SME Instrument – Phase 1

Title of proposal:

1. EXCELLENCE

Our company has developed an installation for wireless electricity transmission based on geomagnetic oscillation technology. Wireless power could reduce demand for power cables while making gadgets more durable, eliminate the need for throwaway batteries, and even accelerate the adoption of electric cars.

Wireless Charging Market size was valued at over USD 3 billion in 2016 and will grow at more than 13% CAGR estimation from 2017 to 2024[1]. Growing demand for smartphones is driving the adoption of the market. Chargeable devices such as tablets and smartphones will be easy to carry, thereby modernizing and meeting the demand for safe, standardized, efficient, and portable power recharging options.

Factors such as mobility issues and longer charging times of devices pose as a potential challenge for the overall wireless charging market growth. Most consumer devices can only be charged with proximity of receiver or the battery with the charging pad. To overcome these issues, OUR COMPANY are conducting research to manufacture a device which can transfer power in moving devices and do not require to be in direct contact with the charging devices.

1.1. Objectives

The main objective of this project is to develop a device for wireless power transfer. Wireless power transfer can make a remarkable change in the field of the electrical engineering which eliminates the use conventional copper cables and current carrying wires. Based on this concept, the project is developed to transfer power within a big range.

1.1.1. Expected outcomes

The expected outcomes of the project include:

1. The full development of a technology for wireless electricity transmission.
2. The commercialization of this technology to the energy sector, both at national and international level.
3. The establishment of strategic alliances to commercialize the wireless devices, through electronic vehicle companies, mobile phones developers and special medicine equipment developers.

1.1.2. Specific objectives for the feasibility study

In order to verify the technological/ practical as well as the economic viability of the innovation, a feasibility study and an elaborated business plan will be carried out in the phase 1. The first one seek will provide insights and bottlenecks on the capacity of the company for a successful technology development and commercialization. The elaborated business plan needs to be realistic and serve as a guide the proposal to be developed in the phase 2.There are four objectives to be aware of during the preparation of the feasibility study.

The first objectives related to the evaluation of the technical/technological feasibility: the study should confirm whether the technology can eventually be adapted to the production capacities required by targeted customers, and whether the characteristics of the resulting processed material may be further improved to comply with the necessities of consumers;

The second objective is focused on the economic viability, and includes market studies to analyze the possibilities of commercializing the technology in the energy sector;

The third objective refers to the definition of business needs and technology drivers in the medium-term, including the assessment of the company innovation capabilities and the elaboration of the business plan;

The fourth objective consists of the integration of the technical, economic and strategic perspectives, in order to verify that the overall objective of the innovation project can be achieved, i.e. to introduce in the global market a new technology for wireless electricity transmission.

1.2 Relation to the work programme

Since our technology is supposedly capable of wireless charging devices at a distance of more than 3 meters, proposal relates to the Horizon 2020 dedicated SME Instrument 2015, Call Topic SMEInst-01-2016-2017 Open Disruptive Innovation Scheme.

1.3. Concept and approach

The utility model relates to electrical engineering and is intended to provide guaranteed wireless power supply and charging to various devices. The utility model can be used for wirelessly charging low-power electrical devices (telephones, photo cameras, video cameras, toys, souvenirs) in an apartment, an and an electrical energy consumer receiver, which are provided with coils that operate on a feedback basis. The emitter coil is provided with two windings, the length of the wire of which is divisible by $\lambda/4$, where λ is the wavelength used, and the receiver is composed of an oscillating circuit comprising a spiral flat coil having a wire length divisible by $\lambda/4$ or $\lambda/2$ and being connected in parallel to a tuning capacitor , which is connected in series via a controlled rectifier to a storage capacitor to a pulse width modulator and to a controller, which is connected to a pulse generator and to a storage battery.

[1] https://www.gminsights.com/industry-analysis/wireless-charging-market

Background

The prior art wireless charging system (patent RU 2306654 CI, H02J17 / 00; N04V 1/38, 20.09.2007), containing the narrowband frequency generator with the radiating antenna. This system generates continuously a high frequency signal which is fed to the antenna and transmitted through the electromagnetic field oscillations in space. The oscillation amplitude decreases with the square of the distance. For this reason, well-known for many years schemes are not widely used as supplied continuously energy from the generator to 99% is wasted. The system side comprises reception antenna, the inverter voltage controller charge / discharge. The disadvantage of this solution is the inefficiencies of energy transfer due to inefficient reception mode oscillation without the phenomena of resonance. In the prior art device is the wireless transmission of electrical energy (see Russian patent JSTs 241 1142, B60L9/00,10.08.2010.), Which provides for the supply of electrical energy from the resonant power supply system via a high-voltage high-frequency transducer at the resonant frequency, single-conductor line and the air gap to the individual consumer collectors. The disadvantage of this device is the availability of necessary single-wire line to each user. The prior art apparatus and method for wireless transmission of energy and / or data between a source device and at least one target device (See. Patent RU 2419945, H02J17/00; H01F38/14, 27.05.2011).

