Summary of *recent* ICCT resources related to electric drive
ICCT 关于电驱动车技术和政策相关报告、出版物和会议总结（2014 年 11 月更新）

蓝色标题的项目是 2014 年更新的内容
红色标题的项目是 2013 年交通论坛上提交过的内容

1. U.S. state-level assessment of EV incentives

- *Summary:* Survey comparing different types of incentives for electric vehicles and charging infrastructure across U.S. states. The project monetizes the value of each incentive for consumer on a state-specific level. The level of support in each state will be compared with charging infrastructure installations and electric vehicle sales, to the extent that data is available. This project may include a phone survey of owners of publicly available EV chargers to collect data on charger usage and test for a link between state support for EVs/chargers and actual usage of public chargers.
- *Status:* Jin, L. Searle, S., Lutsey, N. (2014). Evaluation of state-level U.S. electric vehicle incentives. http://www.theicct.org/evaluation-state-level-us-electric-vehicle-incentives

美国州级政府对电动车的激励政策（报告）

总结美国各州对电动车的经济和非经济性激励政策（非经济政策包括给予电驱动车快车道使用权等），提出一系列方法论将非经济政策货币化，从而量化比较各州的总激励水平，以及分析总激励水平与电驱动车（包括纯电动车和插电式混合动力车）的市场和应用比例。研究表明除了国家层面的激励政策外，州级地方激励政策对拉动电动车市场及使用有明显的作用。

2. Global EV incentive assessment

- *Summary*: Survey and analysis of the use of consumer rebate and tax incentives to promote sales of electric vehicles in major automobile markets around the world. This was prompted by many regulatory and industry colleagues' (many in EU) need to get a global comparison to make sense of the scattering of dramatically good and bad media on EV market. The paper finds that fiscal incentives/taxation are playing important role in increasing early market share (dramatically reducing the effective total cost of ownership), but these fiscal measures certainly are not the only important policy lever.
- *Published*: Mock, P., Yang, Z. (2014). "Driving electrification: A global comparison of fiscal policy for electric vehicles." http://www.theicct.org/driving-electrification-global-comparison-fiscal-policy-electric-vehicles.

各国（轻型）电动车经济激励政策比较（报告）

总结全球主要轻型电动车市场在国家层面对电动车提供的财税优惠政策。文本既对各个国家和地区的政策进行了量化的、横向的对比，也对每一个国家和地区电动车和相应的传统燃油车的保有和使用成本进行了对比。研究表明虽然购买阶段的经济激励政策（如购买补贴或减税）对消费者购买决策会产生一定影响，长期保有和使用阶段的总成本对消费者决策有更明显的影响。

3. German-American Chambers of Commerce EV Event

- *Summary*: Automotive Forum event "Is the Future Electric?" Panel discussion with diverse audience of representatives, including Chelsea Sexton (*Who killed the electric car?*), John Voelcker (*Green Car Reports)* and Germany-based companies (VW, BMW) for broader exposure on EV developments. Nic participated in panel (New York, April 17).
- *Event:* http://www.gaccny.com/events/our-events/single-view/events/gacc-automotive-forum-plug-in-and-take-off-electric-cars-on-the-rise
- *Blog:* http://www.theicct.org/blogs/staff/show-vehicles-or-all-differing-electric-vehicle-strategies-emerge

德美商会电动车论坛（会议）

ICCT 参与了 2014 年 4 月德美商会电动车“未来是否会电动化”论坛的专家讨论。

4. Bloomberg electric vehicle webinar

- *Summary*: ICCT co-sponsored webinar with Bloomberg Government. Survey of recent developments, statistics, policy related to the development of the emerging electric drive market. Nic participated in March 13th one-hour webinar, which had 100+ attendees and increased broader organizational exposure on the topic of EVs.
- *Webinar archive*: “The state of the U.S. electric vehicle market.” http://about.bgov.com/events/the-state-of-the-u-s-electric-vehicle-market-webinar/

Bloomberg 电动车网络研讨会（会议）

ICCT 与彭博政府共同举办了一次电动车政策网络研讨会，会议主要讨论了新兴电驱动车市场的发展概况和政策。

5. Transitioning to Electric Drive Vehicles

- *Summary*: ICCT commissioned study led by David Greene. This report is the sequel to a previous study described below (“US and California transition to electric vehicles”). The new report analyzes the effects of timing and intensity of policies on costs and benefits of an EV transition and expands the analysis to include U.S. incentives on a national level that lag California’s by 5 years. The major findings are that starting EV policies and incentives 5 years earlier or doubling the intensity of those programs increases upfront costs but increases benefits by a greater amount, illustrating the importance of aggressive policies to support a successful EV rollout.
- *Reference:* Greene, D., Park, S., Liu, C. (2014). *Transitioning to Electric Drive Vehicles: Public Policy Implications of Uncertainty, Network Externalities, Tipping Points and Imperfect Markets.* Prepared for the International Council on Clean Transportation. http://www.theicct.org/transitioning-electric-drive-vehicles

