**Scope of Problem**
- Deepening penetration of Battery Vehicles (BVs) will reduce funding of the transportation infrastructure due to the reduced gasoline tax collection.
- Proposed solutions have not been accepted because of privacy concerns.

**Current Revenue Sources**
- Tolls
- Taxes
  a) Motor fuel
  b) Vehicle registration
  c) Truck tire excise
  d) Truck and trailer sales
  e) Heavy vehicle use

**Privacy Considerations and Concerns**
- Nature of information identified, collected, and stored.
- Data ownership and control.
- Nature and form of information communicated to the administering agency.

**Earlier Projects**
- National Evaluation of Mileage-Based Charges for Drivers, University of Iowa Public Policy Center, 2011.
- Oregon’s Mileage Fee Concept and Road User Fee Pilot Program, Oregon Department of Transportation, 2007.

**Research Focus**
- Security: integrity, confidentiality, and availability.
- Privacy concerns and public acceptance.
- Conflict resolution.
- Usability.
- Practicality of deployment: cost, scale, and feasibility.

**Naïve Solutions**
- Tax BV electricity consumption.
- Impose higher BV registration fee.
- Introduce a mileage-based tax by monitoring vehicle road usage through GPS.

**Towards a Practical Solution**
- Socket tax.
- Mileage metering.
- Privacy-regulated GPS tracking and taxing.

**Next Steps**
- Literature review.
- Requirement specification.
- Approach and design.
- Taxes
  a) Using Advanced Metering Infrastructure (AMI) concepts.
  b) Explicitly addressing privacy concerns.
- Prototype and validation.