



DWPT

Cost-Effective Scalable Infrastructure for Electrified Roadways

The Challenge

As transportation agencies, infrastructure providers, freight operators, and vehicle OEMs explore **Dynamic Wireless Power Transfer (DWPT)**, they need confidence that electrified roadways can be deployed without compromising pavement durability, constructability, or lifecycle cost.

Current DWPT evaluations often focus on individual components or laboratory testing. DWPT is developing the engineering tools, validated models, and scalable infrastructure solutions needed to support real-world roadway deployment.



What We're Building

DWPT is delivering validated engineering models, scalable system architectures, and deployment-ready design guidance to support real-world electrified roadway implementation.



Expected outcomes

- ✓ Verify pavement durability under embedded electrification systems
- ✓ Reduce uncertainty in permitting & regulatory approval processes
- ✓ Lower infrastructure costs through improved system design
- ✓ Enable scalable deployment across corridors & fleets
- ✓ Support retrofit applications in ports, transit, & logistics environments
- ✓ Provide validated engineering tools for DOT & contractor use

Key Focus Areas

- **Pavement Performance & Durability**
 - Evaluating structural, thermal, and long-term impacts of embedded wireless charging systems.
- **Design Standards & Deployment Guidance**
 - Defining installation requirements, operating limits, and engineering best practices for roadway applications.
- **Validated Planning & Decision Tools**
 - Combining simulation, field validation, and digital twin capabilities to support infrastructure planning and investment decisions.
- **Cost-Effective Charging Technologies**
 - Developing lower-cost power electronics and embedded charging systems for roadway, port, transit, and freight applications.
- **Scalable Grid Integration**
 - Creating power distribution architectures that support corridor-scale deployment of electrified roadways.

Help Shape the Future of Electrification

Seeking Engagement

Transportation Agencies & DOTs

- Pavement performance requirements
- Corridor deployment priorities
- Design standards and permitting considerations
- Infrastructure lifecycle expectations

Contractors & Civil Infrastructure Firms

- Constructability constraints
- Material and installation methods
- Maintenance and durability requirements
- Cost optimization opportunities

Utilities & Grid Providers

- Power delivery and distribution integration
- Grid capacity and protection requirements
- Corridor-scale electrification planning
- Energy resilience considerations

Technology & Manufacturing Partners

- Power electronics and inverter design
- Wireless charging system design and roadway-vehicle integration
- Cost reduction opportunities
- Interoperability across vehicle classes and pavement systems



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