向电动汽车的过渡（报告）

继2013年6月ICCT受加州空气资源委员会(CARB)委托撰写了分析加州向电动车市场转变的成本收益之后，这份2014年的新报告进一步分析了对电动汽车的过渡成本和效益的政策时机和力度的影响，并将分析扩展到美国联邦政府的政策。研究发现，加州政府启动电动汽车的政策和激励措施早于联邦政府5年，其结果是电动车的销售和应用比例大大高于联邦平均水平，这一结果强调了电动车政策时机的重要性。

6. Advanced vehicle technology over long-term 2050 context

- *Summary*: ICCT’s John German was a lead technical contributor to this NAS report. This report by the preeminent technology thinkers, examines the long-term prospects for all advanced internal combustion, hybrid, electric-drive, etc technologies. The study essentially finds that electric-drive technologies (battery-electric, hydrogen fuel cells) will become cost-competitive with advanced conventional and hybrid technology by 2040.
- *Reference*: National Research Council (2013). *Transitions to Alternative Vehicles and Fuels*. *http://books.nap.edu/catalog.php?record_id=18264*. National Academies Press. Washington DC.

对到 2050 年先进的汽车节能技术的展望（出版书籍）

本书由美国国家科学院(NAS)组织相关专家撰写并出版，展望了未来几十年传统内燃机先进技术的发展、混合动力技术、电驱动技术和氢燃料电池技术的长期发展和成本变化趋势。研究表明纯

电动和氢燃料电池技术将在 2040 年之前从成本收益方面超过（优于）其他先进技术类别。ICCT 的高级顾问 John German 撰写了部分电驱动车相关章节。

7. Electric vehicle grid integration in the U.S., Europe, and China

- *Summary:* Examines key drivers of EV adoption, with an emphasis on vehicle-charging scenarios and infrastructure and an eye toward identifying options that can maximize benefits from greater EV use to both consumers and the grid.
- *Reference:* MJ Bradley and Associates (2013) Electric vehicle grid integration in the U.S., Europe, and China: Challenges and Choices for Electricity and Transportation Policy. http://www.theicct.org/electric-vehicle-grid-integration-us-europe-and-china.

在美国、欧洲和中国发展电动车对电网的影响（报告）

分析了在三个市场发展电动车对充电、供电设施的要求，并分析不同方案以最大程度地使电动车的使用对消费者和电网带来双赢。

8. US and California transition to electric vehicles

- *Summary*: In research developed, steered by ICCT, David Greene and colleagues study the cost and policy requirements to deliver a transition to electric-drive fleet. The study develops the most rigorous model to date to study the timing and the roles of technology advancement cost and policy in this transition. A critical finding is that there will need to be long-term policy support, and continued investment to manage a successful electrification launch in the 2020-2050 timeframe.
- *Reference*: Greene, D., Park, S., Liu, C (2013). *Analyzing the Transition to Electric Drive in California*. Prepared for the International Council on Clean Transportation. http://www.theicct.org/analyzing-transition-electric-drive-california

分析加州向电动汽车的转变

ICCT为加州空气资源委员会做的特别报告，模拟加州向电动汽车转变的成本、收益、障碍和政策效果。

9. Calculating electric drive lifecycle carbon emissions

- *Summary*: This project seeks to better understand and quantify the lifecycle greenhouse gas emission impacts of electric drive vehicles, to better inform policymakers and consumers on their benefits and key factors involved.
- *Reference*: Pike, E. (2012). *Calculating electric drive vehicle GHG emissions*. http://www.theicct.org/calculating-electric-drive-vehicle-ghg-emissions

计算电动车的全生命周期碳排放（报告）

该项目旨在更好地了解和量化电驱动车辆的生命周期温室气体排放的影响，更好地向决策者和消费者对他们的利益和所涉及的关键因素。

10. Recommendations to Congress to modify US Renewable Fuel Standard to promote electric drive

- *Summary:* In response to US Congress' review of the Renewable Fuel Standard, the ICCT recommended several modest changes in the program to accommodate renewable electricity consumption in RFS program to provide benefits to support utilities and electric drive consumers, and accelerate electric drive.

- *Reference:* ICCT (2013). International Council on Clean Transportation comments on Energy & Commerce Committee White Paper Series on the Renewable Fuel Standard http://www.theicct.org/sites/default/files/ICCT_comments_HouseRFS2 whitepaper_v1.pdf
- *Blog:* Lutsey (2013). Let's update US fuel policy to promote electric vehicles. http://www.theicct.org/blogs/staff/lets-update-us-fuel-policy-promote-electric-vehicles