Wireless transfer of energy and / or data is performed using at least one situated on the side of the source device of the primary coil at least one primary circuit current in the at least one situated on the side of the secondary coil of the target device, at least one secondary current path and at least one coil of at least one of the resonance circuit voltage is induced. The resonant circuit is electrically isolated from the primary circuit current and the secondary current circuit. A disadvantage of the wireless charger efficiency is low, because the generator-side power source regularly submits a vibratory system. Thus the primary coil, secondary coil and inductor forming a resonant circuit coil arranged around a magnetic core forming a magnetic circuit. The disadvantage of the known installation is also a decrease in the range of the (possible power) and a decrease in the number of consumers.

RU Patent JV 2408476 (B60L9/08, 10.01.2011) is known invention, aimed at creating a wireless way to power electric vehicles and a device for its implementation, which provides high power and speed of the electric vehicles with the multiband (Multiple-row) motion. The device provides for supplying electrical energy to the resonant power supply system via a high-voltage high-frequency inverter, single-conductor line and the air gap to the individual consumer collectors. The disadvantage of this solution is the need for single-conductor line to each user. In the prior art the invention "The method and apparatus for transmitting electrical energy» (RU 2341860, 20.12.2008) According to which method of transmitting electric power comprises generating high frequency electromagnetic oscillations and transmitting them in the conducting channel between source and receiver electrical energy. The conductive channel is formed by microwave radiation at a frequency much greater than the resonant frequency. The disadvantage of this solution is the need to form a conductive channel to each consumer using microwave radiation source.

The main problem of the above power systems is that oscillator operating in continuous mode at the antenna oscillating circuit, all the time gives energy to an electrical circuit. The antenna resonant circuit, it takes into electromagnetic oscillations, which are distributed in space. The oscillation amplitude decreases with the square of the distance from the source. Consequently, a very small part of the energy generator reaches the consumer and used. Therefore, in a number of patents suggest necessarily form at least single-conductor channel for transmission of energy. Known device group «Wireless energy transfer converters» WO2011112795 Al and «Method and Systems for wireless power transmission)) US2011241618A1, operating by resonance in a magnetic field with a weak emission of electromagnetic waves. This solution allows you to transfer up to 60% of the original energy with minimal dissipation. The device comprises a charging station with a transmitter and a receiver of electrical energy consumer performed with coils operates using feedback. The disadvantage of this system is the ability to achieve a high efficiency only when combining the axes of the transmitting and receiving coils. According to the essential features of the decision taken as a prototype.

Key innovation elements

The basis of the utility model is the task of replacing the charge through electromagnetic induction on the charge through the electromagnetic wave and thereby eliminating the drawbacks of charging through electromagnetic induction.

The task is solved by the fact that charging a mobile phone and other small devices through an electromagnetic wave containing an electric power source and an AC/DC adapter, according to a utility model, has a large transmitting antenna in the form of a semi-pseudosphere with stepwise winding connected to an electric power source , and a small-size receiving aerial in the form of a half-pseudosphere with continuous winding, connected via an AC/DC adapter with a mobile phone and a counterweight.

Utility Model (Figure1.1.) contains: 1 - a large transmitting antenna in the form of a semi-pseudosphere with step winding, 2 - an electric power source, 3 - a small receiver antenna in the form of a half-pseudosphere. with continuous winding, 4 - a variable AC/DC adapter, 5 - a mobile phone, 6 - counterweight - current conductor a film, a thin metallic plate of any shape or a metallic contact, 7 - a possible constructive union of elements 3, 4, 5 and 6.

