

SDG 9: Industry, Innovation and Infrastructure

SDGs and My Major
Wireless Charging and Future Technology

Sandy 、 Lia 、 Ashley 、 Jenny

Table of Contents

1

Basic Principles of Wireless Charging: Sandy

2

Practical Applications: Lia

3

Advantages and Limitations: Ashley

4

How It Promotes Innovation and Energy Accessibility: Jenny

The Basic Principle of Wireless Charging

- **What is Wireless Charging?**

Wireless charging charges devices without physical cables by transferring energy between two coils using a magnetic field.



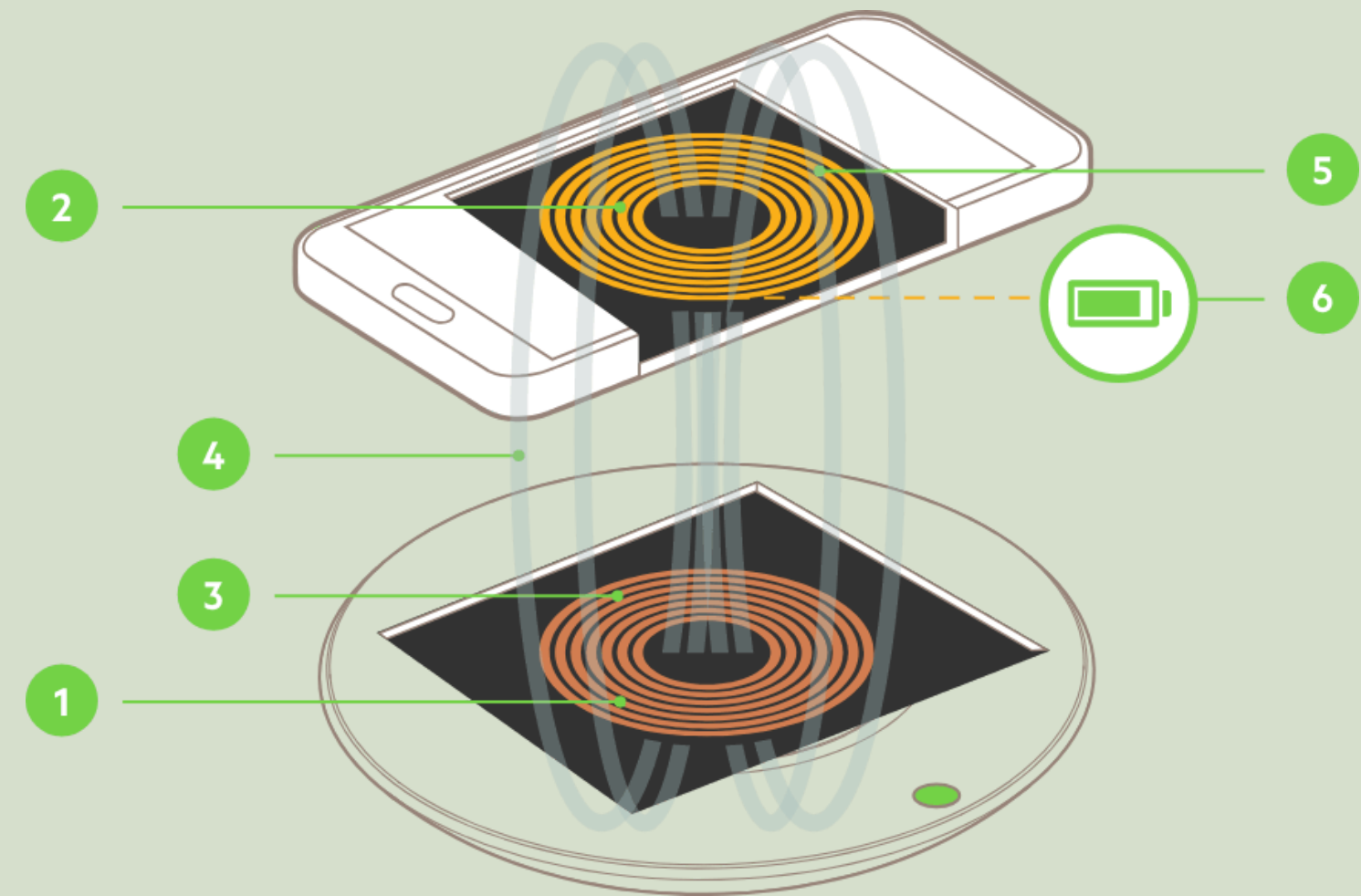
How Does It Work?

Electromagnetic Induction

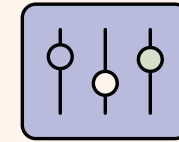
- Wireless charging is based on **Faraday's Law**. A current in the transmitter coil creates a magnetic field, which induces current in the receiver coil to charge the device.

- **Example Analogy :**

Think of it like a wireless handshake — two devices “meet” through their coils and exchange energy without touching.

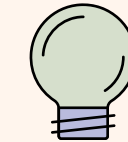


Wireless Charging – Real Applications



smartphones

Used in many smartphones today, just place phone on a charging pad-no cables.



electric cars

Some electric cars use wireless charging plates.



