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Making the Smart Grid Relevant to Mainstream

January 28, 2021

Chris King - Siemens | Joel Gilbert- Apogee Interactive

APOGEE®

Empowering Utilities for the Future

- Software as a Service (SaaS) provider focused on three major utility initiatives:

Customer Engagement | **Customer Satisfaction** | **Program Participation**

- Best in class Data Analytics
- Providing Consistency, Building Customer Trust

RESNET® RESIDENTIAL ENERGY SERVICES NETWORK

certified WBENC WOMEN'S BUSINESS ENTERPRISE

Microsoft CERTIFIED Partner

Who We Are

Leading the market in customer engagement

In our 27th year

Serving

HUNDREDS

of utilities, reaching

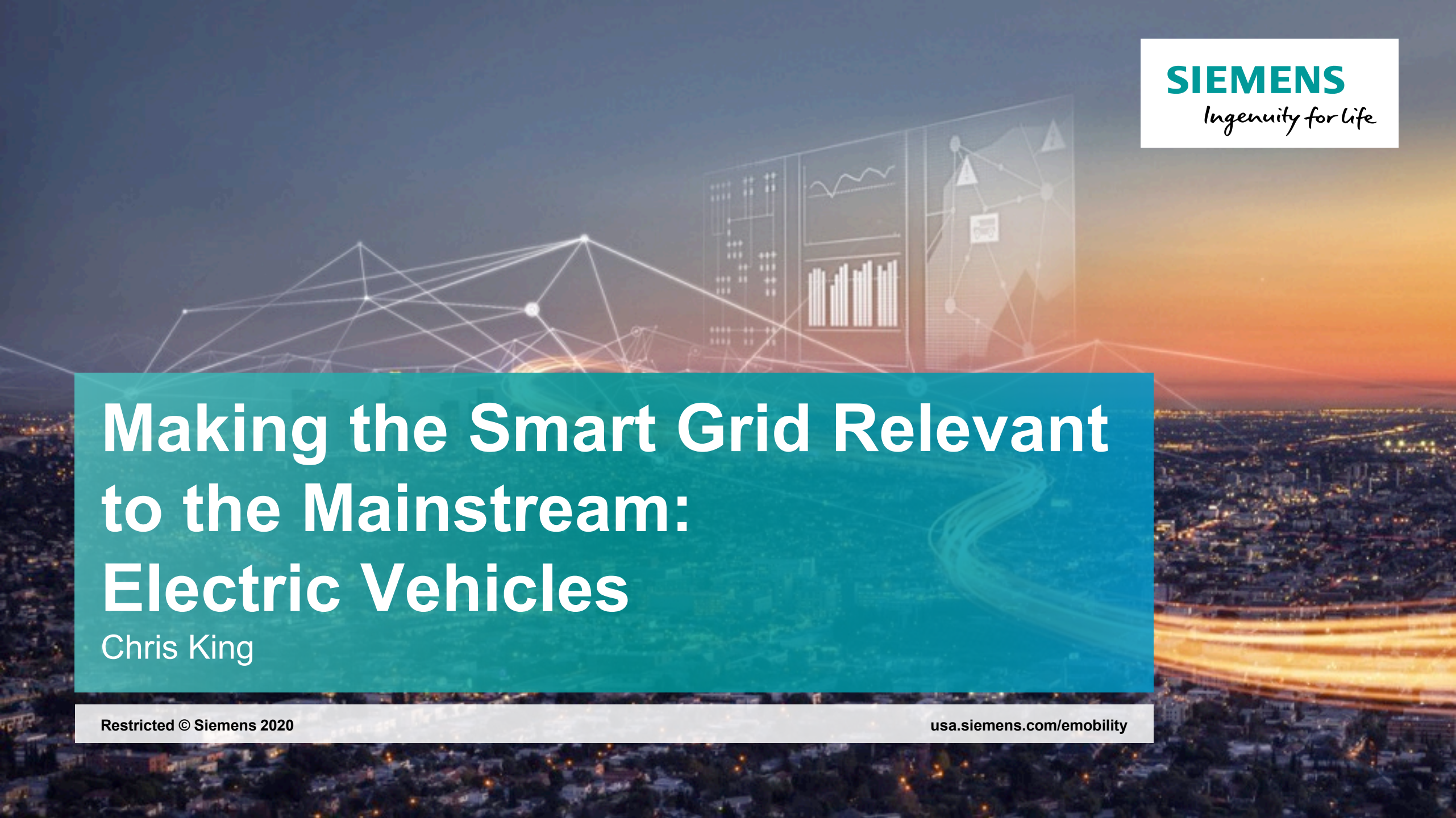
MILLIONS

of customers

PRESENTERS

Chris King, SVP-eMobility Strategic Partnering, Siemens, leads its partner ecosystem and regulatory initiatives globally. Chris's Board participation includes Advanced Energy Economy, Smart Electric Power Association, and Smart Energy Europe. He has testified before Congress, several states, and international policymakers. He holds bachelor's and master's degrees in science and business from Stanford and a doctorate in law. He has received three U.S. patents in clean energy technologies.