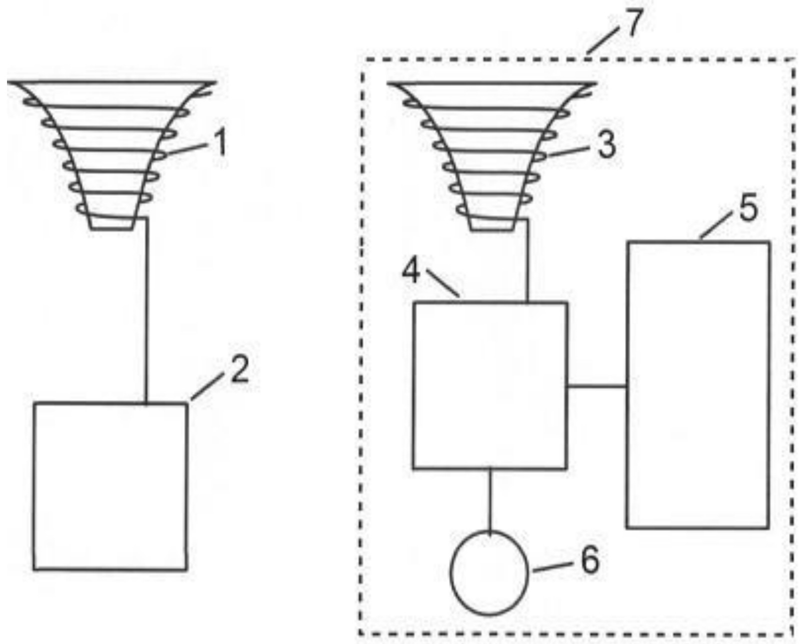


Figure 1.1. Utility Model

The transmitting antenna 1 is excited by a power source 2 and emits a slowed electromagnetic wave. The energy of this wave is taken by the receiving antenna 3 and the adapter 4 charges the mobile phone 5. Touching the metal plate - the counterweight 6 hands of the user of the mobile phone during the conversation significantly increases the charge current; if the mobile phone is temporarily not used and the charge should be extended, then the mobile phone should be placed on the base unit in which the counterweight 6 contacts the ground or metal surface with a significantly larger area than the counterweight 6. It is not a difficult task to combine the elements 3, 4, 5 and 6 into a single construct 7 (on an additional cover to a mobile phone or on a cover to it). The large dimensions of the transmitting antenna 1 necessary for the transmission of the specified power (as well as the measured power of the transformer); small overall dimensions of the receiving antenna 3 are dictated by the consumer requirements of the utility model (the overall dimensions of the antenna 3 should be significantly smaller than the overall dimensions of the mobile phone). The step winding of the antenna 1 and the continuous winding of the antenna 3 with correspondingly large dimensions of the antenna 1, in comparison with the dimensions of the antenna 3, allow ensuring the resonant frequencies of the antennas 1 and 3, thus ensuring the maximum energy efficiency of the charge.

Current status of development

At today's stage, some operating regimes of the plant and comprehensible demonstration procedures are fixed experimentally and can be demonstrated on the already constructed and operated experimental device in a fundamental conformance.

At experimental charge the following results were obtained: the resonance frequency of the antennas 1 and 3 was f = 4.43 MHz, which determines the wavelength in the free space λ = 67.76 m; when calculating the resonance frequencies of antennas 1 and 3, the orientation was at frequencies of 3.5-3.8 MHz, which are allowed for amateur radio; the power, which was selected from the power supply by the source of electricity 2 with the connected antenna 1, was 15 W; the charging indicator of the tested devices was observed at a distance from the transmitting antenna 1 from 1.1 m to 2.2 m, and the measured charging current of the M4200 mini ammeter was 50 mA to 20 mA, respectively. The transmitting antenna 1 is essentially a quarter-wavelength antenna with a quarter-wavelength equal to the minimum antenna size of 0.07 m. The distance of 1.1 m is the distance of the near-zone restriction zone (the induction zone), which is rigidly associated with the length of the slowed-down waves $\Delta\lambda$=4*0,07m=0,28m. and the well-known limitations of the induction zone 4$\Delta\lambda$=4*0,28m=1,12m. The ratio of the wavelength in the free space -λ = 67.76 m to the length of the slow wave - $\Delta\lambda$ = 0.28 m determines the deceleration rate: $K = \frac{\lambda}{\Delta\lambda} = \frac{67,76}{0,28} = 242$, which is tens of times larger than the classic slowing systems. The slow wave $\Delta\lambda$ is the longest, the main of the group of spatial harmonics - waves of different lengths, but with one resonant frequency. This fact is the basis of the energy efficiency of the radiation of the electromagnetic energy of the antenna 1. In turn, the receiving antenna 3 allocates and receives its basic and group harmonic waves, which are also subordinated to one resonant frequency, equal to the resonance frequency of the transmitting antenna 1. This ensures the overall energy efficiency of charging through electromagnetic wave In addition, when substantiating the energy efficiency of charging through an electromagnetic wave, it should be noted that in the process of charging involved electric and magnetic fields of the Earth, without excitation and energy capture which it is impossible to receive power transmission from the efficiency of 100% and, moreover, the generation of "free" energy(over-energy).

Current technical readiness level (TRL) of OUR PROJECT corresponds to TRL 6 – technology demonstrated in relevant environment.

Thus, charging a mobile phone through an electromagnetic wave reduces the disadvantages of charging through electromagnetic induction, because it allows:

a) increase the distance between transmitting and receiving antennas to several meters;

b) to provide the work of several reception antennas from one transmitter, since near the boundary of the near zone (beyond the zone of induction) one or more receiving antennas operate autonomously from the transmitting antenna;

c) ensure the possibility of using a mobile phone for its intended purpose during charging.

In the end, it should also be noted that, without energy losses, the overall antenna performance can be reduced by approximately 1.5-2 times, thereby increasing the consumer quality of the utility model.

During the feasibility assessment in Phase 1 we want to elaborate feasibility study for already identified potential market segments, develop IRR strategy, business model and a business plan.

