ILLINOIS ELECTRIC VEHICLE ADVISORY COUNCIL

FINAL REPORT

to

Governor Pat Quinn

and the

Illinois General Assembly

December 30, 2011

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A. EXECUTIVE SUMMARY

The Case for Electric Vehicles: Advantages and Opportunities

Illinois has provided early leadership in supporting the adoption and use of electric vehicles (EVs). The Illinois Environmental Protection Agency (IEPA) offers rebates toward EV purchases; the Illinois General Assembly appropriated up to $10 million in capital funding for the Department of Commerce and Economic Opportunity (DCEO) to award EV manufacturing and infrastructure grants and loans; and the Illinois Commerce Commission (ICC) launched a Plug-in Electric Vehicle Initiative (PEV Initiative) to explore regulatory issues related to EV deployment. Through its partnership with the City of Chicago and the Chicago Area Clean Cities Coalition, Illinois is in the midst of installing one of the most comprehensive public charging station networks in the United States. In addition, collaborative efforts among local officials, business leaders, and educational institutions to create EVTown in Bloomington-Normal and to pass an EV infrastructure ordinance in Kane County serve as models for local EV initiatives throughout the nation.

These existing initiatives provide a strong foundation from which Illinois can pursue the full spectrum of opportunities that EVs offer: the consumer advantages of electricity as a relatively low-cost "fuel" and EVs' less frequent maintenance requirements, environmental benefits from reduced emissions, economic development and job creation from the growth of EV-related technologies and services, decreased reliance on imported petroleum, and opportunities to integrate and leverage renewable energy resources and smart grid deployment. If the state can capitalize on these opportunities, EVs will positively transform both the transportation and energy sectors in Illinois.

Achieving the many benefits of EVs in Illinois will require near-term actions by the General Assembly, the Governor, state agencies, local governments, and many stakeholders in the private, non-profit, and academic sectors. This report presents consensus recommendations on these actions from the Illinois Electric Vehicle Advisory Council (EVAC): a group of stakeholders from a broad range of sectors and industries that was convened by Public Act 97-0089.

Recommendations for Promoting EVs in Illinois

If implemented, the EVAC's recommendations – as outlined below and described in full later in this report – will help attain and maximize the many benefits of EVs to Illinois by encouraging the development and deployment of strategic EV infrastructure; providing new incentives for EV purchases and use; ensuring that EV charging is accomplished efficiently using the cleanest available energy resources; helping to educate the state's residents about EVs and their benefits; and developing EV jobs and industries in Illinois.

The EVAC's recommendations are prioritized based on their timeframe for initiation:

- Short-term – In the next six months after this report is released, i.e., by the end of the Spring 2012 legislative session;
- Medium-term – From six to eighteen months after this report is released, i.e., by the end of the Spring 2013 legislative session;
- Long-term – From eighteen months and forward after this report is released.

1. Encourage and facilitate EV infrastructure installation.

1.1	The General Assembly should ensure that EV charging stations are not regulated as public utilities or Alternative Retail Electric Suppliers (ARES) solely because they provide EV charging services.	Short-term
1.2	DCEO and other stakeholders should convene local government officials and staff to streamline EV-related permitting procedures and building code provisions across local jurisdictions.	Short-term
1.3	DCEO and other stakeholders should coordinate planning efforts to optimize Illinois' network of public EV charging stations.	Short- to medium-term
1.4	State agencies should establish a set of technology standards for any EV charging stations purchased or installed using state funds.	Short- to medium-term
1.5	Electricity providers[1], the Smart Grid Advisory Council, and other stakeholders should collaborate to ensure that smart grid infrastructure supports and leverages EV technologies and applications.	Short- to long-term

2. Encourage EV purchases and charging infrastructure development through incentives.

2.1	DCEO should use state capital funds to create an incentive program for owners of multi-unit residential buildings to install charging stations in shared or common area parking spaces.	Short-term
2.2	The General Assembly and the Governor should support IEPA-proposed legislation to generate additional revenues for the Alternate Fuels Fund through a $1 increase in the annual vehicle license plate renewal fee.	Short- to medium-term
2.3	DCEO and IEPA should use new and existing funding sources to support EV infrastructure installation in strategic locations.	Short- to long-term
2.4	The Governor's Office, in collaboration with state agencies, should work with Illinois' Congressional Delegation to convert the federal EV tax credit (currently up to $7,500) to a rebate or point-of-sale discount.	Medium- to long-term
2.5	State and local governments and businesses should consider creating targeted incentives for EV drivers.	Medium- to long-term

[1] The term "electricity providers" is used to describe collectively the investor-owned utilities, Alternative Retail Electric Suppliers (ARES), municipal utilities, and cooperatives.

2.6	Local governments and commercial fleets should consider adopting ordinances or policies to establish goals for employees' use of EVs.	Long-term
2.7	The Illinois state fleet should work to achieve the EV purchase target established in Governor Quinn's Executive Order 11 (2009).	Long-term

3. Promote efficient and renewable electricity use by EVs.

3.1	Electricity providers should offer time-variant electricity rate options that encourage EV charging during off-peak hours of the day.	Short- to medium-term
3.2	Utilities (to the extent allowed under Integrated Distribution Company (IDC) rules), other electricity providers, and other stakeholders should promote time-variant electricity rate options to EV owners.	Short- to long-term
3.3	ICC Staff should monitor, and other stakeholders should study, early EV charging behavior in Illinois to determine whether additional programs or initiatives are needed to achieve off-peak vehicle charging.	Short- to long-term
3.4	The General Assembly and other stakeholders should enable, support, and incentivize renewable energy installations that offset EV charging loads and provide clean energy to the grid.	Short- to long-term
3.5	Electricity providers and other stakeholders should provide renewable energy supply options for EV owners.	Short- to medium-term
3.6	The General Assembly, or alternatively the ICC, should ensure that renewable energy temporarily stored in batteries can qualify for net-metering.	Short- to medium-term
3.7	The EVAC should continue to monitor whether additional policies are needed to encourage off-peak vehicle charging and integration of EV charging with clean, renewable energy.	Medium-term