Future use

hearing aids
kitchen tools



Advantages of Wireless Charging

1. Convenience

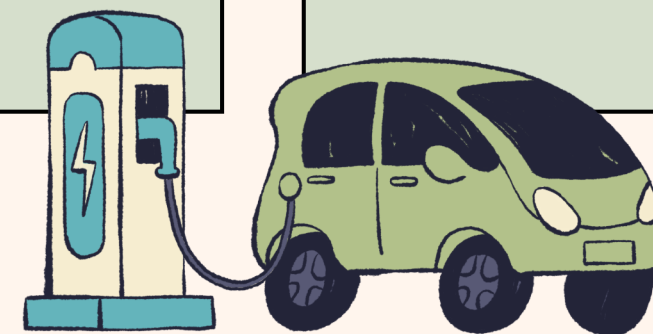
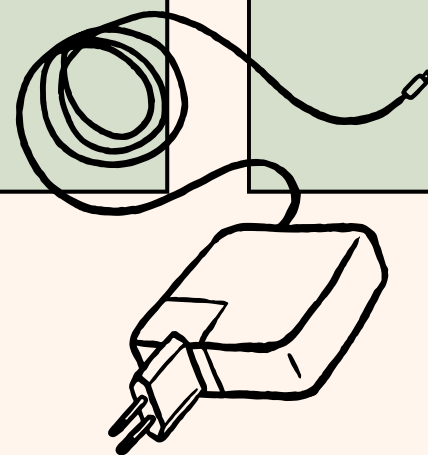
No need to plug and unplug cables, making charging more efficient.

2. Safety and Durability

No exposed metal parts reduce the risk of electric shock and increase durability.

3. Support for Smart Infras

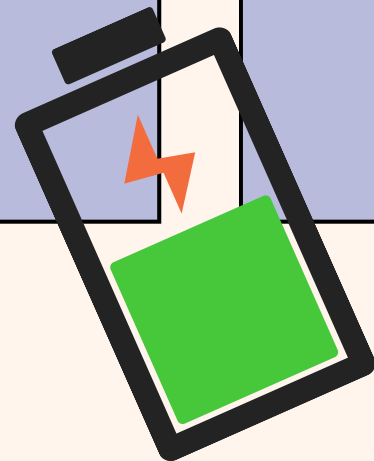
Can be integrated into public spaces like EV charging roads and wireless furniture.



Limitations of Wireless Charging

1. Lower Efficiency

More energy is lost as heat, making wireless charging less energy-efficient.

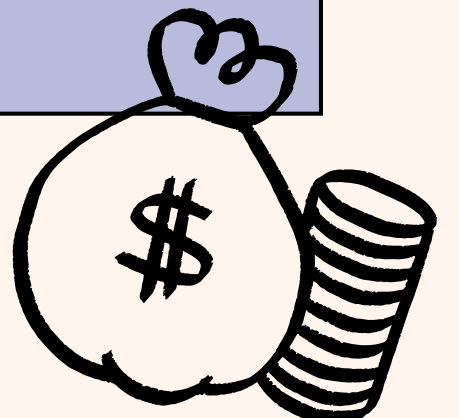


2. Limited Charging Distance

Devices must be placed accurately; misalignment can slow down charging.

3. High Cost and Slow Adoption

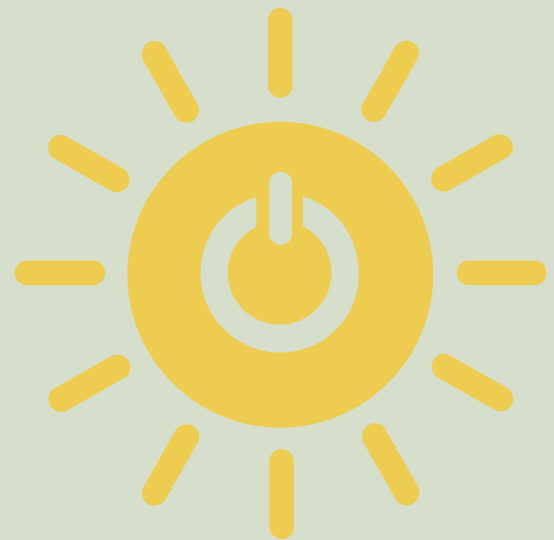
The system is more expensive to build, so it spreads slower than wired charging.



Key Strategies for Promoting Innovation in Wireless Charging and Future Technology

1. Smart Infrastructure

Deploy wireless charging in public spaces and integrate it into urban environments for seamless, accessible energy.



2. Cost Reduction & Accessibility

Advance mass production to lower costs and expand usage globally, especially in developing regions.

3. Future Mobility

Enable electric vehicles and drones with wireless charging to support sustainable transportation.

4. Startup & Innovation Support

Back startups with funding and testbeds to drive next-gen wireless energy applications.

Web sites related to SDG9

SDG9:Wireless Charging and Future Technology.

Thank you !