As a result, in Phase 2 we want to pilot fine-tuned solution for the most promising market segments with characteristic identified during the implementation of Phase 1. We want to demonstrate prototype in operational environment and reach TRL 7 - system prototype demonstrated in operational environment.

1.4. Ambition

Power delivery is today's #1 problem across mobile and wireless device usage; devices need to be recharged repeatedly. Smartphone and tablet users scurry around airports and trains in search of power outlets. Wireless sensors in smart buildings and industrial environments suffer from limitations to their operational capabilities due to rationed power availability. Flight time of increasingly popular drone technology is constrained by battery capacity.

OUR COMPANY is set to solve this problem. We are engaged in developing products that deliver remotely substantial power allowing seamless recharging of mobile and wireless devices. Our mission is to break the tether to the power cord and to make mobile devices self-sufficient and free users of frequent recharging.

Remote wireless charging as widespread as WiFi in public spaces, offices and homes. We envision proliferation of remote charging hotspots in homes, offices and in public areas (coffee shops, shopping centers, airports). Mobile devices seamlessly self-charge off these hotspots. This is in a way similar to the WiFi revolution that freed mobile devices from Ethernet cable connection some 10 years ago.

We foresee unattended flying vehicles being constantly powered up while in the air and not being limited anymore to just few minutes of flying time.

Our technology will enable an explosion of mobile and wireless devices finally free of the power cord.

We expect the remote charging to become an inseparable part of our everyday life.

2. IMPACT

2.1. Expected impact

2.1.1. Users\market

Target Market

OUR COMPANY target market are smartphone users, electrical vehicle charger stations, business travellers. OUR COMPANY gets to the target market through an intermediary consumer. The consumers consist of companies that deal with large congregations of people. Corporations including airlines (providers of airline lounges), electrical vehicle developers, key vendors of smartphone production and smart cities. Also,the Figure 2.1. shows the environmental benefits of wireless power, which expands our potential market, since the problem of greenhouse gases is still relevant.

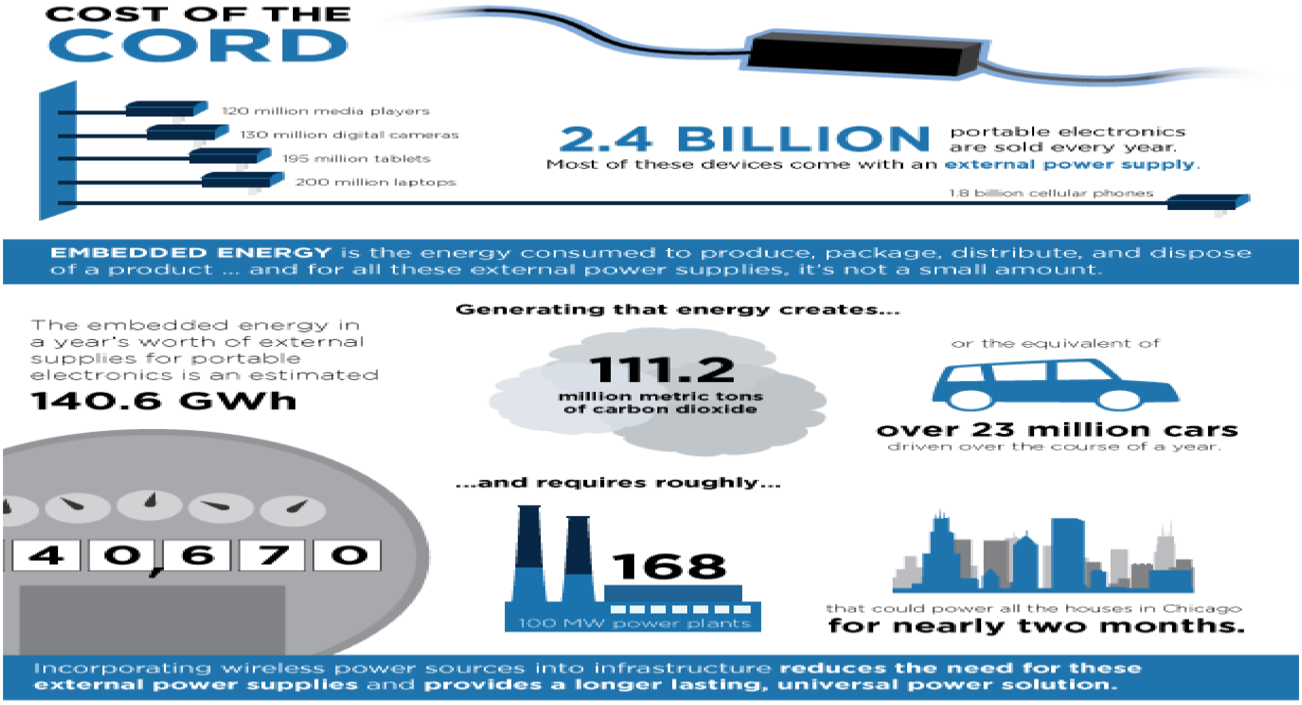


Figure 2.1. Environmental benefits of-wireless charging[2]

OUR COMPANY chose the domain of consumer electronic devices for two reasons. The growing battery charging industry is over 3 billion market, according to a new research report by Global Market Insights, so a large opportunity for entry into the market exists. Second, projected sales in the industry show that the number of devices will exponentially grow; hence the problem will increase in magnitude[3].