4. Educate the public on EVs, their use and benefits.

4.1	The EVAC should request data annually from appointees and stakeholders to evaluate the efficacy of, and identify needed improvements to, state EV policies, programs, and incentives.	Short-to medium-term
4.2	The Governor and state agencies should publicize the benefits of EVs, the state's EV policies, incentives, and other relevant program information.	Short- to medium-term
4.3	Auto manufacturers and dealers should inform consumers of EV features, incentives, charging procedures, electricity rate options, utility notification for charging stations, and responsible post-life battery options.	Short- to medium-term
4.4	Electricity providers should provide consumers with information on electricity rate options, comparative fuel cost savings, and notification for charging station installations.	Short- to medium-term

4.5	EV supply equipment (EVSE) providers should provide information on charging station features, specifications, costs, and incentives; installation, operation, and maintenance procedures; electricity rate options; public charging locations; and notification for installations.	Short- to medium-term
4.6	Local governments should provide information and instructions on EV-related local regulations, incentives, electricity rate options, public charging locations, and utility notification for charging stations.	Short- to medium-term
4.7	Environmental and other public interest groups should provide information on the environmental benefits of EVs, responsible post-life battery options, and utility notification for charging stations.	Short- to medium-term
4.8	First responders and public safety organizations should provide information to consumers and public safety personnel regarding safety protocols for EVs and EVSE.	Short- to medium-term
4.9	Educational institutions and providers and the Illinois Green Economy Network (IGEN) should provide information on EVs to their students and communities.	Medium- to long-term

5. Support the EV and EVSE industry and associated job creation in Illinois.

5.1	DCEO should attract EV/EVSE supply chain manufacturing to Illinois through the creation of a business development grant program utilizing state capital funds for EV manufacturing and infrastructure.	Short- to medium-term
5.2	IEPA, DCEO, and other stakeholders should provide non-financial incentives to EV/EVSE manufacturers and service companies to promote locating and expanding in Illinois.	Short- to long-term
5.3	The Governor's Office, DCEO, Argonne National Laboratory, and universities should support research, development, and demonstration of EV- and EVSE-related technologies, including smart grid integration technologies, in Illinois.	Short- to medium-term
5.4	DCEO, the Illinois Science and Technology Coalition (ISTC), the Clean Energy Trust, and universities should support entrepreneurs in the EV/EVSE sector through various existing services and programs.	Short- to long-term
5.5	DCEO, universities, colleges, and IGEN should train new and current members of Illinois' workforce with the knowledge, skills, and expertise that EV/EVSE businesses are seeking.	Medium- to long-term
5.6	IEPA should convene a state working group to explore EV battery end-of-life options, identify the optimal approach among these options, and formulate a plan for implementing the approach.	Medium- to long-term

B. STATEMENT OF OBJECTIVES

The Illinois Electric Vehicle Advisory Council (EVAC) was created through an act of the Illinois General Assembly (Public Act 097-0089, the Electric Vehicle Act) to promote the use of EVs in Illinois.[2] As stated in the Act, the adoption and use of EVs will benefit the State of Illinois by (i) improving the health and environmental quality of the residents of Illinois through reduced pollution, (ii) reducing the operating costs of vehicle transportation, and (iii) shifting the demand for imported petroleum to locally produced electricity.[3]

To maximize the many benefits of EVs to the health, environment, and economy of Illinois, the EVAC has established the following statewide objectives and developed a set of recommendations that will help achieve these objectives:

- Illinois will meet or exceed an ambitious goal of having 100,000 EVs on the state's roads by 2015. This target is higher than the Electric Power Research Institute's (EPRI's) projected range of approximately 20,000 to 80,000 EVs in Illinois by 2015, and represents 10 percent of President Obama's national goal of having one million EVs on U.S. roads by 2015. Implementation of the recommendations in this report will help drive Illinois toward achieving this aggressive statewide goal, and will help accelerate and maximize the benefits of EVs to public health, the environment, and the economy.

- Illinois will have a network of publicly accessible EV charging stations that serves local communities and destinations, extends statewide, creates corridors across the state, and connects to neighboring states with EV infrastructure. This network of publicly accessible charging stations will link cities and towns, educational campuses, retail and corporate centers, transportation facilities, and interstate highways. The network will also complement private charging stations at homes and businesses and the state's public transportation network and facilities.

- To the extent practical and feasible, Illinois will encourage EV charging during off-peak hours to utilize existing electricity generation capacity and to minimize potential reliability impacts on the electric grid. Illinois will also integrate renewable energy resources to offset incremental electricity demand from vehicle charging, and pursue battery-to-grid and vehicle-to-grid (V2G) communication and technologies to take advantage of electric storage capacity in EVs and associated EV infrastructure. When EV charging is necessary during peak times, Illinois will seek to meet this extra load with renewable energy and spread the load over time if possible.

[2] Under the Electric Vehicle Act, and as used in this report, EV means "(i) a battery-powered electric vehicle operated solely by electricity or (ii) a plug-in hybrid electric vehicle that operates on electricity and gasoline and has a battery that can be recharged from an external source." Public Act 97-0089 §10.
[3] Public Act 97-0089 §5.

- Illinois residents will be knowledgeable about EVs: their benefits, operating cost advantages, optimal use for both driving and charging, and general safety practices.

- Illinois will attract EV manufacturers, advanced vehicle battery makers, and other EV/EVSE supply chain and service companies to locate in the state. To foster the founding and growth of innovative companies, Illinois will be home to a dynamic community of institutions, organizations, and start-ups engaged in EV/EVSE technology research and development, demonstration, and commercialization.

C. BACKGROUND ON THE EVAC

The EVAC was established through the passage of Illinois House Bill 2902 in the 97th General Assembly. The bill was originally drafted by I-GO Car Sharing, and sponsored by State Representative Ann Williams in the House and State Senator Susan Garrett in the Senate. Introduced in February 2011, it passed both chambers that spring with only two opposing votes in the House. On Saturday, July 9, Governor Pat Quinn signed the bill into law – Public Act 97-0089, the Electric Vehicle Act – at the Chicago Greektown Walgreens, where a Level 2 EV charging station is located.[4]

The Electric Vehicle Act created the EVAC and the position of Electric Vehicle Coordinator for the State of Illinois (an appointee from DCEO) to chair the council. The EVAC was tasked with investigating and recommending "strategies that the Governor and the General Assembly may implement to promote the use of electric vehicles, including, but not limited to, potential infrastructure improvements, state and local regulatory streamlining, and changes to electric utility rates and tariffs." The Act also requires the EVAC to report its findings to the Governor and the Illinois General Assembly by December 31, 2011.

