



Road Usage Charging as a Potential Revenue Source

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NEW PATHS TO ROAD FUNDING

Outline

- 1 The Problem
- 2 Potential Solutions
- 3 What is a Road Usage Charge (RUC)?
- 4 RUC America
- 5 States with Enacted RUC Programs
- 6 RUC America States Exploring or Piloting RUC
- 7 Federal Support for RUC



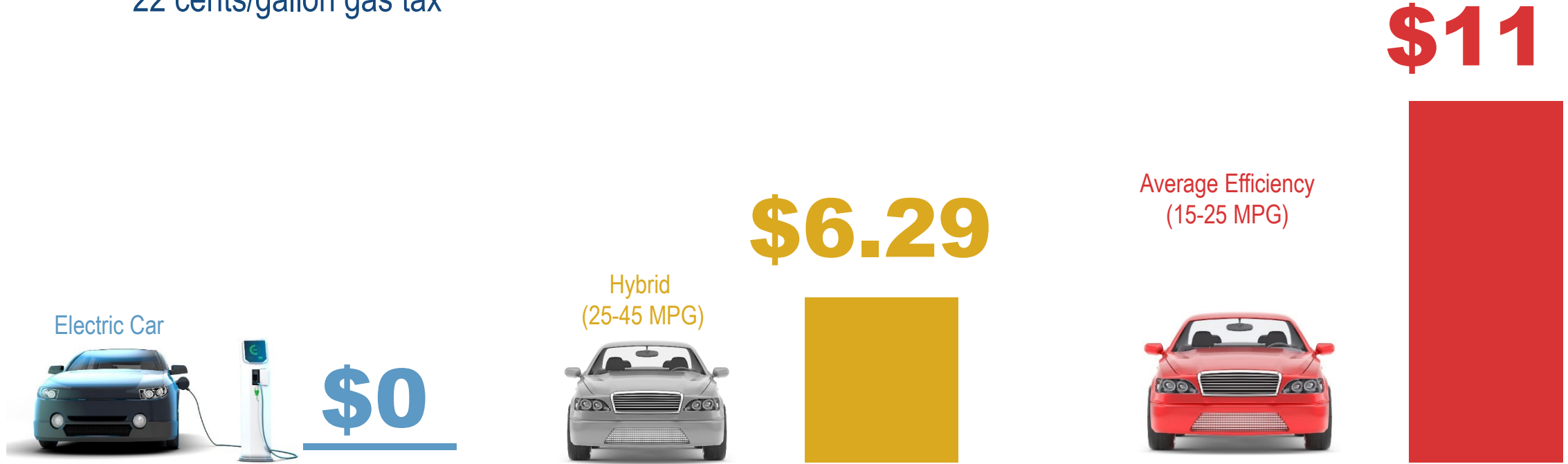
The Problem





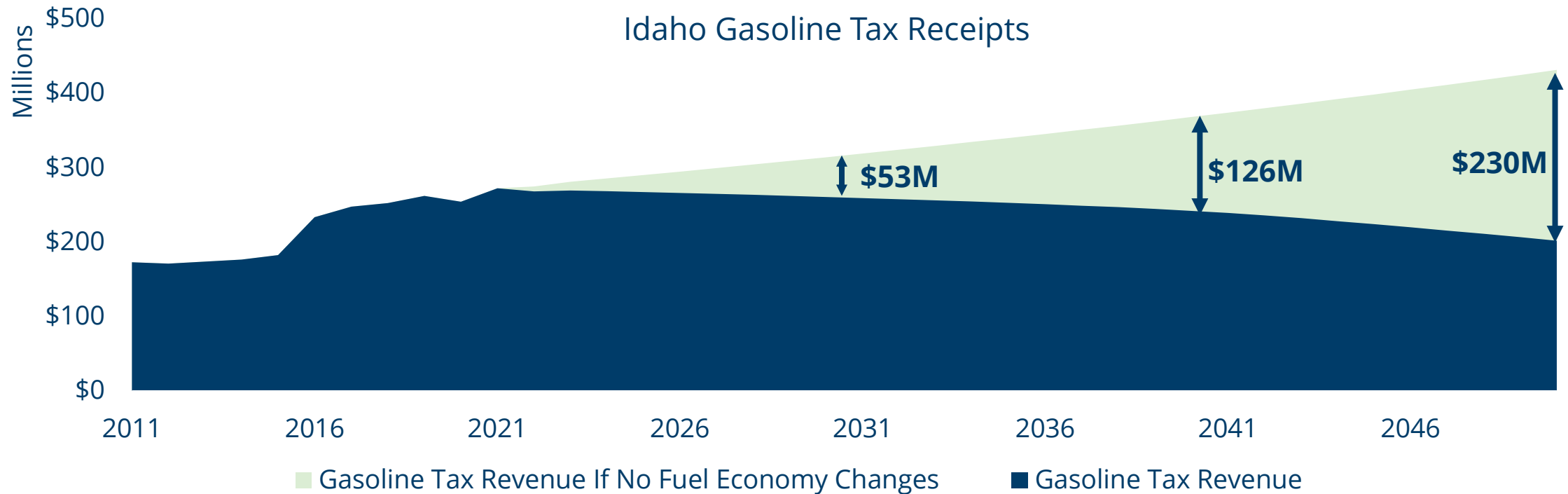
Fuel efficiency is increasing.