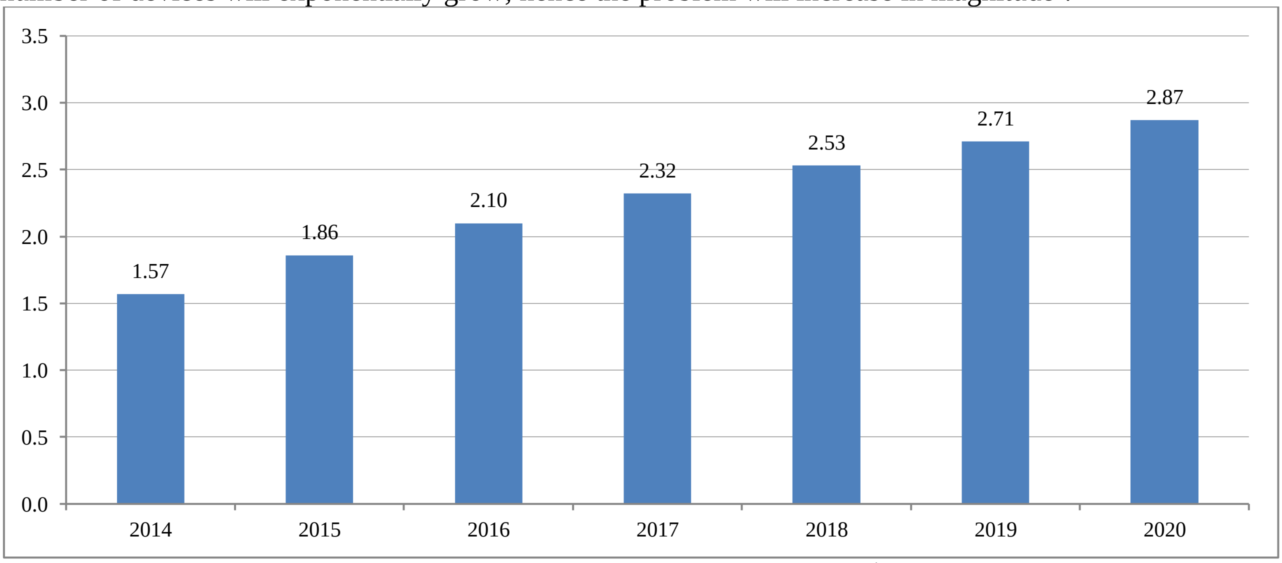
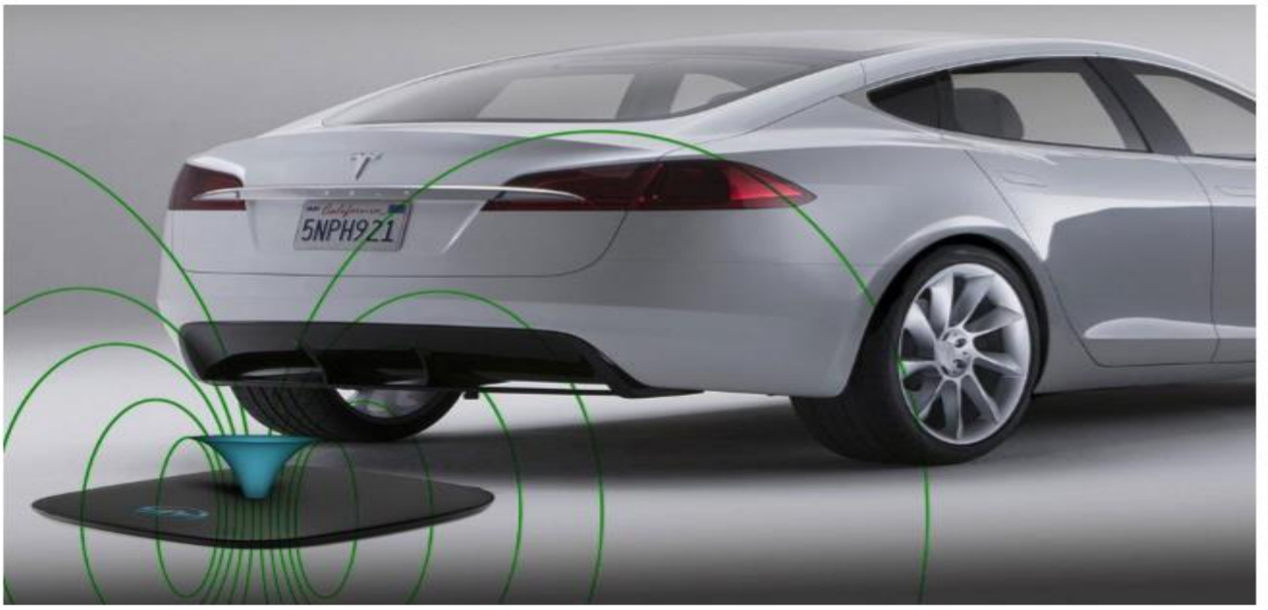