In addition to the Chair, the EVAC is comprised of eighteen members: four legislators appointed by the majority and minority leaders in each chamber, four representatives of state agencies (DCEO, ICC, IDOT, and IEPA), and ten appointees of the Governor (from four environmental organizations, two electric utilities, two auto manufacturers, the City of Chicago, and a non-profit car-sharing organization).

To develop this report, the EVAC met in full on four dates from mid-October through the end of December 2011, and in smaller working groups by phone to discuss specific recommendations. Full meetings were held in Chicago and Springfield with a videoconference connection and dial-in option. In-person meetings and calls were open to all interested stakeholders. Both EVAC appointees and stakeholders developed recommendations, wrote sections of the report, and provided edits to the compiled report. A complete list of EVAC participants is provided in Appendix 4.

[4] Refer to Appendix 2, Glossary of Terms, for definitions of EV charging station levels.

D. OVERVIEW OF CURRENT EV INITIATIVES IN ILLINOIS

While this report provides many new recommendations to support the adoption and use of EVs in Illinois, many other initiatives are already underway to make the state "EV ready" in its policies, infrastructure, markets, and consumer awareness. Among these current initiatives, the ICC's PEV Initiative intersects most closely with the work of the EVAC.

The ICC's PEV Initiative was formed in September 2010 to help the ICC assess the potential impacts of EVs on the state's electric system, and provide guidance in understanding and considering future regulatory issues necessary to accommodate EVs. The PEV Initiative has been conducted through a series of inquiries from the ICC and responses from utilities and other stakeholders. When the ICC launched its PEV Initiative, the initiative was the only statewide forum for EV issues, and therefore set out with a broad focus.

The PEV Initiative's first inquiry was a request to Ameren, ComEd, and MidAmerican for Initial Assessments, which were the first coordinated analyses of EV issues for the State of Illinois and provided a baseline of data that was previously unavailable to the public. These Initial Assessments prepared by the utilities covered a wide range of topics, as requested by the PEV Initiative. Of particular note were the utilities' analyses of legal and jurisdictional issues for public charging stations, forecasts of adoption rates for EVs in each utility's service territory, analyses of the impact of time-variant pricing structures for EV charging, and discussions of the potential impact of EV introduction on local distribution systems. The utilities' Initial Assessments, stakeholder comments, and transcripts of Policy Committee meetings are all available on the ICC's PEV Initiative website: www.icc.illinois.gov/Electricity/PEV.aspx.

Upon the creation of the EVAC in the fall of 2011, and based on the information that the PEV Initiative had received to date from the utilities and other stakeholders, the ICC narrowed the PEV Initiative's focus to issues within the ICC's regulatory jurisdiction. This allowed ongoing conversations about other EV issues to be handled under the EVAC. The policy discussions and information gathered through the ICC's PEV Initiative have been tremendously valuable to the EVAC's discussions and the development of this report. The EVAC and the ICC will continue to collaborate closely, as described in many of the recommendations in this report, to guide the state, consumers, and utilities in preparing for this new electric mode of transportation.

In addition to the ICC's PEV Initiative, current EV initiatives in Illinois include:

- IEPA Green Fleets Programs
- Discounted State Registration Fee for EVs
- Kane County EV Infrastructure Ordinance
- Fox Valley Electric Auto Association
- Chicago Area EV Charging Station Project
- EVs in Car-Sharing Fleets
- Bloomington-Normal EVTown
- Village of Oak Park EV Sticker Fee Waiver

For full descriptions of these EV initiatives, please refer to Appendix 1.

E. RECOMMENDATIONS

The EVAC developed recommendations in five areas, which are enumerated and discussed in this chapter: Infrastructure, Incentives, Electricity Use, Education, and Economic Development. Within each category, recommendations for the state – i.e., the Governor, the General Assembly, and state agencies – are listed first. The recommendations are further sequenced based on their timeframe for initiation:

- Short-term – In the next six months after this report is released, i.e., by the end of the Spring 2012 legislative session;
- Medium-term – From six to eighteen months after this report is released, i.e., by the end of the Spring 2013 legislative session;
- Long-term – From eighteen months and forward after this report is released.

Definitions of terms and acronyms used in this chapter and throughout the report are listed in Appendix 2. The term "electricity providers" is used to describe collectively the investor-owned utilities, Alternative Retail Electric Suppliers (ARES), municipal utilities, and cooperatives.[5]

[5] Many of the recommendations contained in this report pertain to the various aspects of providing electricity to charge EVs. Approximately 90% of households and businesses in Illinois receive electric service from investor-owned utilities subject to state jurisdiction. The remainder receives electric service from municipally-owned electric utilities or rural electric cooperatives that are not regulated by the ICC. Where recommendations in this report are directed toward the ICC, the ICC's implementation of these recommendations is applicable only to the entities within its regulatory jurisdiction.

1. Encourage and facilitate EV infrastructure installation.

Making Illinois "EV ready" will require long-term commitment from state and local governments and a variety of stakeholder organizations, including auto manufacturers, electricity providers, technology companies, and others. But the state can also take several steps now, in the short-term, to build key infrastructure, enable investments, and enhance community readiness for widespread EV use. Although current research indicates that most EV charging will take place at home, early installation of public charging infrastructure will help increase consumer acceptance of EVs and make EVs a viable option for a broad variety of drivers by extending the driving range of all-electric vehicles and the all-electric range of plug-in hybrid electric vehicles.

Providing early installation of critical EV infrastructure will require close cooperation among many key stakeholders. To build a foundation for continuing state leadership on EVs and the infrastructure needed to support and enhance a growing EV market, the EVAC makes the following recommendations.