Ex: Monthly fuel-tax paid for 1,000 Miles Driven
22 cents/gallon gas tax



Transportation revenue is not keeping pace with system costs and demands

The erosion in gas tax revenue will accelerate as more vehicles use less gasoline (or no gas at all).



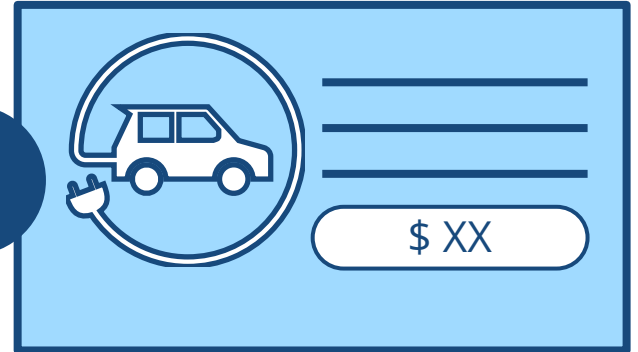


Potential Solutions

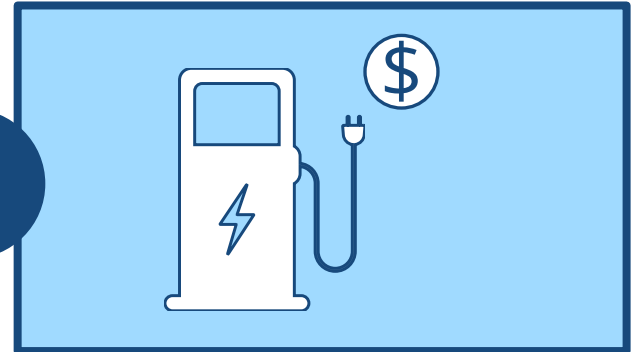


States are exploring multiple solutions to address fuel tax revenue loss.