Joel Gilbert, P.E. President, Apogee Interactive, brings five decades of applying mathematical methods in diverse challenges starting with the design of nuclear high-speed attack submarine power systems under Admiral Rickover for the Navy. From there, as Deputy Director of the New York Hospital Association, Joel developed the predictive algorithms that specified which type of doctors were needed in the ER or on-call depending on weather and yes, the phase of the moon! He then went on to what most in this industry know him for, modeling cogeneration, peak shaving, and power production systems for large commercial and industrial firms for most of the larger US Investor Owned Utilities. Since founding Apogee in 1993, his analytical skills have been primarily devoted to leveraging technology to help utilities better serve their customers with cutting-edge applications..



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Making the Smart Grid Relevant to the Mainstream: Electric Vehicles

Chris King

Siemens eMobility

Full range of EV charging infrastructure products & services

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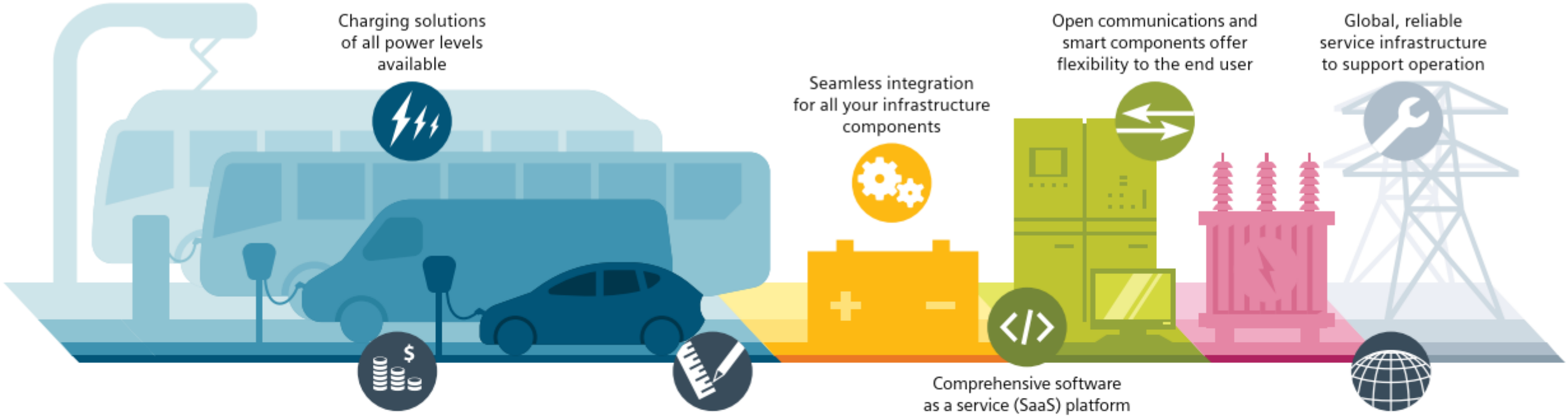

HARDWARE

Chargers:

DC Heavy-duty plug-in (MaxxHP)
Overhead (Go) and Depot (Apex)
AC Level 2 (VersiCharge)
DCFC Level 3 (Ultra)
Battery Storage (Fluence)

DESIGN & BUILD

Large LD Infrastructure Deployment
MD/HD Depot
Microgrid
New Greenfield Projects
Brownfield Projects
Infrastructure expansions
Design Build

SOFTWARE

Charger Management/Billing
Building Management Systems
Grid Integration, Automation and Management
DER Integration

SERVICES

Energy, Markets and Business Consulting
Structured Finance
O&M Management
Turnkey
Maintenance / Service Contracts

Are EVs Reaching a Tipping Point?