#	***Recommendation***	***Priority***	***Responsible entities***
1.1	To catalyze business development of EV charging stations in Illinois, the General Assembly should ensure that EV charging stations are not regulated as public utilities or ARES solely because they provide EV charging services.[6]	Short-term	• General Assembly
1.2	DCEO, in collaboration with EVAC participants and convening organizations, should convene local government officials and staff to develop standardized, streamlined charging station permitting procedures (preferably online), inspection requirements, and EV-related building code provisions across local jurisdictions: • Local processes should support residential, commercial, and public EV infrastructure installation, thereby easing timelines and administrative burdens for installers. • Updated building codes should address parking signage, striping, conduit requirements,	Short-term	• DCEO • EVAC • Local governments • Convening organizations (e.g., Illinois Municipal League, Metropolitan Mayors Caucus)

[6] The Citizens Utility Board ("CUB") believes that spring 2012 is too early for the legislature to take definitive action on the legal status of charging stations in Illinois. Given the small scale of EV adoption likely to occur over the next few years, and the low demand profile of most Level 1 and Level 2 charging stations, CUB sees no reason to preliminarily classify charging stations and any related infrastructure through a legislative change in the General Assembly. As stakeholders better understand how EV infrastructure will impact the distribution utility, including anticipated demands for public charging infrastructure, CUB believes the General Assembly or the ICC can revisit this issue in the future if necessary.

	recognized certification of charging equipment, and charging cord management. • Standardized templates and model procedures should be available to municipalities and the public via state and stakeholder organizations' websites.		
1.3	DCEO, in collaboration with key state agencies and EVAC participants, should coordinate planning efforts – based on urban planning principles and other states' best practices – to optimize Illinois' network of public EV charging stations, including prioritizing the following characteristics for charging station locations: • Proximity and convenience to major destinations (e.g., retail, cultural, employment, and transportation centers) within communities, driving routes between communities, and along corridors connecting to neighboring states; • Proximity to places where drivers are engaged in other activities during time spent charging; • Safety and security of the location, both for EV drivers during charging sessions and to minimize the likelihood of EVSE damage or vandalism; • Ability to co-locate charging stations with adequate space to add more stations modularly; • Ability to provide electricity from locally generated renewable sources, but also with grid connections as needed to allow 24/7 charging; • Spacing appropriate to EV range to enable highway corridor travel; and • Selection of charging station levels appropriate to location and population needs.	Short- to medium-term	• DCEO • EVAC • IDOT • Illinois Tollway • Regional Councils • Other stakeholders
1.4	State agencies (primarily DCEO, given its management of state capital funds for EV infrastructure) should establish a set of technology standards for any EV charging stations purchased or installed using state funds. Standards should be designed to result in a full-communication EV charging station network, taking cost-benefit balancing into consideration. Equipment features should include: • Non-proprietary, standards-based communications protocols; • Networking to enable real-time location and status communication capabilities;	Short- to medium-term	• DCEO • Other state agencies funding EVSE • EVAC • EVSE industry participants • Other stakeholders

	• An open transaction platform; and • Uniform signage clearly displaying equipment specifications, including power level, and instructions for use and payment.		
1.5	Electricity providers, the Smart Grid Advisory Council, and other stakeholders should collaborate to ensure that smart grid infrastructure, including infrastructure planned and funded under the Energy Infrastructure Modernization Act (Public Act 97-0616) – e.g., Smart Grid Advanced Metering Infrastructure (AMI) Deployment Plans and Smart Grid Test Beds – supports EV-smart grid applications, including vehicle-to-grid, battery-to-grid, load management, ancillary grid services (e.g., frequency modulation), and other technologies that leverage EVs' energy storage and communication capabilities and enable efficient and renewable energy use by EVs.	Short- to long-term	• Electricity providers • Smart Grid Advisory Council • Other stakeholders

2. Encourage EV purchases and charging infrastructure development through incentives.

For the past 15 years, the State of Illinois has supported the implementation of alternate fuels and alternate fuel vehicles through incentives to promote clean air, green jobs, and "Illinois fuels." The primary incentive for local governments, small businesses, and the general public has been the IEPA-administered Alternate Fuels Rebate Program, created under the Alternate Fuels Act. This program has successfully promoted the adoption of natural gas, propane, and, increasingly, electric vehicles, as well as the use of millions of gallons of E85 in flex-fuel vehicles and biodiesel in trucks and buses. In 2009, the General Assembly passed legislation dedicating $10 million in capital funding for transportation electrification projects, including (but not limited to) grants and loans to encourage EV manufacturing and infrastructure. In 2011, legislators approved the addition of EV grants for car-sharing organizations to the Alternate Fuels Act's incentives.

Illinois' alternate fuels incentives have been replicated by many other states and serve as a national model for achieving progressive, effective results. To build on this success, the EVAC provides the following recommendations to utilize both existing and new funding sources to grow the share of EVs on the state's roadways and support development of EV infrastructure.

#	*Recommendation*	*Priority*	*Responsible entities*
2.1	DCEO should use state capital funds appropriated for EV manufacturing and infrastructure[7] to create an incentive program for owners of multi-unit residential buildings to install charging stations in shared or common area parking spaces.	Short-term	• DCEO
2.2	The General Assembly and the Governor should support IEPA-proposed legislation to generate revenues for the Alternate Fuels Fund through a $1 increase in the annual vehicle license plate renewal fee (anticipated to generate $9 million annually). This increased funding will allow IEPA to fully support existing EV-purchase incentives offered through the Alternate Fuels Rebate Program. These incentives are available to businesses, local governments, car-sharing organizations, and consumers. Increasing program funding will ensure that more program applicants who purchase EVs from Illinois car dealerships can receive a rebate of up to $4,000 and that car-sharing organizations that purchase EVs can receive	Short- to medium-term	• General Assembly • Governor • IEPA

[7] See Public Act 97-0076 §180, http://ilga.gov/legislation/publicacts/97/PDF/097-0076.pdf.