ICCT 对美国国会提交的关于修改美国可再生燃料标准以推动电动车发展的建议（政策建议）

ICCT 对可再生燃料标准草案提出几项建议，这些建议立足于让此标准为电动车的发展（从全生命周期减排的方面）带来更多收益。

11. Electrification possibilities within the California's Low Carbon Fuel Standard

- *Summary:* This study examines scenarios to comply with the Low Carbon Fuel Standard. Although the current LCFS is geared for biofuel-heavy compliance, the paper suggests that there are significant opportunities for electrification to cost-effectively contribute to LCFS compliance.
- *Reference:* Yeh, S., N. Lutsey, N. Parker (2009). Assessment of technologies to meet a low carbon fuel standard. *Environmental Science & Technology*. 43(18): 6907-6914. http://pubs.acs.org/doi/pdfplus/10.1021/es900262w

加州低炭燃料标准中车辆电动化的可能性（出版文献）

本报告分析了满足加州低炭燃料标准的几种情景。虽然目前低碳燃料标准是面向生物燃料为主的合规性，本文建议电动化可以成为一种比较具有成本收益的达标手段。

12. Electrification in California: Paper series on electrification technology and policy

- *Summary:* This paper series reviews vehicle technology developments on battery electric vehicles, metrics to best measure and promote for electric-drive vehicles, and complementary policies to support California's visionary push for a ZEV fleet.
- *References:*
  - Shulock, C., Pike, E., Lloyd, A., Rose, B. (2011). Vehicle electrification policy study: Task 1 — Technology status. http://www.theicct.org/vehicle-electrification-policy-study-task-1-—-technology-status.
  - Shulock, C., Pike, E., Lloyd, A., Rose, B. (2011). Vehicle electrification policy study: Task 2 — Metrics. http://www.theicct.org/vehicle-electrification-policy-study-task-2-—-metrics.
  - Shulock, C., Pike, E., Lloyd, A., Rose, B. (2011). Vehicle electrification policy study: Task 4 — Complementary policies. http://www.theicct.org/vehicle-electrification-policy-study-task-4-—-complementary-policies.

加州空气资源委员会系列电动汽车研究（报告）

- 系列报告1：技术现状
- 系列报告2：度量标准
- 系列报告4：辅助性激励政策

文章回顾了非强制性补充政策，以支持电动汽车全球性的发展。

13. Vehicle technology development through long-term policy

- *Summary:* This study, focused on vehicle efficiency standards, shows the importance of long-term regulations in driving innovation, technology development, and technology diffusion through the transportation sector, including by the advanced technology developers of electric motors, batteries, etc.

- *Reference:* Lutsey, N. (2012). Regulatory and technology lead-time: The case of US automobile greenhouse gas emission standards. *Transport Policy*. 21: 179-190. http://www.sciencedirect.com/science/article/pii/S0967070X12000522

长期政策推动车辆节能技术（出版文献）

这项研究，侧重于车辆的能效标准，表明长期政策在推动交通部门的供应链（如发动机、电池、零部件供应企业）在技术创新、技术推广上的重要性。

14. Promoting electric vehicles within vehicle efficiency standards

- *Summary:* The article addresses the policy challenges of adjusting established regulations to accommodate and incentivize new electric drive technologies.
- *Reference:* Lutsey, N., Sperling, D (2012) Regulatory Adaptation: Accommodating Electric Vehicles in a Petroleum World. Energy Policy 45, 308 - 316 http://www.sciencedirect.com/science/article/pii/S0301421512001553

通过车辆能效标准推动电动车发展（出版文献）

本文阐述通过调整现有的车辆能效标准来激励电动车技术的挑战。

15. Zero-emission trucks: An overview of the state-of-the-art

- *Summary:* In collaboration with the ICCT, this CE Delft and DLR assessment finds that battery-electric and fuel-cell trucks could be feasible – and approximately cost-competitive on total cost of ownership – in Europe within little more than a decade. Turning that possibility into reality is crucial to meeting long-term 2050 climate goals for transport.
- *Reference:* den Boer, E., Aarnick, S., Kleiner F., Pagenkopf, J.(2013) Zero-emission trucks: An overview of the state-of-the-art. http://www.theicct.org/zero-emission-trucks

零排放货运车：先进技术概览（报告）

CE Delft，DLR，与 ICCT 合作的报告，对一系列先进货运车技术的评估表明，纯电动和燃料电池货运车在欧洲未来 10 年具有可行性，并且总的来说在长期保有阶段具有不错的成本效益。如何将这种可能性变为现实是要满足长期 2050 交通部门气候目标的关键。

16. 实现加利福尼亚州气候目标的先进技术

描述加州降低交通温室气体排放战略的政策框架，并分析其技术路径。
http://www.theicct.org/sites/default/files/publications/ETAAC_Advanced_Technology_Final_Report_12-14-09.pdf

17. 加州空气资源委员会：加州零排放汽车项目(ZEV)的修改提案

概览ZEV项目的发展过程和近期提案。
http://www.theicct.org/carb-proposed-modifications-ca%E2%80%99s-zero-emission-vehicle-program

18. 美国低碳燃料政策

主要讨论美国联邦和加州低碳燃料标准
http://www.theicct.org/us-low-carbon-fuel-policies