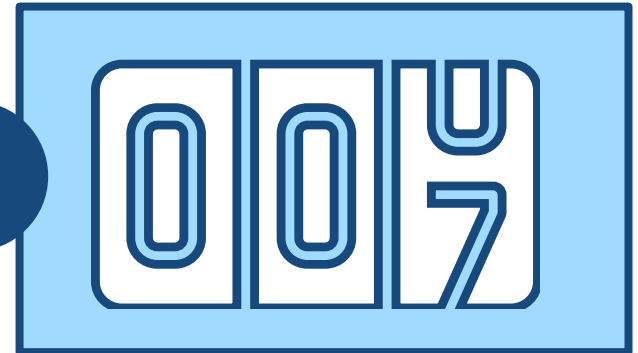
Annual Flat Fees



kWh Fees

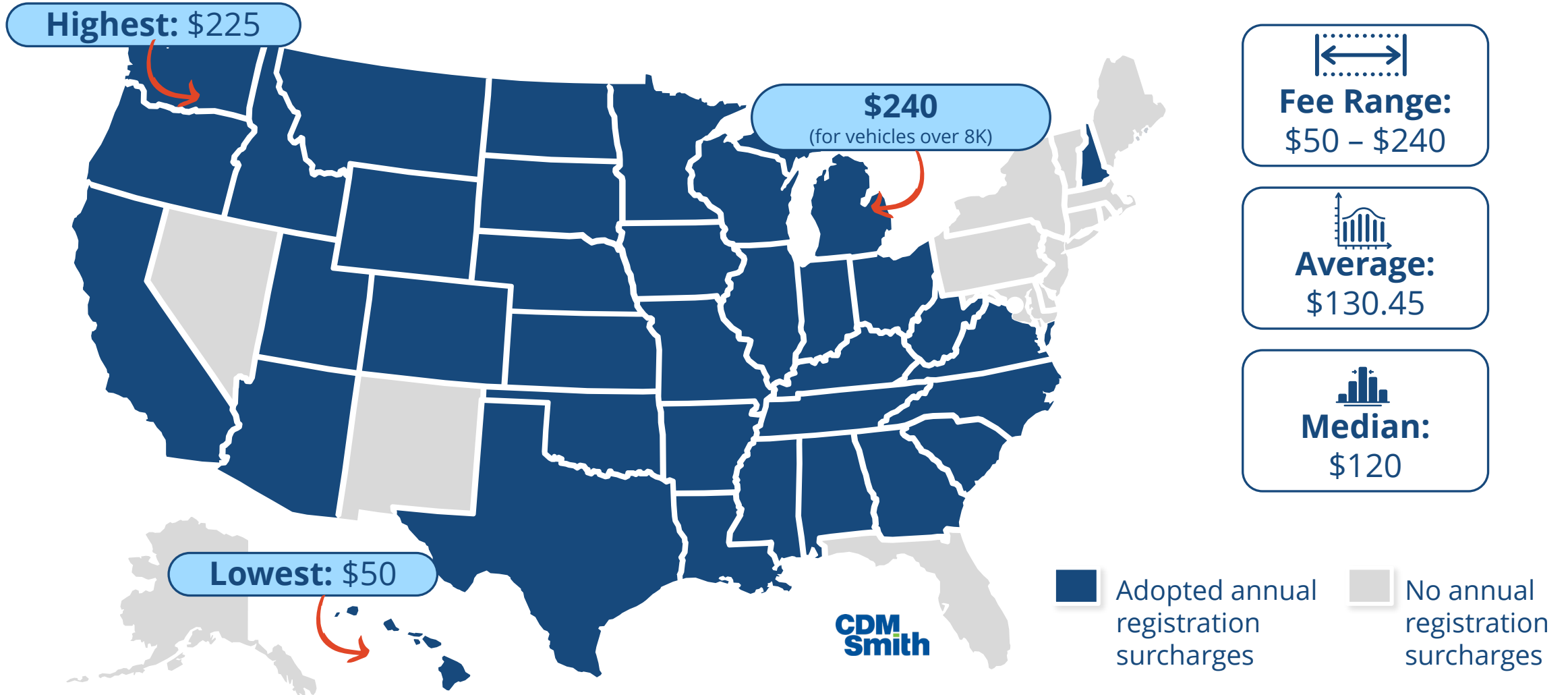


Road Usage Charges (RUC)