	grant funding through the recently passed EV Car-Sharing Grant Program (Public Act 97-0090).		
2.3	State agencies should support new EV infrastructure – including charging stations and renewable energy generation to offset charging loads – in strategic locations: • DCEO should use state capital funds appropriated for EV manufacturing and infrastructure to provide grants to public- and/or private-sector partners to install public EV charging equipment within local communities and at strategic locations that maximize usage by commuters and other EV travelers. • IEPA should direct some of the enhanced funding for the Alternate Fuels Fund from Recommendation 2.2 to provide community-based grants to local governments (and their educational and private sector partners) to install public EV charging equipment within local communities and at strategic locations that maximize usage by commuters and other EV travelers. • DCEO, IEPA, and the Illinois Clean Energy Community Foundation (ICECF) should collaborate to give charging station grant awardees prioritization in receiving grant funds to install renewable energy generation to offset EV charging loads.	Short- to long-term	• DCEO • IEPA • ICECF
2.4	The Governor's Office, in collaboration with state agencies, should work with Illinois' Congressional Delegation to convert the federal EV tax credit (currently up to $7,500) to a rebate or point-of-sale discount so that individuals and entities without tax liability can benefit and so that the federal application requirements are easier and more straightforward for consumers.	Medium- to long-term	• Governor's Office • State agencies • Illinois' Congressional Delegation
2.5	State and local governments and businesses should consider creating the following incentives for EV drivers: • Designate reserved and/or preferential parking spaces for EVs in parking garages and lots. • Offer discounted fees (or waivers) for municipal parking stickers for EVs. • Offer reduced tolls for EVs on Illinois toll highways. • If Illinois creates high-occupancy vehicle (HOV) lanes, provide preferential HOV lane access for EVs.	Medium- to long-term	• State agencies • Local governments • Illinois businesses • Illinois Tollway

2.6	Local governments and commercial fleets should consider adopting ordinances or policies (or leveraging existing ordinances or policies) to establish goals for employees' use of EVs through fleet purchases or leases, rentals, and/or car-sharing.	Long-term	• Local governments • Commercial fleets
2.7	The Illinois state fleet, managed by the Illinois Department of Central Management Services (CMS) Division of Vehicles, with support from the Governor's Office and the General Assembly, should work to achieve the EV purchase target established in Governor Quinn's Executive Order 11 (2009): By July 1, 2015, at least 5 percent of new passenger vehicles purchased for the state fleet shall be electric, as feasible and available.[8]	Long-term	• CMS • Governor's Office • General Assembly

[8] Executive Order 11 (2009), available at http://www2.illinois.gov/gov/pages/2009_11.aspx.

3. Promote efficient and renewable electricity use by EVs.

Realizing the full environmental, health, and economic potential of EVs will require policies and programs that enable EVs to charge efficiently using the cleanest energy resources. Well-designed electricity rates based on time-variant pricing, load management programs, and other initiatives will promote EV charging and use of other electrical loads during off-peak hours of the day (typically during the night) when electricity demands and energy prices are lower. This saves consumers money and achieves more efficient use of electricity generation resources and the electric grid. Because EVs run on electricity rather than petroleum-based fuels, support for renewable energy installations and associated policies will further enable EVs to charge with clean energy, and will maximize the ability of EVs to reduce carbon emissions and other transportation-related pollution. Batteries in EVs and charging equipment will also help Illinois integrate intermittent renewable energy, including from wind and solar, onto the grid – first for vehicle propulsion and later through vehicle-to-grid and battery-to-grid applications as well.

To ensure that EVs charge efficiently using the cleanest energy resources available, the EVAC recommends the following actions.

#	***Recommendation***	***Priority***	***Responsible Entities***
3.1	Electricity providers should offer time-variant electricity rate options that encourage EV charging and use of other electrical loads during off-peak instead of on-peak hours of the day. • Investor-owned utilities should continue to offer existing real-time pricing (Ameren, ComEd) and time-of-use (MidAmerican) electricity rate options to residential and non-residential customers. • Other electricity providers (i.e., ARES, municipal utilities, and cooperatives) should also develop and offer time-variant electricity rates that provide off-peak charging incentives to customers.	Short- to medium-term	• Electricity providers • ICC
3.2	Utilities (to the extent allowed under Integrated Distribution Company (IDC) rules, which limit the marketing of specific rates and services by a utility), other electricity providers, auto manufacturers and dealers, and other stakeholders should promote the availability and benefits of time-variant electricity rate options to EV owners, and help customers understand and take advantage of these rates.	Short- to long-term	• Electricity providers • Auto manufacturers and dealers • Other stakeholders

3.3	ICC Staff should monitor – and electricity providers, EVSE providers, auto manufacturers, the EVAC, and other stakeholders should study – early EV charging behavior in Illinois to determine whether additional time-variant electricity rate options, metering options (e.g., separate- and sub-metering of EV electricity service as currently being explored in other states), load management programs (e.g., demand response), and/or other initiatives are needed to achieve off-peak vehicle charging (and use of other electrical loads during off-peak hours) or otherwise help manage and monitor charging loads to minimize grid impacts.	Short- to long-term	• ICC • Electricity providers • EVSE providers • Auto manufacturers • EVAC • Other stakeholders
3.4	The General Assembly, electricity providers, EVSE providers, and other stakeholders should enable, support, and incentivize renewable energy installations that offset EV charging loads and provide clean energy to the grid, at locations including: • Utility-scale renewable energy facilities, • Private residences, • Commercial and office buildings, and • Public EV charging stations.	Short- to long-term	• General Assembly • Electricity providers • EVSE providers • Other stakeholders
3.5	Electricity providers, auto manufacturers and dealers, and other stakeholders should provide renewable energy supply options (e.g., options to procure 100% renewable energy or renewable energy certificates) for EV owners who wish to charge their vehicles with renewable energy but are unable or do not choose to install distributed renewable generation.	Short- to medium-term	• Electricity providers • Auto manufacturers and dealers • Other stakeholders
3.6	The General Assembly, or alternatively the ICC, should ensure that renewable energy temporarily stored in batteries (e.g., EV batteries or stationary batteries in EVSE) can qualify for net-metering: • Under 220 ILCS 5/16-107.5, the General Assembly should ensure that renewable energy stored in batteries can qualify for net-metering if the stored energy was originally generated by an "eligible renewable generating facility" (as defined in the statute) and is later discharged onto the grid. • Alternatively, if this issue is raised in an appropriate proceeding, the ICC should ensure that electricity providers' net-metering programs	Short-to medium-term	• General Assembly • ICC

	allow for net-metering of energy stored in batteries if originally generated by an "eligible renewable generating facility."		
3.7	As the EV market develops, the EVAC and participating stakeholders should continue to monitor whether additional policies are needed to encourage off-peak vehicle charging, enable EV load management, and support the integration of EV charging with clean, renewable energy, in both homes and businesses.	Medium-term	• EVAC

4. Educate the public on EVs, their use and benefits.

Achieving the full range of EV benefits in Illinois will require efforts by a variety of entities to educate consumers about EV technologies and their benefits. When considering the purchase or use of an EV, consumers will evaluate many of the same criteria that they consider today when purchasing a conventional vehicle. But consumers will also need to evaluate new vehicle features and other criteria with which they will generally have less familiarity and experience. These new criteria include battery driving range, plug-in hybrid electric versus all-electric vehicles, plug-in connection standards, charging stations, and time-variant electricity rates.