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SOLUTIONS EXPERTISE

IHS Markit

Climate and Sustainability Research & Analysis

IHS Markit forecasts global EV sales to rise by 70% in 2021

19 January 2021 | Kevin Adler

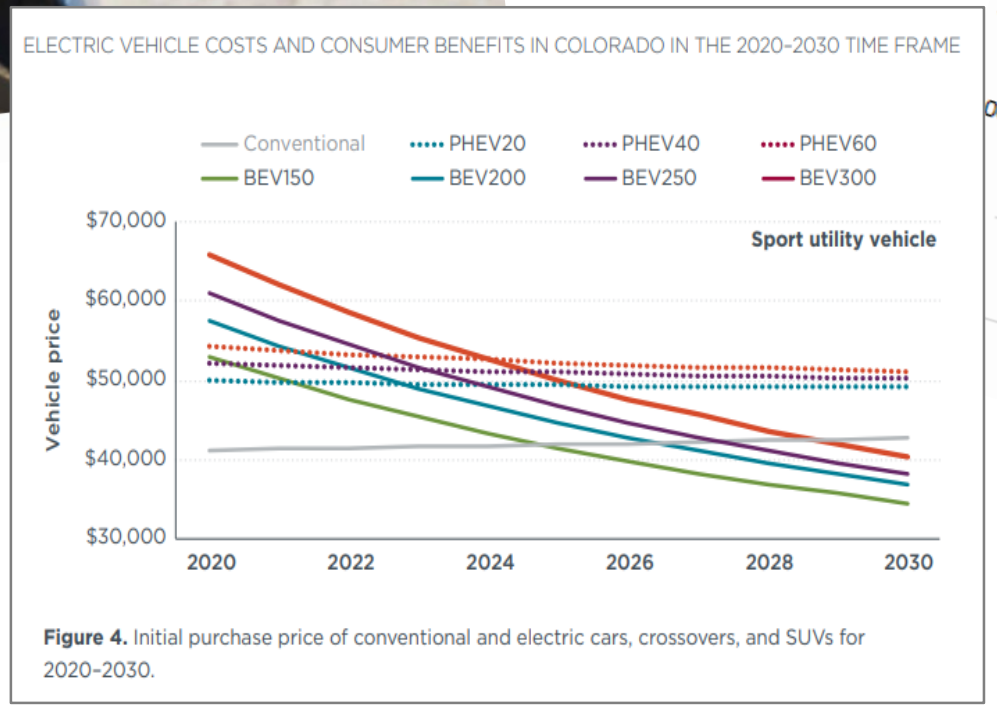
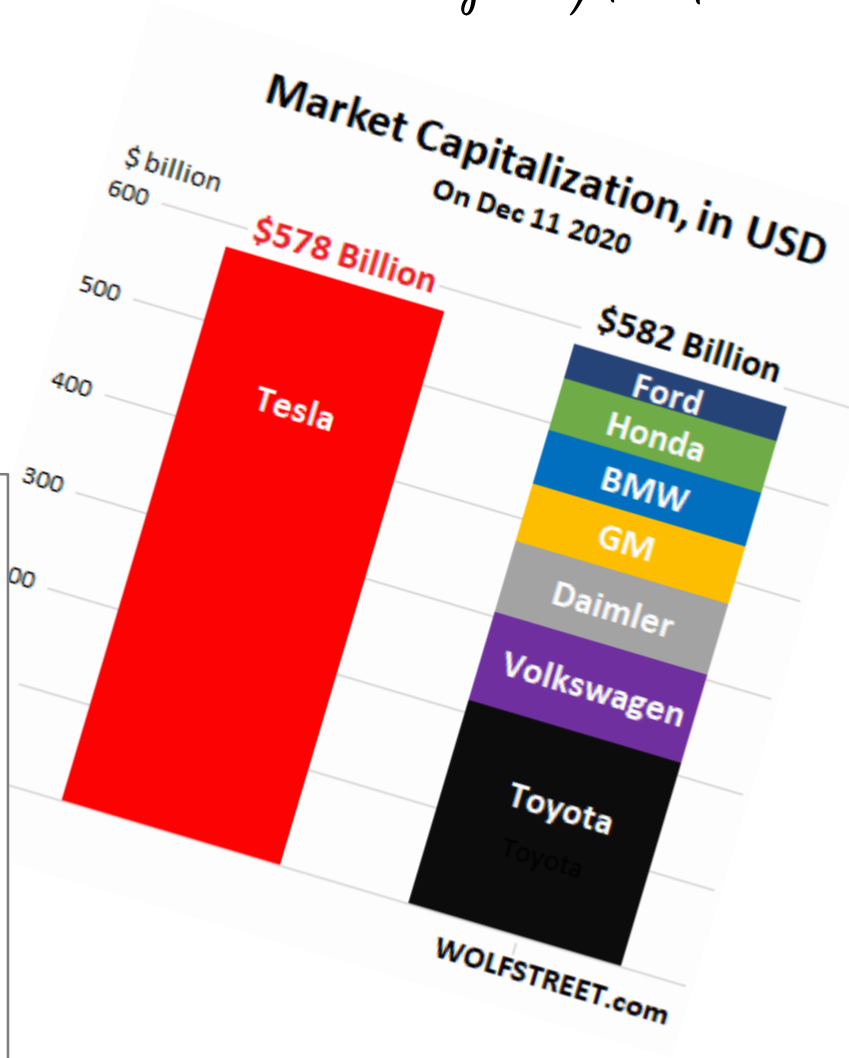


Figure 4. Initial purchase price of conventional and electric cars, crossovers, and SUVs for 2020-2030.