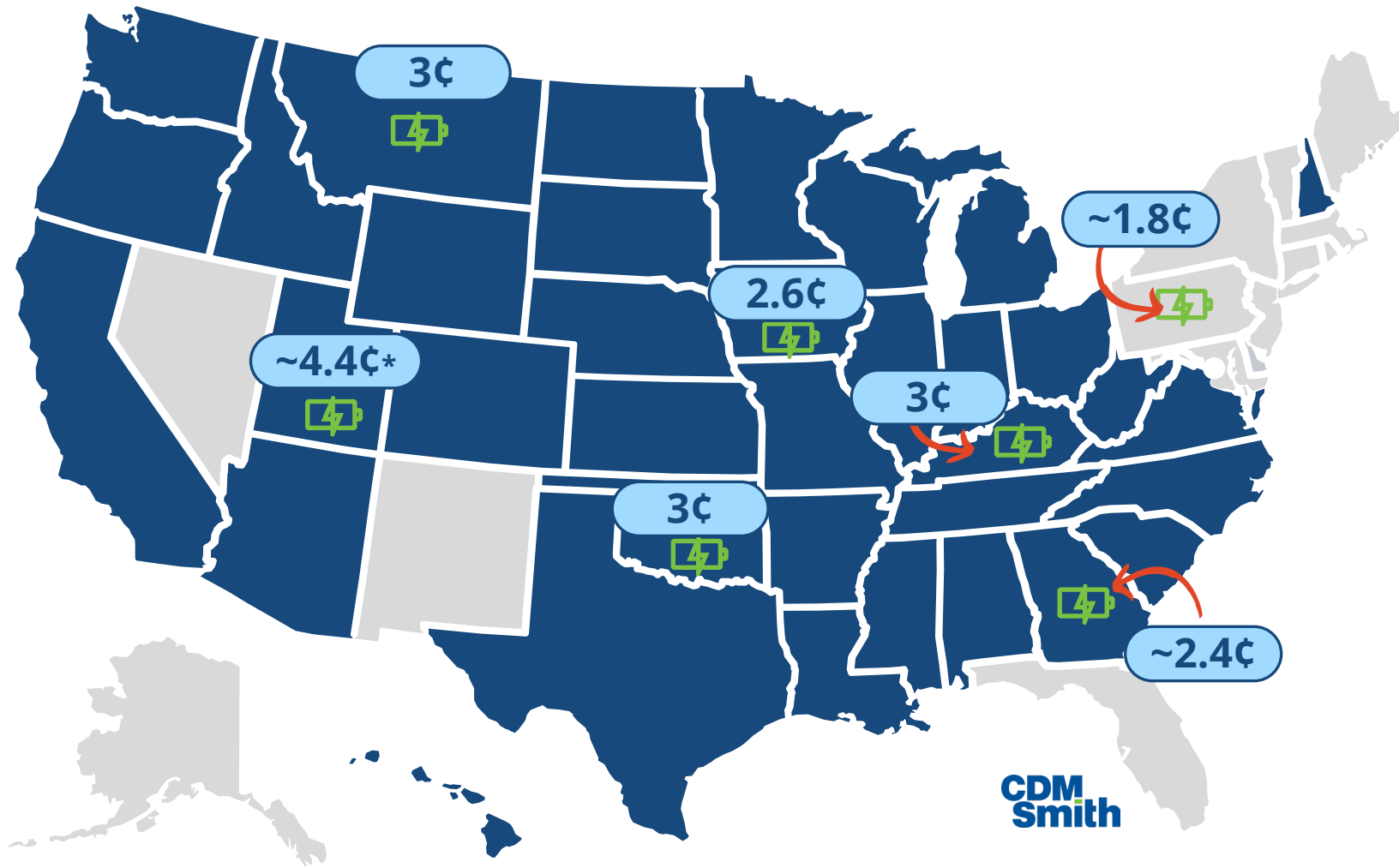


CDM
Smith

Alternative Fuel Vehicle Fees: 2023



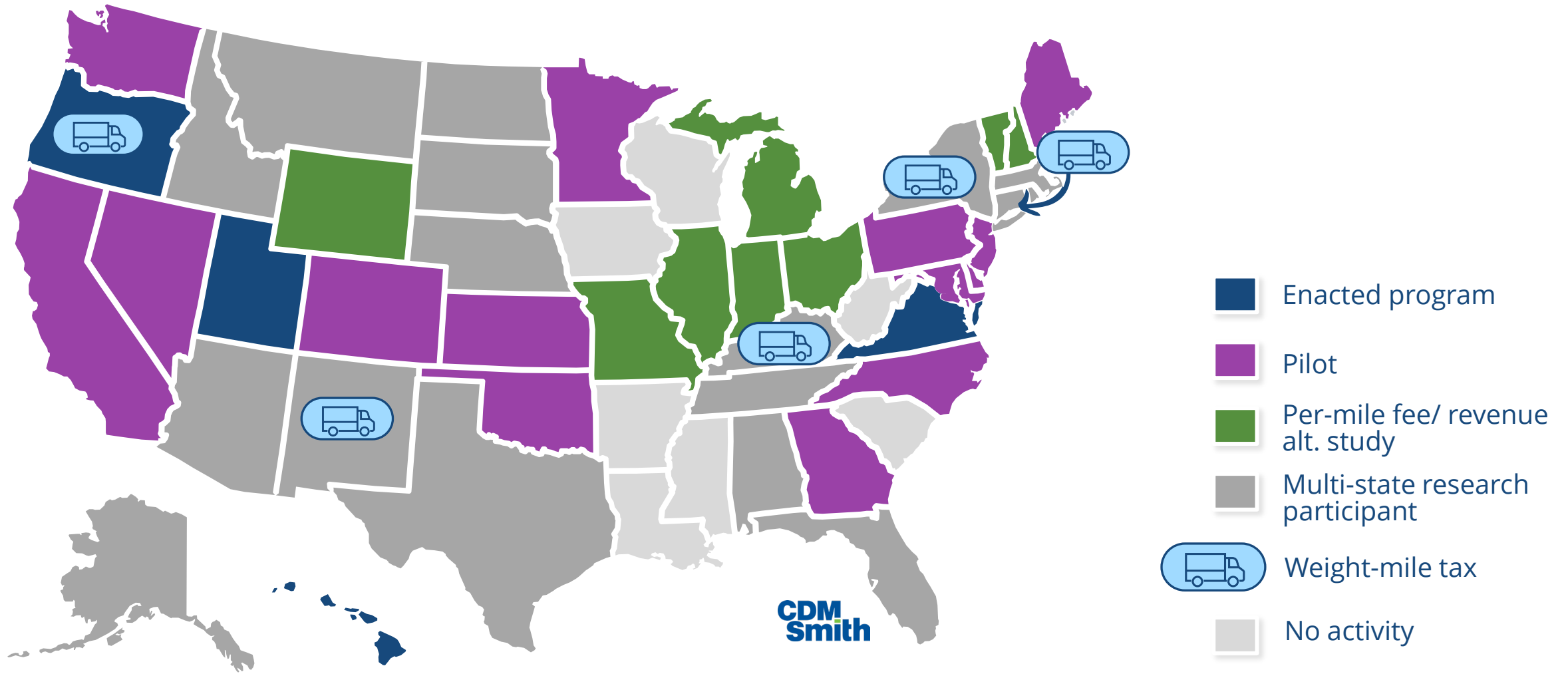
Kilowatt Hour (kWh) Taxes: 2023



- kWh tax enacted for charging stations
- Adopted annual registration surcharges
- No annual registration surcharges

* Utah is 12.5% of the retail cost. This value assumes retail cost = \$0.35 / kWh

Road Usage Charge Landscape: 2023





What is a Road Usage Charge?

What RUC is:

- ✓ Tax or fee collected from vehicle owners proportional to their use of the public roadway network
- ✓ A “pay for what you use” approach to funding transportation

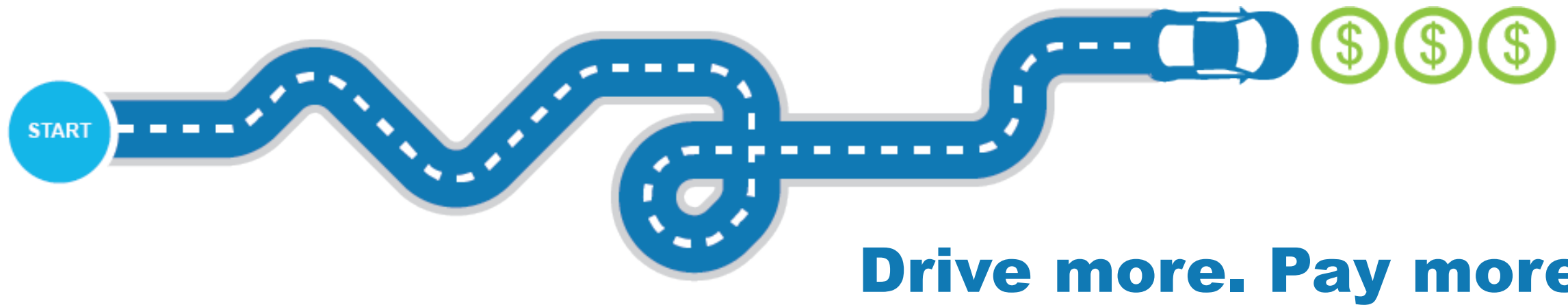
What RUC is NOT:

- ✗ Congestion charging – it does not vary by time or location
- ✗ Tolling – RUC charges for miles driven on all roads & funding applied to all roads

Also referred to as:

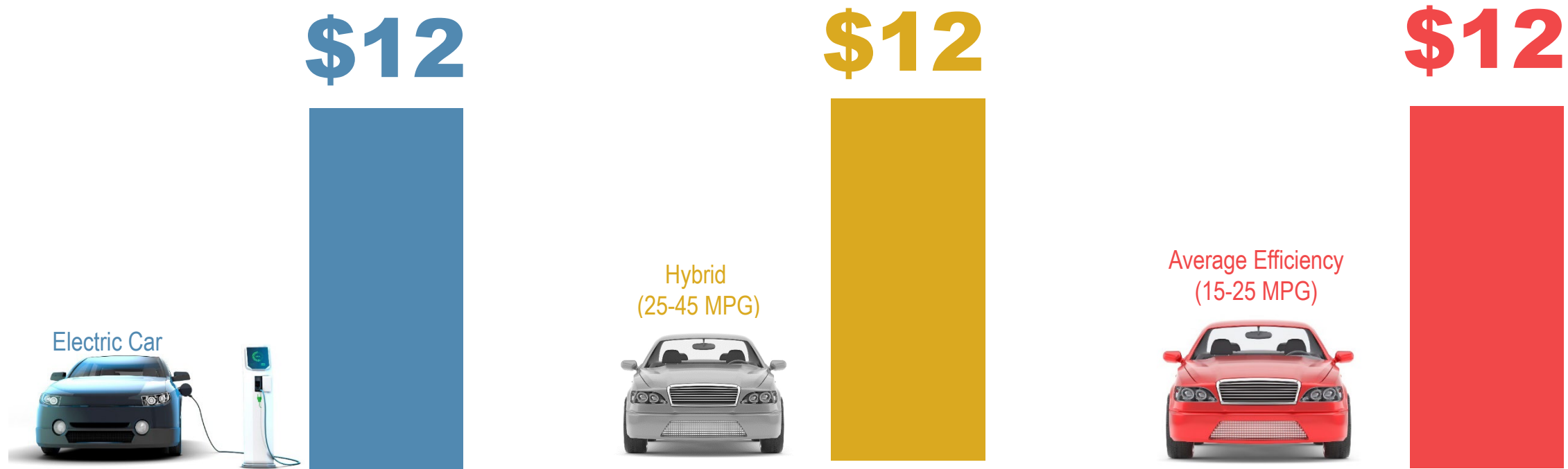
Per-mile fee, Vehicle Mileage Tax (VMT), Mileage-Based User Fee (MBUF), Distance-Based Fee (DBF), Road Charge

A road usage charge is a return to the “user pays” approach



RUC Model: Pay for what you use.

Ex: Monthly RUC paid for 1,000 Miles Driven
1.2 cents per mile road usage charge



RUC Mileage Data Collection Methods

No-Tech/Low-Tech Options



Odometer
Reporting
(In Person)

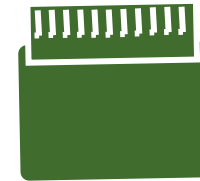


Odometer
Reporting
(self)

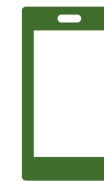


Odometer
Image
Capture

Technology Options



Plug-In
Devices



Smartphone
App



Automaker
telematics

Example of how RUC works



Vehicle Owner

- Chooses mileage reporting option
- Chooses account manager
- Reviews invoice
- Makes RUC payment