When considering whether to purchase or use EVs, consumers will consult a wide array of sources for information. Rather than requiring certain industry participants to provide defined types of information, the EVAC recommends that the many stakeholders with interests in educating consumers act as "messengers" to convey information that is important to their mission and/or business.

#	***Recommendation***	***Priority***	***Responsible entities***
4.1	The EVAC should request data annually (or more frequently as needed) from appointees and stakeholders – including the ICC, electricity providers, auto manufacturers and dealers, and EVSE providers – to evaluate the efficacy of, and identify needed improvements to, state policies, programs, and incentives to promote EVs and their efficient use. The EVAC should make collected data available to entities listed in the recommendations below to enable dissemination through their websites and other education channels.	Short- to medium-term	• EVAC
4.2	The Governor and state agencies should publicize the benefits of EVs, as well as the state's EV policies, incentives, and other relevant program information: • The Governor should continue to highlight the state's EV initiatives and the benefits of EV technologies in public remarks and private meetings with fellow leaders, to raise awareness of Illinois' EV readiness. • IEPA and DCEO should provide up-to-date information and instructions on state incentives and programs, and direct consumers to other reliable sources for federal and local incentives. • IDOT and the Illinois Tollway should provide information on public charging station locations in Illinois, highway signage for EV charging stations, and	Short- to medium-term	• Governor • State agencies

	highway safety practices (including roadside assistance) for EVs. • The ICC should provide information on ICC regulations related to EVs and EVSE, and information on the ICC's Plug-In Electric Vehicle Initiative. • The Illinois Secretary of State should publicize the state's vehicle registration fee discount available to owners of all-electric vehicles, i.e., $35 for two years versus $99 for one year for a conventional vehicle.[9]		
4.3	Auto manufacturers and dealers should provide consumers with information on EV features (including realistic range expectations), incentives, charging options/procedures, electricity rate options (including benefits from off-peak charging under time-variant rates), the process for notifying utilities about installation of Level 2 (or higher) charging stations, and responsible options for batteries at the end of useful life.	Short- to medium-term	• Auto manufacturers and dealers
4.4	Electricity providers should provide consumers with information on electricity rate options (including benefits from off-peak charging under time-variant rates), fuel cost savings between EVs and gasoline-powered vehicles, and charging station installation, including the process for notifying utilities about installation of Level 2 (or higher) charging stations.	Short- to medium-term	• Electricity providers
4.5	EVSE providers should provide information on charging station features, specifications, and prices; how to install and operate charging stations properly and safely; installation, operation, and maintenance costs; permitting and inspection requirements; local, state, and federal financial incentives for charging stations; public charging locations; the process for notifying utilities about installation of Level 2 (or higher) charging stations; electricity rate options (including benefits from off-peak charging under time-variant rates); and opportunities to integrate renewable energy.	Short- to medium-term	• EVSE providers

[9] Note that plug-in hybrid electric vehicles are not eligible for this registration fee discount.

4.6	Local governments should provide information and instructions on permitting, building codes, electricity rate options (including benefits from off-peak charging under time-variant rates), public charging locations, local incentives, and the process for notifying utilities about installation of Level 2 (or higher) charging stations.	Short- to medium-term	• Local governments
4.7	Environmental and other public interest groups should provide information on emissions benefits, off-peak charging benefits, renewable energy charging options, responsible options for batteries at the end of useful life, and the process for notifying utilities about installation of Level 2 (or higher) charging stations.	Short- to medium-term	• Environmental groups • Other public interest groups
4.8	First responders and public safety organizations should provide information to consumers and public safety personnel regarding safety protocols for EVs and EVSE.	Short- to medium-term	• First responders • Public safety organizations
4.9	Educational institutions and providers and the Illinois Green Economy Network (IGEN) should provide general information about EVs, including environmental and economic analyses, to students, faculty and staff, members of surrounding communities, and the general public. Providers of Drivers' Education courses should also integrate EV education into course curricula.	Medium- to long-term	• Educational institutions and providers • IGEN

5. Support the EV and EVSE industry and associated job creation in Illinois.

While the adoption of EVs and the growth of service industries to support EVs will bring economic benefits to the state, Illinois will be able to capture much broader EV market benefits, including large-scale job creation, if the state is able to nurture and attract EV and EVSE supply chain businesses. Illinois already offers the competitive advantages of a skilled and educated workforce, top-tier research institutions, excellent transportation and distribution infrastructure, and desirable industrial locations. Using these features to its advantage, the state has the potential to become a national hub for research, development, demonstration, commercialization, and manufacturing of EV and EVSE technologies.

The EVAC recommends developing the incentives and programs described below to support Illinois scientists, entrepreneurs, and business leaders in their efforts to establish and grow EV-related companies in the state.