Benefits of EV charging to non-EV owning ratepayers – if you avoid the peak

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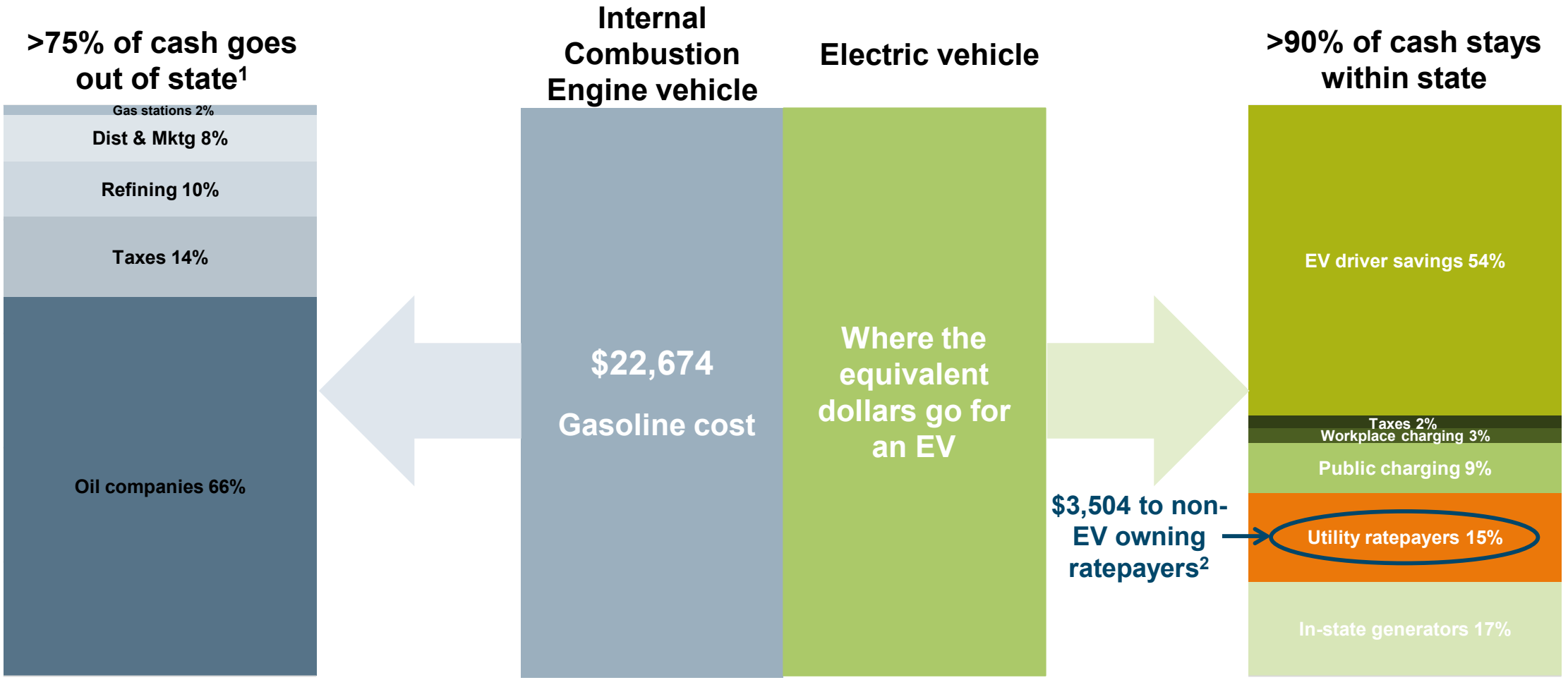

[1] – percentage is lower for oil-producing states

[2] – EV charging revenue paid for T&D portion of electricity rates; assumes 90% of charging is off-peak and, therefore, minimal T&D investment is required

Sources: Energy Information Administration, Union of Concerned Scientists, Siemens

