned

# Collaboration

We invite technological partners for collaboration. We provide access to our technology for industrial partners so that they can use it in their products, thus significantly improving their efficiency, usability, and market potential.

We are ready to co-develop engineering solutions together with technological partners for implementing in specific industrial applications and commercial products.

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Feasibility.  
Freedom.  
Future.

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Thank you for your attention.

Let's make the wireless future possible!

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