#	***Recommendation***	***Priority***	***Responsible entities***
5.1	DCEO should attract EV and EVSE supply chain manufacturing to Illinois through the creation of a business development grant program utilizing state capital funds appropriated to DCEO for EV manufacturing and infrastructure.[10] • Eligibility should be limited to businesses retooling or expanding in Illinois, businesses relocating to Illinois, and businesses starting up in Illinois. • Funds should be spent on capital improvements (per funding source restrictions) and leverage state resources with a private-sector match. • Where applicable, awards under this new grant program should be combined with existing business development incentives to increase Illinois' attractiveness for EV/EVSE supply chain manufacturers.	Short- to medium-term	• DCEO • EV and EVSE industry
5.2	IEPA, DCEO, ISTC, and IMEC should provide non-financial incentives to EV/EVSE manufacturers and service companies to promote locating and expanding in Illinois. These incentives should include: • Providing transparent and timely environmental reviews and permitting for businesses involved in	Short- to long-term	• IEPA • DCEO • ISTC • IMEC

[10] See Public Act 97-0076 §180, http://ilga.gov/legislation/publicacts/97/PDF/097-0076.pdf.

	the manufacturing, transportation, use, reuse, and recycling of EV/EVSE products and components; • Leveraging of existing international partnerships, such as Illinois' Smart Grid Partnership with South Korea, to educate foreign companies on the benefits of locating and operating in Illinois; and • Providing business advisory services and technical assistance to small businesses in the EV/EVSE sector.		
5.3	The Governor's Office, DCEO, Argonne National Laboratory, and universities should support research, development, and demonstration (RD&D) of EV- and EVSE-related technologies, including smart grid integration (such as vehicle-to-grid) technologies, in Illinois labs and educational institutions. This support should include: • Positioning Illinois, led by Argonne National Laboratory as the consortium applicant, to compete successfully for federal funding under the "Batteries and Energy Storage Hub" grant program to be announced by U.S. DOE; and • Facilitating collaboration across research institutions and recognizing successful RD&D initiatives.	Short- to medium-term	• Governor's Office • DCEO • Argonne National Laboratory • Universities
5.4	DCEO, ISTC, the Clean Energy Trust, and universities should support entrepreneurs in the EV/EVSE sector through services provided by the Illinois Small Business Development Centers (SBDCs), credit support through DCEO's Advantage Illinois program, advising and networking through the Clean Energy Trust, and collaboration across university technology transfer offices. SBDCs should serve as primary points of contact for connecting entrepreneurs to sources of capital, business advisory services, and technical assistance.	Short- to long-term	• DCEO • ISTC • Clean Energy Trust • Universities

5.5	DCEO, universities, colleges, and IGEN should train new and current members of Illinois' workforce with the knowledge, skills, and expertise that EV/EVSE businesses are seeking. Initiatives to provide this training should include: • Establishing partnerships between businesses and community colleges, and designing curricula and degree programs to provide education tailored to employers' needs; and • Utilizing IGEN to replicate successful training and education models throughout the Community College network.	Medium- to long-term	• DCEO • Universities • Colleges • IGEN
5.6	IEPA should convene a state working group – made up of EVAC members, DCEO, auto manufacturers and dealers, and other interested stakeholders – to explore EV battery end-of-life options, identify the optimal approach among these options, and formulate a plan for implementing the approach. In formulating this plan, the parties should consider current EV manufacturers' practices; other states' and countries' best practices; options for battery reuse, recycling, and disposal; and passage of an extended producer responsibility law in Illinois or at the federal level (by working with Illinois' Congressional Delegation).	Medium- to long-term	• IEPA • EVAC • DCEO • Auto manufacturers and dealers • General Assembly • Illinois' Congressional Delegation • Other stakeholders

F. Conclusion

The recommendations in this report provide a roadmap for supporting the broad deployment of EVs in Illinois. If implemented, these recommendations will establish a foundation of infrastructure, consumer incentives, and policy tools that will support EV adoption and use, and maximize the long-term benefits of EVs to Illinois residents' health, the environment, and the state's economy.

To achieve the many benefits of EVs in Illinois, the General Assembly, Governor, and other stakeholders must act now, as recommended in this report, to prepare for EVs and overcome initial barriers to EV adoption. To create and grow a vibrant EV market in Illinois, all entities identified in this report must provide the education and support that Illinois consumers need as they transition to EVs and, more broadly, to a smart grid that will enable further integration of EVs, energy efficiency technologies, and renewable energy resources.

Due to the rapid evolution of the EV market, the EVAC believes that the EV dialogue now underway must be an ongoing one. Likewise, the roadmap provided in this report must be a living document, with continuing evaluation and periodic updates to ensure that Illinois is able to quickly identify and take advantage of new opportunities and technologies as they develop. Maintaining an effective roadmap will require persistent engagement by the EVAC participants and other stakeholders from state and local government, non-profit organizations, and the private sector.

By building on its existing efforts and creating a foundation for greater innovation, Illinois has a unique opportunity to help lead the nation in the rollout and widespread adoption of EVs. The key components and partnerships for this leadership are already in place. Now, the EVAC urges the state to implement the recommendations in this report and to take an extra step: seek new leadership opportunities that will accelerate electrification of the transportation sector and further expand the benefits of EVs for all individuals, institutions, and businesses in Illinois.

Appendix 1: Current EV Initiatives in Illinois

Program: ***Illinois Commerce Commission's Plug-In Electric Vehicle Initiative***
Agency: ***Illinois Commerce Commission***
Authority: ***Voluntary Initiative***

The Illinois Commerce Commission (ICC) launched the Initiative on Plug-In Electric Vehicles (PEV Initiative) in September 2010 to assess the potential impacts of EVs on the electric grid and to evaluate the need for new regulatory policies to accommodate this new era of transportation.

Goals of the PEV Initiative include:

- Determining the impact of the initial deployment of EVs on the state's electric grid;
- Determining potential/future regulatory considerations necessary to accommodate EVs;
- Establishing consistent statewide policies for managing EV infrastructure and use;
- Generating accelerated interest by auto manufacturers for introduction of EVs into Illinois markets; and
- Crafting consumer education and outreach information components.

Ameren Illinois Company (Ameren), Commonwealth Edison Company (ComEd), and MidAmerican Energy Company (MidAmerican) provided initial assessments to the ICC regarding the impact on the electric grid of the introduction of EVs. The ICC invited and received comments on those initial assessments from a wide range of stakeholders. The electric utilities and stakeholders then provided a subsequent set of comments responding to questions asked by the ICC. Additionally, the ICC held two Electric Policy Committee meetings to discuss the issues raised in those comments. Information regarding the EV Initiative, including the initial assessments from Ameren, ComEd, and MidAmerican on the potential grid impact of EV introduction and all subsequent comments, are posted at http://www.icc.illinois.gov/electricity/pev.aspx.