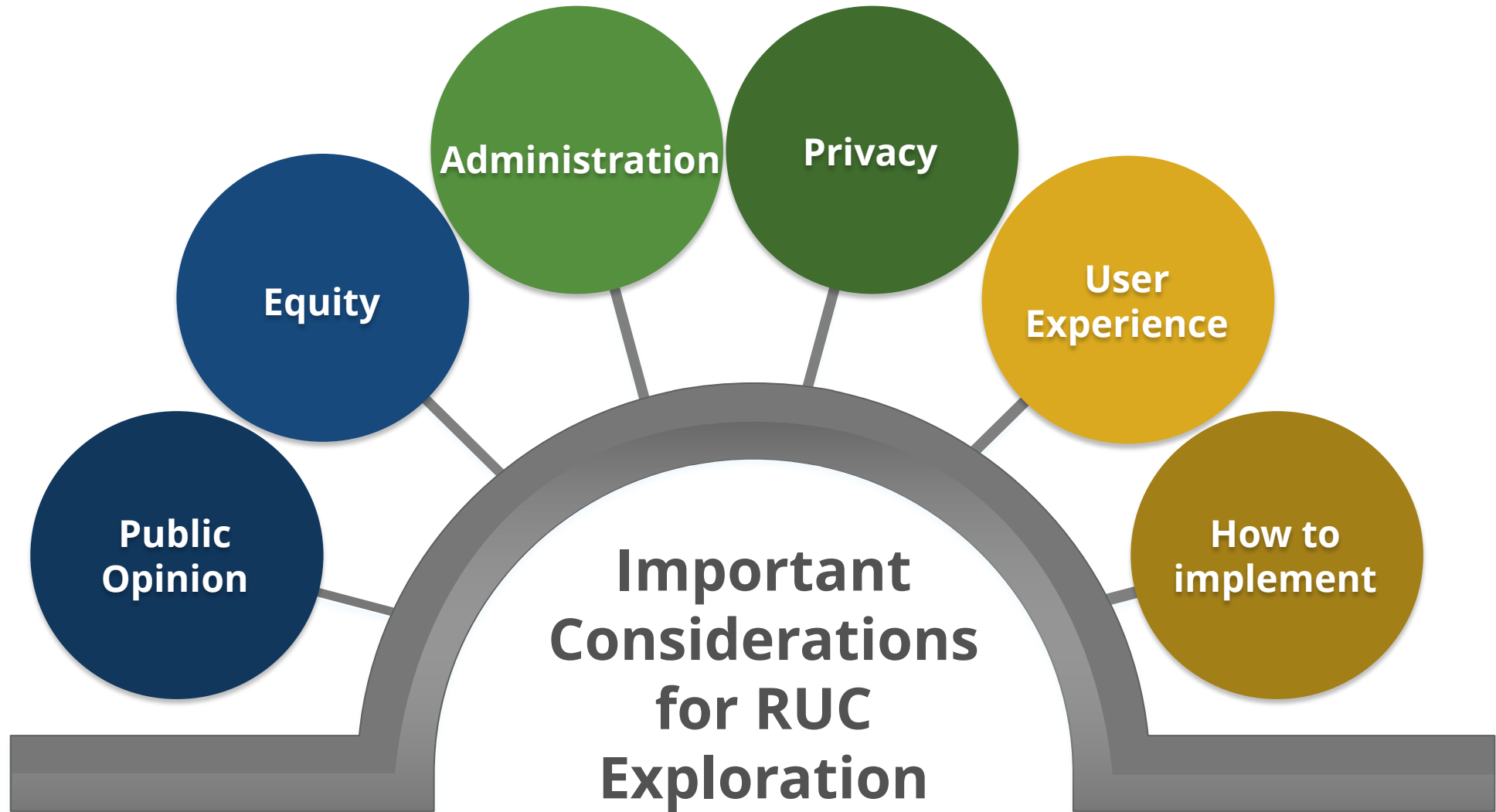
Account Manager(s)

- Processes mileage data and transactions
- Sends invoice to vehicle owner
- Collects payment
- Transfers vehicle owner's RUC payments to State



State(s)

- Certifies and oversees Account manager
- Adjusts RUC policy as needed



4 RUC America

What is RUC America?



A **voluntary assemblage** of state DOT's working together



Build public sector organizational capacity and **develop expertise** for the potential of mileage-based road usage charging



Collaborative forum – facilitate **resource sharing**, functions as a **best practices**: discuss issues, observe and lessons learned



Facilitate **joint research** projects



RUC America has fully funded 24 projects related to feasibility and implementation of RUC

Some areas that RUC America is working on

Platforms and operations for state or regional pilots

Technical research and development

Research of fiscal and economic issues

Administration and operational issues

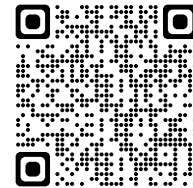
Legal and policy issues

Inter-jurisdictional concerns

Standards and certifications

Stakeholders outreach and communications

Visit rucamerica.org



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States With Enacted RUC Programs

Active RUC programs are growing



Oregon
(2015)



Utah
(2020)



Virginia
(2022)



Hawaii
(2025)



Implementation Date

July 1, 2015



Mileage Reporting Options

- Plug-in devices with GPS, no charge for out-of-state miles
- Non-GPS plug-in device does not calculate or credit out-of-state miles



Account Manager(s)

- Multiple third-party account managers for mileage collection, accounting, payment processing, and customer service



Vehicle Types

Voluntary participation with discounted annual registration fee (no fee cap) for :

- passenger cars and light trucks ≥ 40 MPG
- electric vehicles



Program Size

630 as of November 2023

2001

HB 3946 explores alternative funding methods and reduce dependence on traditional fuel taxes. Road User Fee Task Force created

2006

1st RUC pilot executed; Custom-built in-vehicle technology integrated with gas station point of sale systems for a "pay at the pump"

2007

2012

2nd RUC pilot executed; Open system for per-mile charging with two service providers and three technology options

2013

2013

HB 810 directs ODOT to establish a fully operational RUC program by July 2015

2015

OreGO goes live

2019

HB 2881 OReGO program modification addressing:

- Unlimited participation
- Indexing RUC rates to compare with fuel tax rate
- Vehicles less than 20 MPG not ineligible for program
- 40 MPG and electric vehicles exempt from registration surcharged if enrolled in OReGO
- Converting excess fuel taxes paid to non-refundable RUC credits

