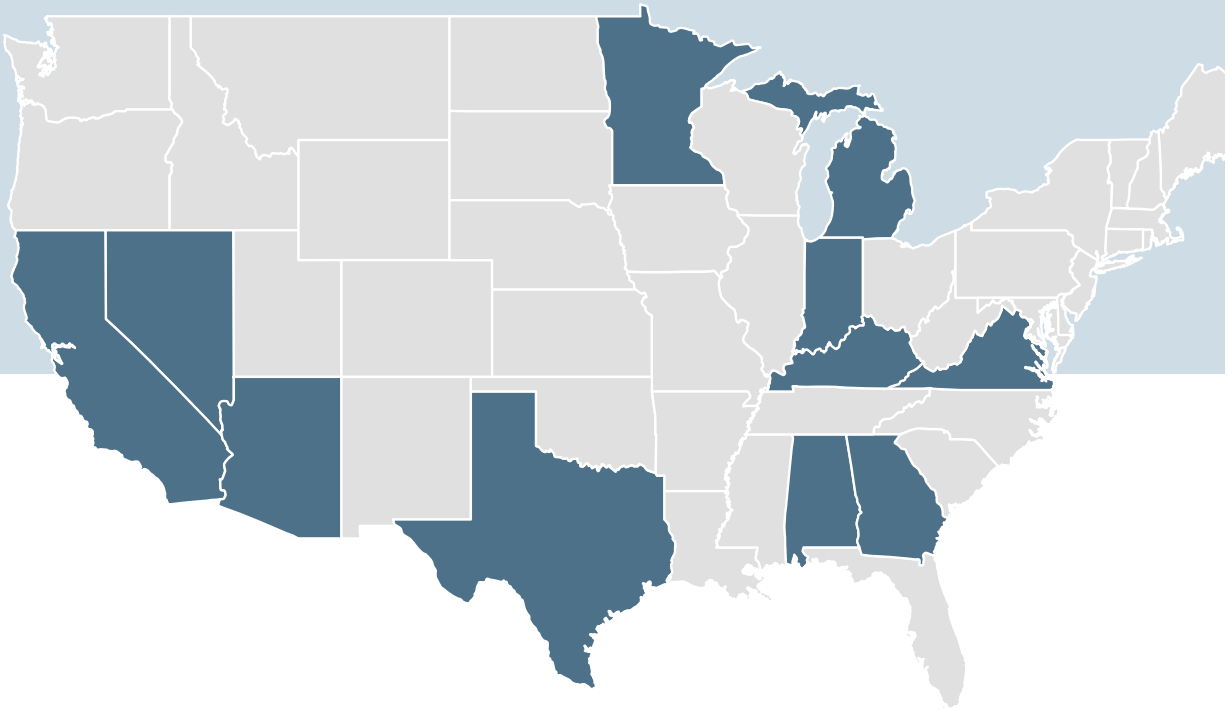
Volume III: Summer 2013



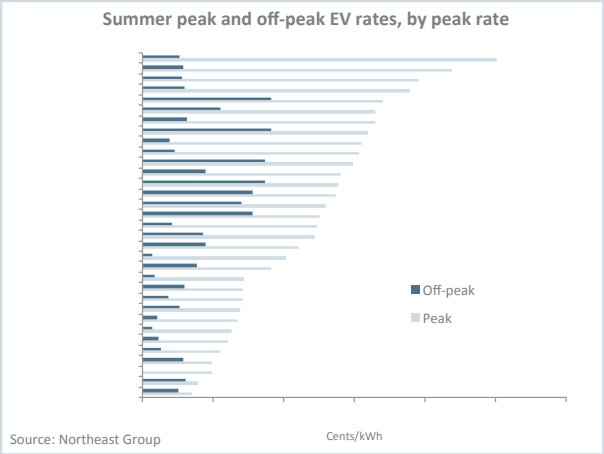
northeast group, llc

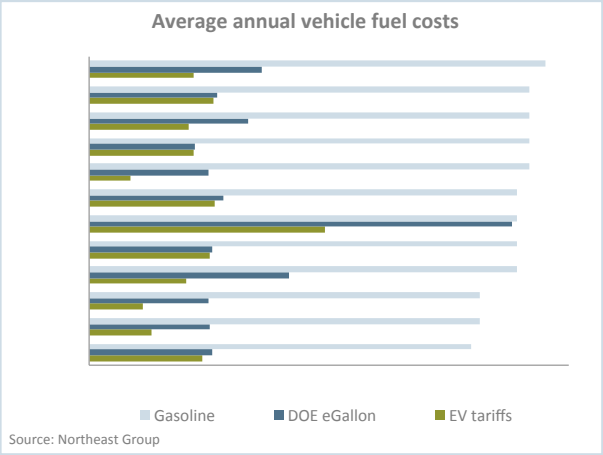
United States Smart Grid: Utility Electric Vehicle Tariffs

Volume III: Summer 2013

July 2013 | www.northeast-group.com

As of mid-2013, there were more than 100,000 plug-in electric vehicles (EVs) on the roads in the United States. In 2012 alone, more than 53,000 plug-in EVs were sold in the US market. But this is falling short of the Obama administration's initial goal of one million EVs by 2015. Various catalysts are needed to boost EV penetration. In June 2013, the Department of Energy announced its "eGallon" metric, a simple way to compare the cost to fuel an EV compared with the cost of gasoline. Going beyond the eGallon, several electric utilities across the US have offered special EV-specific tariffs for their customers. These offer EV owners significant additional savings beyond standard electricity rates, and can help contribute to the overall uptake of EVs in the US.