Figure 2.2 Smartphone users in billions[4]

According to New registrations of electric cars1 hit a new record in 2016, with over 750 thousand sales worldwide. The global electric car stock surpassed 2 million vehicles in 2016 after crossing the 1 million threshold in 2015 (Figure 2). Research, development and deployment (RD&D) and mass production prospects are leading to rapid battery cost declines and increases in energy density. Signs of continuous improvements from technologies currently being researched confirm that this trend will continue, narrowing the cost competitiveness gap between EVs and internal combustion engines (ICEs). Assessments of country targets, original equipment manufacturer (OEM) announcements and scenarios on electric car deployment seem to confirm these positive signals, indicating a good chance that the electric car stock will range between 9 million and 20 million by 2020 and between 40 million and 70 million by 2025[5].

[2] http://www.nucurrent.com/infographic-environmental-benefits-of-wireless-charging/
[3] https://www.gminsights.com/industry-analysis/wireless-charging-market
[4] https://www.statista.com/statistics/330695/number-of-smartphone-users-worldwide/
[5] International energy agency - Global EV Outlook 2017



OUR PRODUCT Design for EV's charging

U.S. wireless charging market is the largest regional segment, and has witnessed considerable government support. The incentives provided by the U.S government for the development and the usage of the devices include competitive programs to help encourage suppliers and manufacturers investment in R&D and infrastructure. For instance, the Obama Administration announced in November 2016 the establishment of more than 45 national EV corridors which would act as wireless charging networks on highways.

Increasing popularity of EVs with high voltages and large battery packs, has stimulated enormous investments in efficient and safe battery chargers. Limited battery space in vehicles, and implementation of non-removable batteries, is driving adoption of the wireless charging market. In-car and wireless charging of EVs are the key trends which are being witnessed in the automotive industry. Moreover, rise in the adoption of EVs in the U.S., UK and Germany will boost the industry growth.

First we plan to enter European market with big EV's manufactures and strong smart cities programs. Then we want to spread to USA and China markets as the biggest consumers of EV's and smartphones.

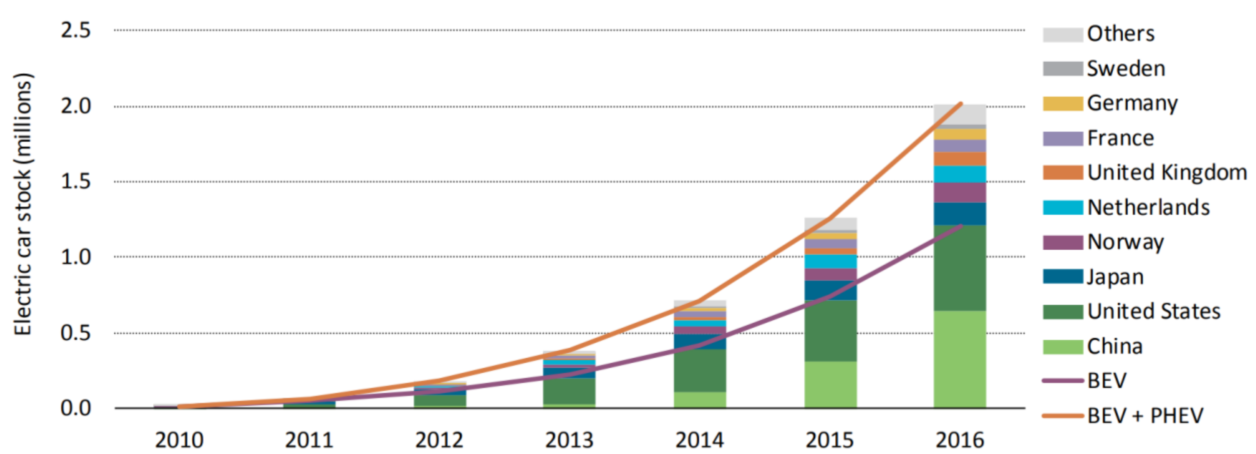


Figure 3. Evaluation of Electric cars stock 2010-2016, millions

Competitive landscape and key vendors

As the global wireless charger market is still in the nascent stage, every vendor is trying to capitalize on the high growth potential of this market. With technological advancements and innovations, the competition among vendors is expected to intensify during the forecast period.