2022

RUC charges increased to 1.9 cents per mile



Implementation Date

January 1, 2020



Mileage Reporting Options

- Plug-in devices with GPS
- In-vehicle telematics (only the Tesla 3 and Y are eligible)
- Annual odometer photo true up required



Account Manager(s)

- Single, private third-party account manager for processing, invoicing, payment processing and customer service



Vehicle Types

Voluntary participation in lieu of registration surcharge (fee cap) for:

- electric vehicles



Program Size

5,020 as of December 2023

2018 SB 136 establishes Utah RUC program to be implemented by January 1, 2020

2019 SB 72 granted rulemaking authority to UDOT and Transportation Commission and directed information sharing between UDOT and DMV

2020 Utah Legislature adopted SB 150 which directs UDOT to prepare a plan to enroll all vehicles registered in the state in RUC program by December 2032

2023 Legislature reduced initial 1.5 cents per mile to 1 cent per mile (reduced to encourage program participation); conducted customer experience research

2023 - Conducting UDOT Local Road Usage Charge (RUC) and Tolling Integration Pilot
2024

Virginia



Implementation Date

July 1, 2022



Mileage Reporting Options

- Plug-in devices with or without GPS
- In-vehicle telematics
- Annual odometer photo true up via mobile app required



Account Manager(s)

- Single, private third-party account manager for processing, invoicing, payment processing and customer service



Vehicle Types

Voluntary participation in lieu of highway use fee (fee cap) for:

- passenger cars and light trucks > 25 MPG
- electric vehicles



Program Size

22,000 as of December 2023

2020 SB 890 established highway use fee and RUC program to become operational by July 1, 2022

2022 July 1st Mileage Choice Program became effective



Hawaii



Implementation Date

July 1, 2025



Mileage Reporting Options

- Annual motor vehicle inspection- collect/report vehicle odometer reading



Program Manager

- Department of IT for processing & RUC calculation
- County DMVs for payment processing and customer service



Vehicle Types

- 2025 – 2027: Voluntary participation in lieu of registration surcharge (fee cap) for electric vehicles
- 2028: Mandatory RUC for all EVs



Program Size

- 2028: all EVs (~50,000 vehicles)

- **2016** HDOT conducts feasibility study to explore RUC as an alternative to state gas tax
- **2016** HDOT applies for and receives STSFA grant and launches Hawaii RUC Demonstration
- **2019** HiRUC Pilot, Part 1: Assessing public understanding and preferences
- **2020**
- **2021** HiRUC Pilot, Part 2: Testing technology approaches
- **2022**
- **2023** SB 1534 establishes RUC Program with a July 1, 2025, implementation date.
- **2025** RUC program launches; HDOT to deliver a transition for all vehicles to be on a RUC by 2033
- **2028** Mandatory RUC for all EVs begins

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RUC America States Exploring or Piloting RUC

California



Pilot Focus

- Test mileage-based fee system with different technology and payment options
- Test how RUC can work with usage-based insurance, ridesharing, electric vehicle charging stations/pay-at-the-pump systems, and autonomous vehicles
- Billing methods: identity challenges with mileage-based fees, credits, and refunds



Technologies Demonstrated

- GPS Pre-paid permits, odometer image self-reporting, odometer inspection, smartphone app with location, plug-in devices with or without GPS to differentiate between exempt and nonexempt roadways and charge accordingly, telematics, and heavy vehicle OBUs



Account Management

- Private third-party account managers used for data collection and processing, invoicing, payment processing, fuel tax credits and customer service.



Next Steps

- Charging rate structure- 1st group charged a per mile rate 2nd group charged based on the fuel economy rating of their individual vehicle

- **2014** SB 1077 is introduced, directing creation of a RUC
- **2015** RUC pilot program is designed
- **2016** RUC pilot is executed statewide
- **2017** Findings of the pilot program are made public
- **2018** SB 1328 is introduced, which is an extension of SB 1077
- **2019** Four-phase demonstration is introduced and aimed at evaluating emerging technologies
- **2021** Live operations of the pilot are executed; SB 339 is introduced, extending all existing road charge laws until 2027; collection pilot is authorized
- **2022** Findings of the four-phase pilot are released
- **2023** Public/private road charge pilot is executed
- **2035** In accordance with Advanced Clean Cars II regulations, only zero emission vehicles will be sold in the state

Colorado



Pilot Focus

- Evaluate per-mile RUC system with multiple reporting options



Technologies Explored or Demonstrated

- Plug-in devices with or without GPS
- Odometer image
- Significantly Higher participant satisfaction with technology-based reporting solutions



Account Management

- Private third-party account manager(s) for data collection, processing, invoicing, fuel tax credits and customer service

- **2007** Governor Bill Ritter Appoints Transportation Finance and Implementation Panel
- **2008** Transportation Finance and Implementation Panel Recommends Exploring RUC fee
- **2011** Colorado Mileage Based User Fee Study to identify Strategies and engage the public
- **2014** CDOT joins RUC West to collaboratively research RUC systems
- **2015** CDOT Submits an internal research proposal to test the viability of RUC system
- **2016** RUC pilot begins
- **2017** RUC pilot launches and final report released