Grid Simulation: High Penetration

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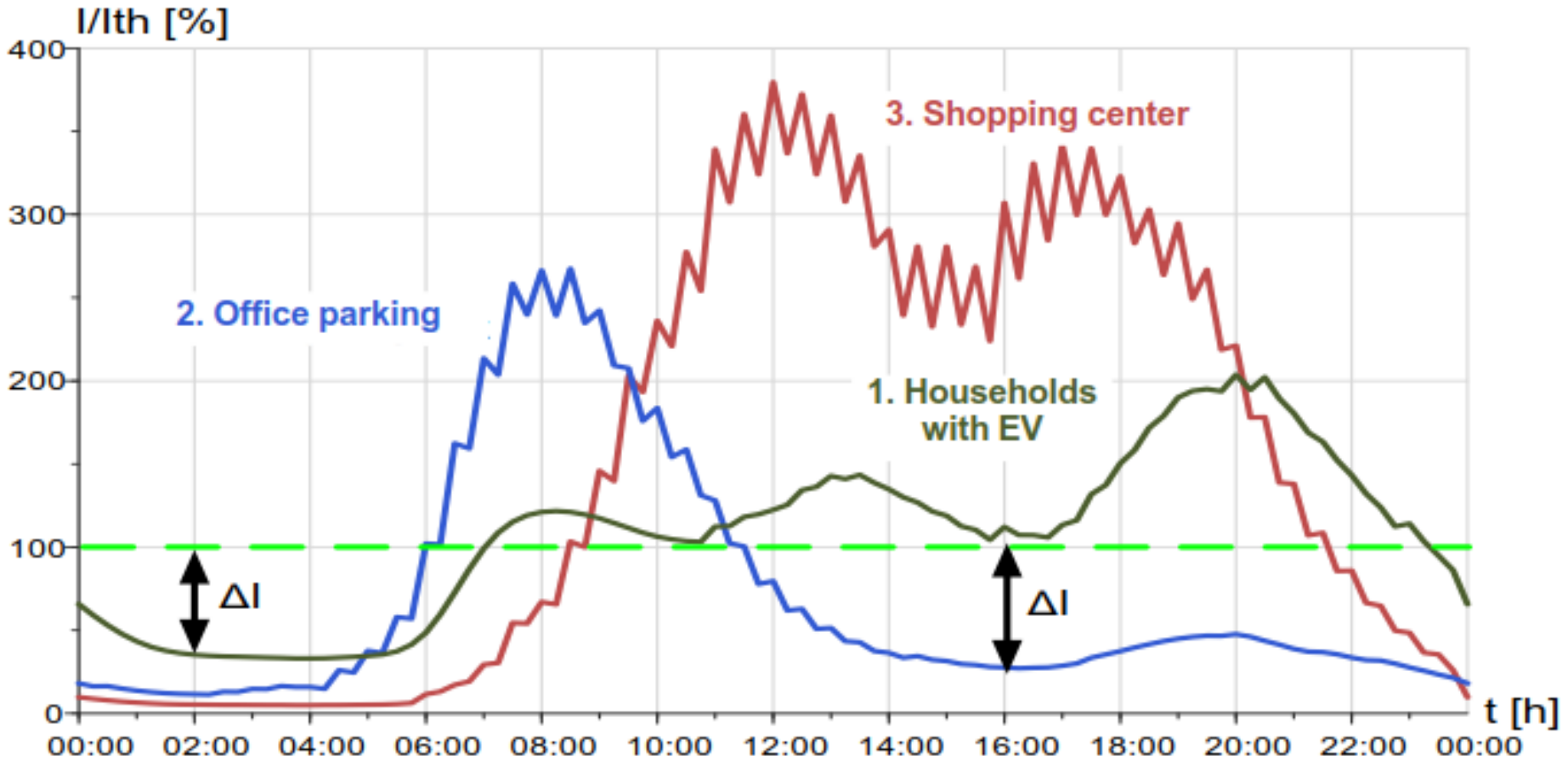
- Study of EV impact
- 50% of a small city, ~20.000 inhabitants in scope, one car per household, 50% EV rate
- 11kw charging
- Real driver behaviour / statistics
- Simulated in a real distribution grid