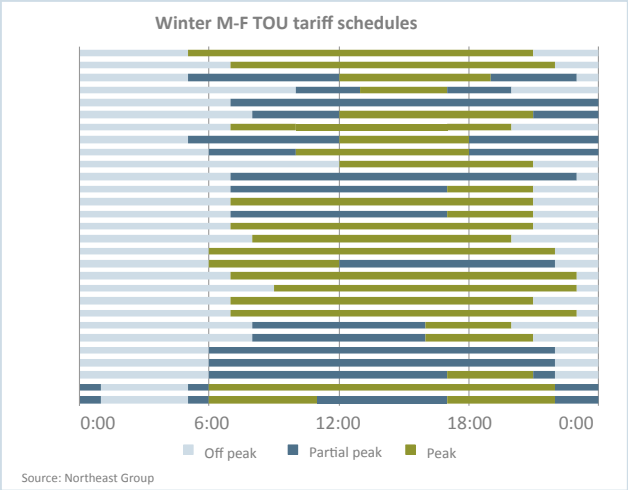




Northeast Group first published its benchmark and analysis of these EV tariffs and their implications for utilities and EV owners in July 2011, followed by a second volume in July 2012. This third volume of the benchmark includes EV tariffs from 19 additional utilities since the first volume two years ago. The third volume also includes further analysis of these tariffs and comparisons with the US Department of Energy's new "eGallon" metric.

Utilities included in this benchmark are located in the following states:

- Alabama;
- Alaska;
- Arizona;
- California;
- Georgia;
- Hawaii;
- Indiana;
- Kentucky;
- Michigan;
- Minnesota;
- Nevada;
- Texas;
- Virginia.



© 2013 Northeast Group, LLC

Key questions answered in this report:

- Which utilities offer EV tariffs and what tariff structures have they used?
- How do EV tariffs compare to the eGallon metric created by the US Department of Energy?
- How have utilities structured their EV time-of-use (TOU) rates and what is the average peak to off-peak discount?
- What issues help determine whether to use single or second meters for EV tariffs?

Table of Contents

1. Key findings 1
2. Background 1
3. The EV market and tariffs in 2013 4
4. Tariff structures 7
    4.1 TOU tariffs 8
    4.2 Flat rate tariffs 9
    4.3 Sliding scale tariff mechanisms 9
5. Issues related to tariff structures 10
    5.1 Single meter vs. second meter 10
    5.2 Comparison to DOE "eGallon" 12
    5.3 Comparison to non-EV TOU rates 13
    5.4 Summer vs. winter rates 15
    5.5 Public charging plans 15
6. Benchmark of US utility EV tariffs 16
    6.1 EV TOU rates: peak and off peak 19
7. Scenario analysis: tariffs compared 20
    7.1 How do these tariffs play out in various scenarios? 20
    7.2 What do these scenarios reveal? 21
8. More EV tariffs on the way 24
9. Appendix: EV tariffs offered by US utilities in 2013 25

List of Figures

Figure 1: Locations of utilities with EV tariffs 2
Table 1: Cost comparison—Conventional vehicles vs. EVs in Northern California 3
Figure 2: Percentage of customers with access to EV tariffs 4
Figure 3: Percentage of utilities offering EV tariffs 4
Figure 4: Two tariff structures 7
Table 2: List of utilities using each tariff structure 8
Figure 5: Tiered summer peak pricing at PG&E 9
Table 3: Utilities with whole house or 2nd meter options 11
Figure 6: Average eGallon costs with EV tariffs 12
Figure 7: Average eGallon costs by state with and without EV tariffs 13

© 2013 Northeast Group, LLC

Figure 8: Annual savings from EV TOU rates as opposed to regular TOU rates (40 miles/day) 13
Figure 9: Summer off-peak discount 14
Figure 10: Winter off-peak discount 15
Figure 11: Summer M-F tariff schedules 16
Figure 12: Winter M-F tariff schedules 17
Figure 13: Summer peak and off-peak EV rates, by peak rate 17
Figure 14: Summer peak and off-peak EV rates, by off-peak rate 18
Figure 15: Winter peak and off-peak EV rates, by peak rate 18
Figure 16: Winter peak and off-peak EV rates, by off-peak rate 19
Figure 17: Summer peak charging scenario 21
Figure 18: Winter peak charging scenario 22
Figure 19: Average annual vehicle costs 23

© 2013 Northeast Group, LLC

Order Form – Utility Electric Vehicle Tariffs

Pricing

Single user – $699 | Enterprise license – $999

Clients purchasing a single user license are limited to one user for this report. The enterprise license allows all employees within a single organization to view the report. Any forwarding or sharing of the report to others who have not paid for it is strictly forbidden.

Email orders: Fill out and scan the sheet below. Please email orders to **ben.gardner@northeast-group.com**

Telephone: We can be reached at **+1.202.538.0848**. Please have all of the information below ready to expedite your order.

Customer information

☐ SINGLE USER ☐ ENTERPRISE LICENSE

NAME		POSITION	COMPANY
ADDRESS			
CITY	STATE	POSTAL CODE	COUNTRY
TELEPHONE		EMAIL	

Credit card information

☐ AMERICAN EXPRESS ☐ DISCOVER ☐ MASTERCARD ☐ VISA

CARD NUMBER		EXPIRATION DATE	CV CODE
CARDHOLDER'S NAME		SIGNATURE	DATE
BILLING ADDRESS			
CITY	STATE	POSTAL CODE	COUNTRY

By purchasing this report I agree to abide by the following terms and conditions: 1. Single-user license - use of this report is restricted to one individual. 2. Enterprise license – use of this report is restricted to individuals within a single enterprise or organization. I agree not to forward or share this report to others who have not paid for its use.