Minnesota



Pilot Focus

- Assess public opinion and understanding of transportation funding and awareness of RUC
- Test per-mile RUC system



Technologies Explored or Demonstrated

- GPS equipped smartphone to collect travel data and assess the reliability of a road use fee
- Real-time traffic alerts, accident notifications, and road hazards to enhance driver safety
- Telematics, Fleet-based shared mobility services with 2 providers



Account Management

- Private third-party account managers for data collection, processing, invoicing, and customer service



Next Steps

- Test the scalability of using embedded telematics systems directly sourced from automobile manufacturers for the purposes of computing distance-based fees

- **2003** Formed multi-state pooled fund project to assess RUC
- **2006** Conducted pay-as-you-drive RUC pilot
- **2010** Conducted public opinion research
- **2013** RUC policy task force and RUC pilot
- **2017 - 2021** Tested RUC Technologies that enhance RUC administration and collection effectiveness and 12-month pilot for shared mobility fleet
- **2024** New Pilot to test embedded telematics (STSFA Grant funded); Partner on Kansas RUC Study

Oklahoma



Pilot Focus

- Evaluate RUC methods and technology
- Study EV and hybrid vehicles of varying fuel efficiency

Technologies Explored or Demonstrated

- Self-reporting, odometer image, smartphone app with location via Bluetooth connection, and telematics

Account Management

- Private third-party account manager for data collection, processing, invoicing, and customer service

2021 HB 1721 passed, and RUC Task Force begins exploration of declining fuel tax

2023 Fair Miles Oklahoma RUC Pilot begins

Pennsylvania



Multi-State Pilots Focus (Through The Eastern Transportation Coalition (TETC)) Passenger Vehicles

- Assess public opinion and awareness of RUC
- Conduct a geographic equity analysis
- Tolling, congestion mitigation and rate-setting



Technologies Explored or Demonstrated

- GPS enabled smartphone, Plug-in devices with and without GPS
- Installed mileage recording device (commercial)



Account Management

- Private third-party account manager for data collection, processing, invoicing, fuel tax credits and customer service



Commercial Vehicles

- Participant Surveys and Interviews
- Motor Carrier Working Group
- Rate-setting tests to analyze weight-based rate setting approach that can be uniformly applied

- 2018** Multi-state passenger vehicle RUC pilot with stakeholders
- 2018** Multi-state truck pilot participant (via TETC); **2019** Conducted general public passenger vehicle pilot
- 2020** National truck pilot participant (via TETC); **2021** Passenger vehicle pilot focused on rural stakeholders
- 2022** Vehicle Telematics pilot with PennDOT Fleet vehicles and state specific public outreach effort **2023**
- 2024** Ongoing RUC work through TETC

Washington



Pilot Focus

- Per-mile charge system with various service providers and reporting methods
- Exploring RUC policy, public acceptance, user experience, and program options



Technologies Explored or Demonstrated

- First pilot: Pre-paid time permits, pre-paid distance permits, odometer image reporting (self-reported and assisted), smartphone app with optional location, plug-in devices with and without GPS
- Second pilot: Self declaration of odometer readings and telematics



Account Management

- First pilot: Private third-party account managers for data collection, processing, invoicing, and customer service
- Second pilot: Simulation of DMV management of RUC reporting and payment



Next Steps

- Small-scale program legislation
- Multi-state research

- **2012** Legislature directs the Washington State Transportation Commission (WSTC) to research RUC as a potential alternative to declining revenue from fuel taxes
- **2012-2016** Business case analysis, operational concept development, policy analysis, pilot design
- **2017-2020** Regional pilot with 2000+ participants including ~20 Idaho drivers
- **2020-2023** Federally funded research on equity, cost reduction, and user experience including RUC simulation with 1000+ participants
- **2013-2023** Legislative directives guiding research activities



Federal Support for RUC



Federal Grant Programs for RUC

Fixing America's Surface Transportation Act

Surface Transportation System Funding Alternative Grant Program (2016-2021)

- Authorized grants to states for demonstrating user-based alternative revenue mechanisms
 - **\$95M** over 5 years
 - **50% match** (can include toll credits & in-kind services)
 - Application eligibility
 - State DOTs

Bipartisan Infrastructure Law

Strategic Innovation For Revenue Collection Grant Program (2022 – 2026)

- Continues funding for RUC pilot programs
 - **\$75M** over 5 years
 - **Match is 20%** for new applicants; 30% for previous applicants
 - **Expanded application** eligibility
 - State DOTs
 - **Local governments**
 - **MPOs**
- Notice of Funding Opportunity (NOFO) expected Quarter 1 2024



Federal National RUC Pilot

Bipartisan Infrastructure Law

Strategic Innovation For Revenue Collection Grant Program (2022 – 2026)

- **USDOT is required to carry out a national RUC pilot**
 - At \$10M per year
 - For fiscal years 2022 through 2026
 - Required to establish an advisory board
 - Federal System Funding Alternative Advisory Board

\$50M over 5 years for National RUC Pilot!

Thank you!

Randal Thomas, Administrator
RUC America



NEW PATHS TO ROAD FUNDING