Core Elements of Smart Charging

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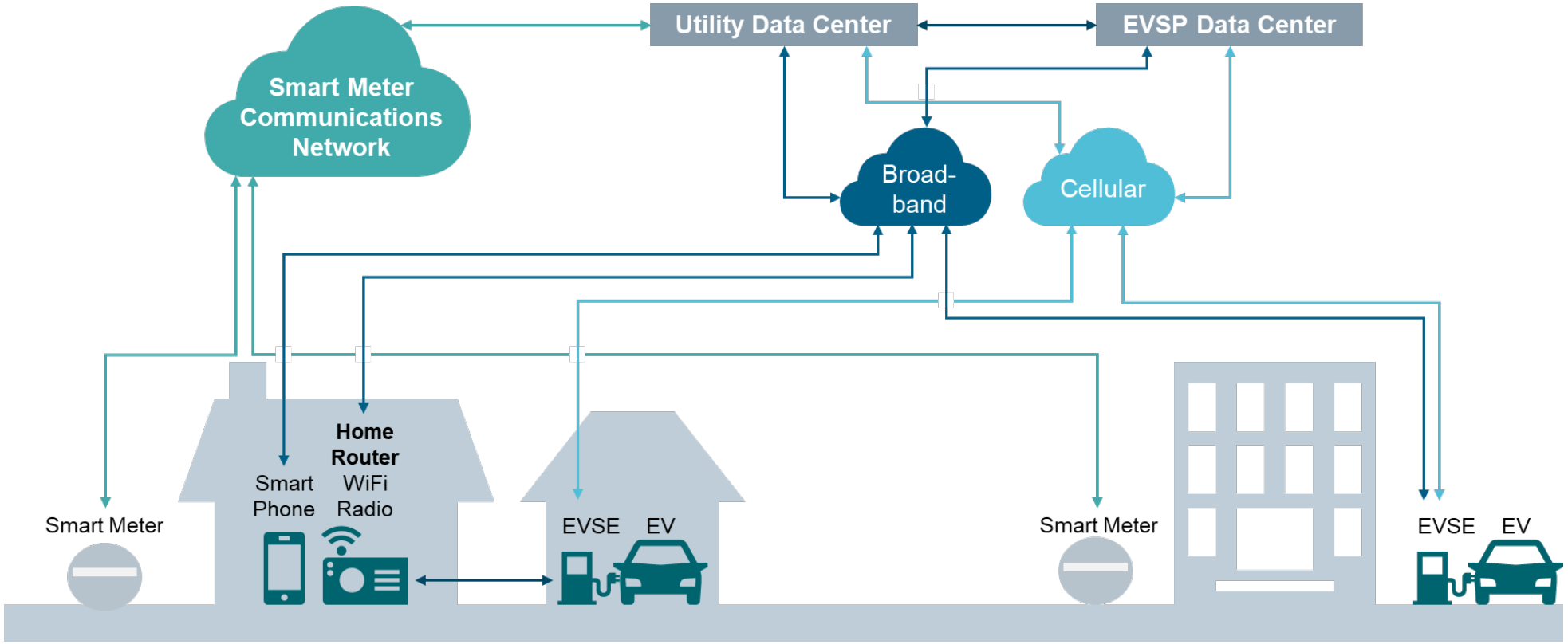
1. Networked via two-way data communications
2. Remote control
3. Smart utility meter and submeter in charger (EVSE)