Key vendors in the market are - Duracell Powermat, Fulton Innovation, WiTricity Qualcomm. Other prominent vendors in the market are Anker, Delphi Automotive, Energizer Holding, Kube Systems, LS Cable & System, Oregon Scientific, PowerbyProxi, Pure Energy Solutions, Samsung Electronics, Texas Instruments, Wisepower, and Leggett and Platt[6].
All these companies produce a quality product, but our device has a much greater range of charge (up to 4 meters), while others have a charge range of a maximum of 0.5 meters. The prototype we propose to construct will consist of a carry frequency oscillator, resonance transmitting antenna, resonance receiving antenna, current inverter-rectifier and a single cell of electric car battery. So therefore we need deep market analysis for understanding our direct competitors and real possibilities on the market.

Key competitive advantages:

- Automatic – the transmitter finds the devices and powers them without intervention;
- Safe – complies with international standards and regulations;
- Power delivery over distance – room, hall, or long-distance, per application;
- Wide field of view – single transmitter can cover a room of 250 square feet;
- High power – unlike "power harvesting" solutions, a transmitter can deliver watts of electrical power;
- Power is constant over distance – no power dissipation and about 95% link efficiency;
- Multiple devices can be charged simultaneously;
- Scalable – additional transmitters can be placed to increase coverage, power and number of receivers;
- Smart power delivery according to receiving-device parameters.

Market barriers and risks:

In the electronics industry as a whole, high customer switching costs and brand loyalty are common barriers to entry. Naturally occurring switching costs include the difficulty of learning to use a new company's products and installing new electronics in a company or home. Established electronics companies may strategically build in switching costs to retain customers. These strategies may include contracts that are costly and complicated to terminate or software and data storage that cannot be transferred to new electronic devices. This is prevalent in the smartphone industry, where consumers pay termination fees and face the cost of reacquiring applications when they consider switching phones. As in many other industries, brand loyalty keeps buyers coming back to a company with which they have positive associations, and new firms must invest heavily to match years of advertising and user experience.

2.1.2. Company

Mobile technologies are entering every aspect of our lives. Today's widely used devices – smartphones, tablets, laptops – are being joined every day by watches, wearables, industrial and consumer sensors, IoT applications, and so much more. However, these devices are not truly mobile if they require connection to the power cord. Untethered re-charging is the final challenge to true mobility.
OUR COMPANY addresses the biggest pain in mobile and wireless – increasing power consumption and the need for frequent recharging. Leveraging our proprietary wireless power transmission technology, we develop remote charging solutions that essentially enable mobile and wireless devices to seamlessly recharge themselves without user intervention.
OUR COMPANY technology makes charging at home, at an office, or in a public place as easy and transparent as connecting to the Internet. From UX perspective, devices become completely self-sufficient.

2.2 Measures to maximize impact

2.2.1 Dissemination and exploitation of results

For Phase 1, the project proposes to enhance the dialogue with key customers (users' endorsement and involvement actions). In addition, and as a form to obtain technical information and engage customers, key clients will be invited to technology demonstrations. The samples will be sent to international laboratories to preliminaries analysis, thus enforcing customers' confidence. This analytical information will permit to prepare antecedents for Phase 2. The objective is to disseminate preliminary information about OUR COMPANY technology through potential users, thus receiving their feedback and checking the possibility of adopting (and acquiring) the innovation, in the different application fields.
Regarding the exploitation of results of Phase 2, the strategy will follow three main ways:
The first one refers to the commercialization of the technology (wireless power transfer) through license, for which an IPR protection (patent) has been already applied in Ukraine. Thus, OUR COMPANY would offer

6 https://www.technavio.com/report/global-embedded-systems-wireless-charger-market

the innovation at an international level, along with parallel efforts in the local market. The business plan elaborated in phase 1 should clearly identify a set of marketing strategies to implement towards this end.
The second exploitation way implies that OUR COMPANY will construct the machines and commercialize them (directly) to electrical vehicle and smartphone developers, airports, public places and other.
Finally, a third way to commercialize the technology will be through joint ventures with key vendors of electrical vehicles and smartphone markets : the plan consists of building an alliance whereby OUR COMPANY will offer the technology and know-how, whereas the entity should contribute with the processing and commercialization to final consumers.
For all these ways of commercialization we will develop different types of business models:
1. Public installation of wireless electricity. We will develop a system of payment for electricity with the help of mobile operators. Potential clients of our station can pay for the charge using their mobile operator account. It will be 2 types of installations - for smartphones, laptops, tablets (small devices) and for electrical vehicles.
2. We will cooperate with the key vendors of EV's and smartphone sectors for selling our installation personally to the buyer.
3. We will communicate and cooperate with smart cities centers to make wireless electricity publicly available in all city services.
Concerning the equipment costs, preliminary estimations made by the OUR COMPANY engineering department consider a total budget of 700,000 € to produce a standard wirless charger station. In order to begin the commercialization, the units can be completed in around 8-12 months. However, a period is yet required to adapt the technology to the different needs. Additionally, a fabrication program will be implemented to advance in different activities simultaneously, and to anticipate the commercialization through continuous and incremental technology improvements in accordance with clients.
To carry out the project, the phase 1 will require one new employee. This person will assist the board in project coordination activities, principally connecting the company with the rest of partners involved in the feasibility study. He will have some technical background and some notions of innovation management. The phase of technological R&D and marketing will demand around 10 additional permanent workers, not only for production but for marketing activities and bureaucratic issues, such as accreditation, IPR management and report elaboration. In total, after the first year of commercialization, the staff will have 14 members, including the directors. The initial business plan projections indicate a gradual increase of personnel, up to 146 employees in five years.