Xcel Residential Programs
"Easy Button" for smart charging

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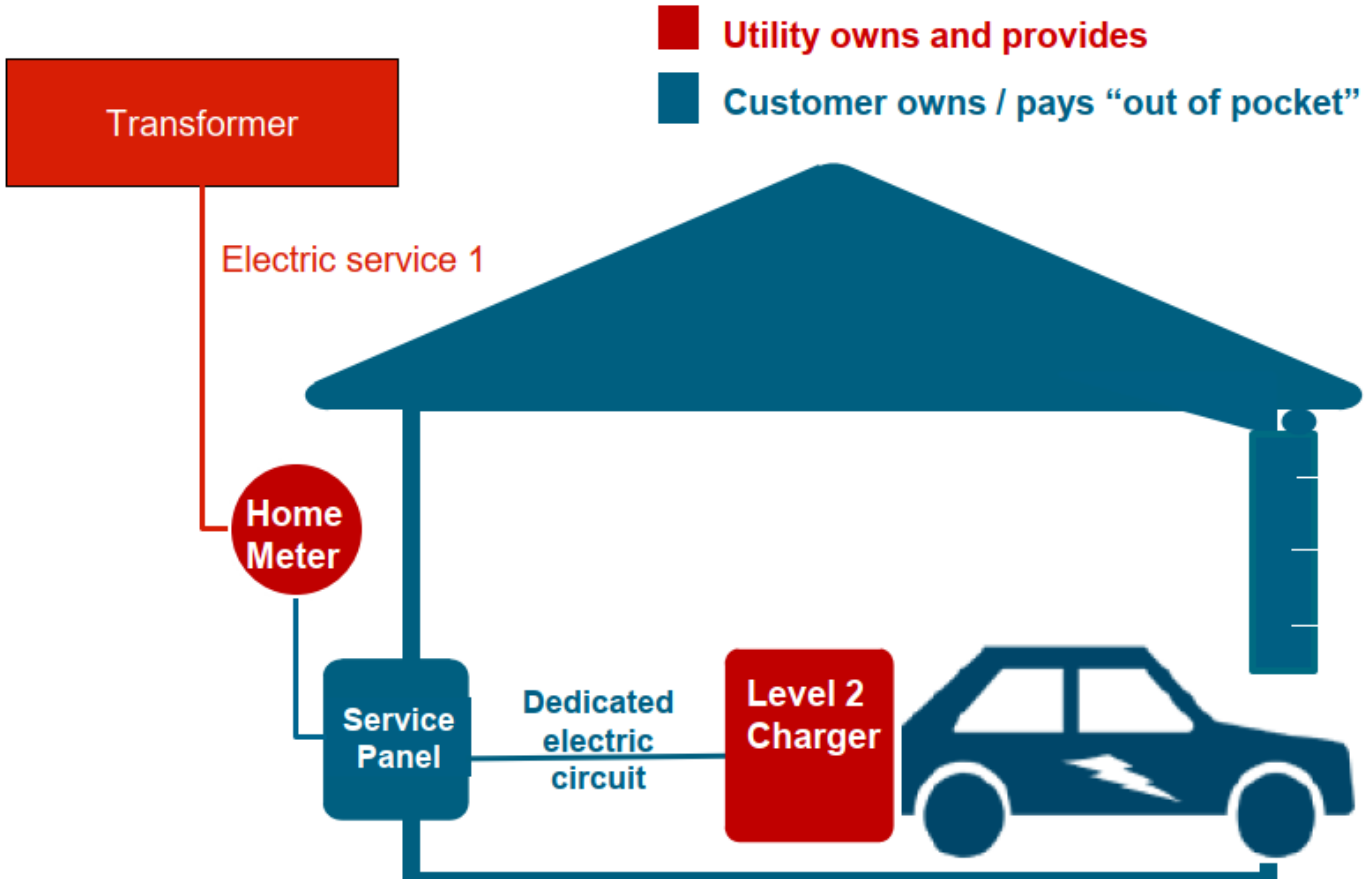
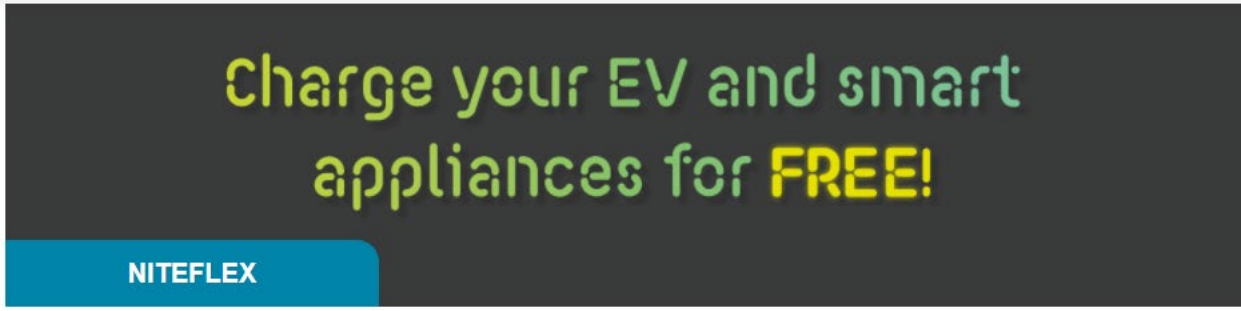
- **Consumer**
  - ✓ Buy EV
  - ✓ Call utility or go online
- **Charger**
  - ✓ Smart: communications & submeter
  - ✓ Utility provides, installs, operates, and maintains
  - ✓ $17.47/month
- **Electricity**
  - ✓ Flat monthly fee for off-peak consumption
  - ✓ Based on average EV
  - ✓ $26.16/month



Dynamic Pricing
Innovating on time-of-use rates



The NiteFlex® rate is designed for consumers who want to save money by adjusting when they use energy. You'll pay a lower rate for electricity during certain times of the day. This rate is ideal for smart appliance users, electric vehicle owners recharging their vehicles overnight – **for free** – or anyone who shifts energy use to later hours. Switch to the NiteFlex rate today.

Benefits of NiteFlex

- Take advantage of 400 kWh of **free energy use**.
- Lower your bill by adjusting when you use energy.

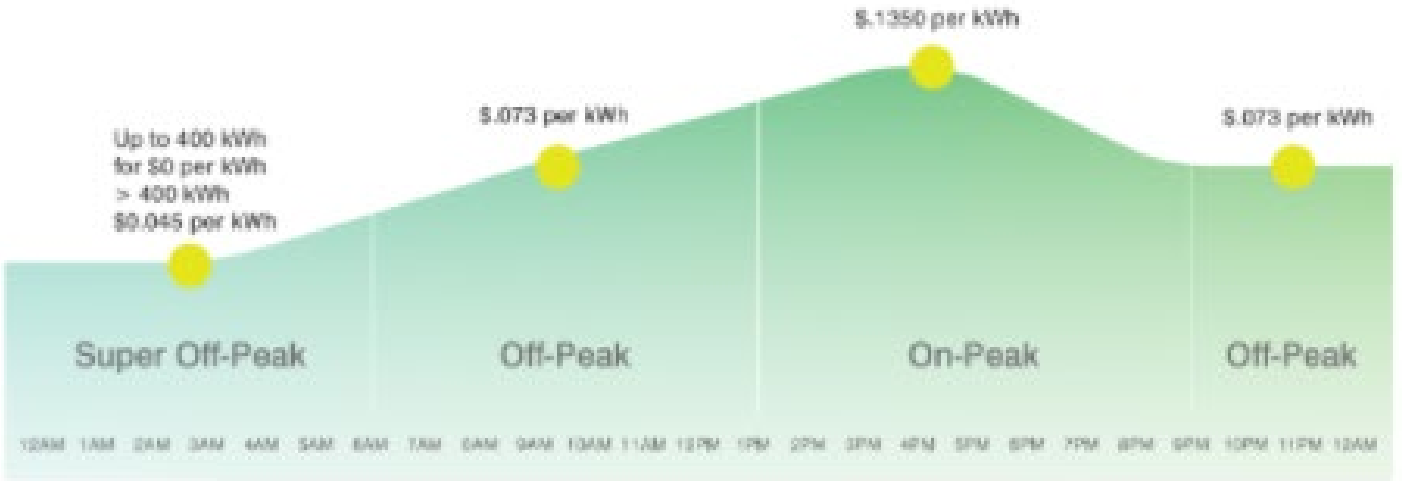
FAQs
Have questions? We have answers!

Electric Vehicles
Thinking about going EV? Take a look at our resources!

COBB EMC
BRINGING YOU POWER
A Touchstone Energy® Cooperative

How the NiteFlex rate works

Electric use is calculated based on the time of day.



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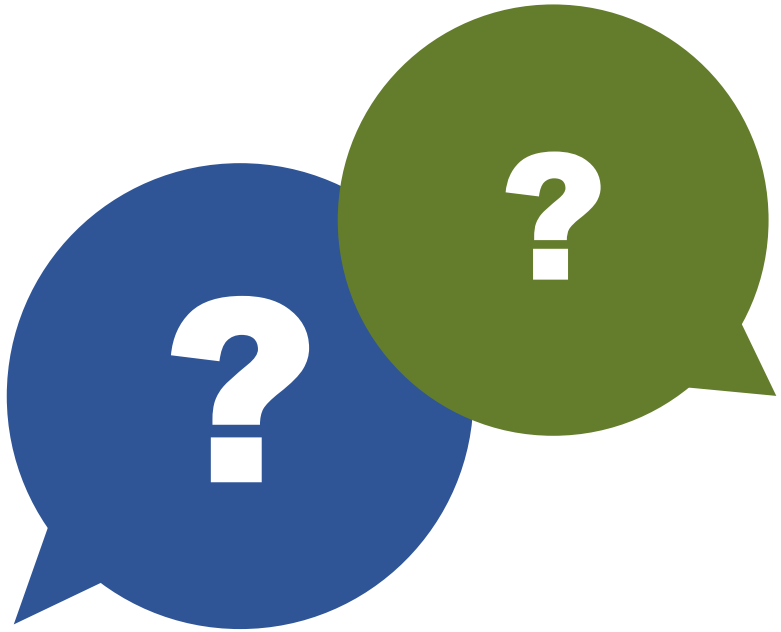
Any Questions



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Upcoming Events

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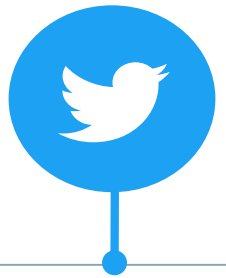
February 25 | 2021 Trends in Customer Engagement

March 25 | The Rates They are A Changin… *with Ahamd Faruqui*

facebook.com/APOGEEInteractive/



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