b) Intellectual Property, knowledge protection and regulatory issues

The invention of OUR COMPANY is being protected by a patent application filed on May 19, 2011 (UA № 79626, 10.07.2007). Then it was filed the Ukrainian patent applications on 26.01.2009 (application number UA№ 85476, International Publication Number - WO 2009/025631 A1), 10.10.2012 (application number UA № 74089, International Publication Number - WO 2012/033474 A1). The application process is currently in a national phase in Ukraine recently we got a new patent on 10.03.2017 (application number UA №114496. The technology developed by OUR COMPANY has no contradictions with existing regulations. In any case, the technology is flexible and can be adapted to several requirements and normative related to emissions (from fuel) or waste processing (type, conditions, etc.). The feasibility study will include an evaluation of technological risks and a review of international regulations. It implies the exploration of existing normative, and a prospective analysis of possible variations of current norms.

3. IMPLEMENTATION

3.1 Work package and deliverable

<table>
<tr><td>.Work package number</td><td>1</td><td>Lead beneficiary</td><td></td></tr>
<tr><td>Work package title</td><td colspan="3">Feasibility Study</td></tr>
<tr><td>Start month</td><td>1</td><td>End month</td><td>6</td></tr>
<tr><td colspan="4">Objectives:
1.Knowledge of Wireless charger EU market and definition of the business strategy.
2.Evaluation of the potential for OUR COMPANY, in terms of revenues, growth and creation of new jobs.</td></tr>
<tr><td colspan="4">Description of work - The feasibility study will be produced by conducting the following tasks.
<u>Market and target users</u> – Task leader: <u>Evgeni Grabov</u>
M0 – M2: Exhaustive listing of possible – Wireless chargers – customers' categories.
• M3 – M4: Direct analysis of the context: demand (customer surveys) and offer (tech comparison).
• M5 – M6: Definition of user requirements (e.g. with the potential customers we already know).
<u>Marketing and Business</u> – Task leader: Oleksandr Horokhovskyi</td></tr>
</table>

- M3 – M4: Definition of market position and business model (depending on the user).
- M3 – M4: Identification of the most effective marketing strategy.
- M5 – M6: Evaluation of projections economic and financial (profitability and ROI).

Strategy – Task leader: Dmytro Veselov

- M3 – M4: Analysis of possible industrial and commercial international partners.
- M5 – M6: Definition of the IP strategy, and analysis of regulatory requirements to be fulfilled.

Based on the study's results, the possibility to present the innovation project to the SME Instrument Phase 2 will be explored, by identifying the actors making up the business ecosystem, the definition of the pilots to be activated (according to market segments and specific applications) and of a mid-term business plan.

Deliverable (M6, Task leader, Feasibility Study for European market launch:

- Market study, customers' segmentation, user needs and requirements.
- OUR COMPANY offer definition, marketing & financial plan.
- Industrial strategies and operative plan to face the European market. The criteria for the success of the initiative:
- Technical feasibility matching with user needs and requirements.
- Critical aspects: high development and production costs in early stages.
- Economic feasibility prospecting a ROI by 18 months.
- Critical aspects: finding capitals to reach a critical user base and leverage on the network effect

3.2 Management structure and procedures

Evgeni Grabov will be assigned as PM of the project. He has profound experience in managing innovation projects and has already brought numerous innovation solutions to the market. He will coordinate the work of chief scientist Vitaliy Kriuk, technology manager Dmytro Veselov, business development manager Oleksandr Horokhovskyi, technical team and other parties involved in the project. In order to strengthen the project team further, OUR COMPANY is planning to subcontract a Law firm and Civitta Management Consulting firm. OUR COMPANY has already established long-term relations with potential partners and both sides are willing to collaborate in the OUR project. During the project, OUR COMPANY is also planning to actively collaborate with members of the Airfuel Alliance. The chosen management structure is appropriate to the complexity and scale of the project.

3.3 Consortium as a whole

No consortium will be formed during this Project.

3.4 Resources to be committed

Form of cost	Costs of the feasibility study/Direct and indirect costs of the action	Total costs	Reimburse-	Maximum EU contribution	Maximum grant amount
	Lump sump	71429	70%	50000	50000
	50 000				