In October of 2011, the PEV Initiative requested that interested parties participate in informal workshops to aid the ICC on five specific issues: (1) defining the scope of what waivers (if any) to the Integrated Distribution Company rules[11] would allow for appropriate participation by utilities in facilitating the adoption of EVs and related services while not hampering the ongoing development of a competitive market for EV-related programs and services; (2) developing customer education and outreach plans; (3) modeling and assessment of potential localized reliability impacts; (4) expanding EV rate options in order to improve current distribution, transmission and generation asset utilization, and to prevent unnecessary and duplicative investment in infrastructure for on-peak charging; and (5) developing a petition to the ICC to clarify the legal status of public charging stations. Reports summarizing the outcome of these workshop topic discussions are expected to be submitted to the ICC by December 31, 2011.

[11] Title 83, Sections 452.230 and 452.240 of the Illinois Administrative Code.

Program: ***Illinois Green Fleets Program***
Agency: ***Illinois EPA and Chicago Area Clean Cities Coalition***
Authority: ***Voluntary Initiative***

This marketing and recognition program serves as the umbrella initiative encompassing the Illinois EPA's Alternate Fuels Rebate Program, EV Car-Sharing Grant Program, Illinois Clean Diesel Grant Program, No-Idling initiative, and general information on alternate fuels and vehicles, contacts for auto manufacturers and conversion companies in Illinois, and locations of E85 stations. In addition, the Illinois Green Fleets Program also serves to recognize, educate, and help facilitate the creation of "green fleets" for small businesses, local government units, corporations, and schools and universities throughout the state.

Launched in 2000, Illinois was the first state to implement a green fleets program. Fleets in Illinois that implement alternate fuel vehicles, switch to one or more "American fuels," and help meet the mission of "Green Environment, Green Energy, and Green Economics for a Green Illinois" can be designated as an Illinois Green Fleet. Over 100 green fleets throughout the state have been designated and are listed on the Illinois Green Fleets website, with information on the numbers and types of alternate fuels and vehicles each fleet has implemented. Designation events usually take place at luncheons or similar meetings where one or more state officials are on hand to recognize the new green fleets, helping to create media exposure and facilitating other fleet managers to network and possibly becoming green fleets themselves.

The Chicago Area Clean Cities coalition (CACC) and DCEO have coordinated with the Illinois EPA during the past several years in hosting fleet seminars, workshops, and conferences on various topics aimed at highlighting current green fleet members and providing interested fleet managers information, contacts, and similar valuable resources for assistance. This coordination has been effective to create and support green fleets throughout the state. The Illinois EPA, CACC, and DCEO can build upon this networking to assist with public outreach and hosting seminars, conferences, and similar events to provide information on state programs and resources, grant opportunities, private fleet operations and local governments that have implemented EVs and EV charging infrastructure, and other relevant topics to promote EV and infrastructure deployment.

Information on all of the IEPA's Illinois Green Fleets programs and initiatives, including grant and rebate application materials for the alternate fuel and clean diesel programs, is posted at www.illinoisgreenfleets.org.

Program: ***Illinois Alternate Fuels Rebate Program***
Agency: ***Illinois EPA***
Authority: ***Alternate Fuels Act (415 ILCS 120)***

The Alternate Fuels Rebate Program is an important component of the IEPA's Illinois Green Fleets initiative. This program currently has an annual appropriation of $1 million and provides rebates up to $4,000 for any Illinois resident, small business, corporation, local government unit, school, or other organization that acquires alternate fuel vehicles that operate with clean, alternate fuels. Eligible fuels include natural gas, electricity, ethanol (E85), biodiesel (at least 20 percent biodiesel blend), propane, and hydrogen. To date, the IEPA has issued over $5.3 million in rebates for nearly 4,000 applicants acquiring 8,000 alternate fuel vehicles. The program offers three types of rebates:

(1) A "Vehicle Rebate" for the purchase of a new alternate fuel vehicle from an Illinois car dealership. This type of rebate is common for vehicles that operate with natural gas, electricity, and propane. Heavy-duty trucks and buses that have an alternate fuel option but are not available for sale in Illinois are also eligible for the program. The vehicle rebate amount is for 80 percent of the incremental cost of the alternate fuel-version of the vehicle, as compared to its conventional fuel make and model counterpart, up to $4,000. If the alternate fuel vehicle does not have a conventional make and model counterpart, the rebate amount is 10 percent of the base MSRP, up to $4,000.

(2) A "Conversion Rebate" for the conversion of an existing conventional vehicle to operate with an alternate fuel. This type of rebate is common for conventional vehicles to be converted to natural gas, propane, and E85. The conversion system must be EPA- or California Air Resources Board (CARB)-certified, per federal law, and the conversion of the vehicle must occur in Illinois. The conversion rebate amount is 80 percent of the cost of the conversion, up to $4,000.

(3) A "Fuel Rebate" is for the purchase of E85 to be used in a flexible-fuel vehicle or biodiesel blends of at least 20 percent to be used in a diesel truck or bus. The E85 or biodiesel must be used in the vehicle at least 50 percent of the time during the calendar year, as demonstrated by submitted fuel receipts or fuel purchase invoices and the miles driven during the year. The amount of the E85 fuel rebate is established at either $340 or $450 per vehicle, depending on miles driven, while the biodiesel fuel rebate is based on 80 percent of the average incremental cost of the biodiesel, versus regular diesel. The fuel rebate application is submitted at the end of the calendar year, and each vehicle is eligible to receive this rebate for three consecutive years.

Program: ***EV Car-Sharing Grant Program***
Agency: ***Illinois EPA***
Authority: ***Alternate Fuels Act (415 ILCS 120)***

In the Spring 2011 legislative session, the General Assembly passed HB 2903 and its companion SB 1615 to add a new incentive in the Alternate Fuels Act to enable car-sharing organizations to receive funding from the Alternate Fuels Fund in each of fiscal years 2012 and 2013 for the purchase of EVs. The amount of the funding to be made available is based on a projection of the remaining funding in the Alternate Fuels Fund, if any, toward the end of each of those fiscal years after all needed rebate monies are taken into account in the Alternate Fuels Rebate Program. There are two known car-sharing organizations that will be eligible for this program, I-GO and Zipcar. The funding that could be made available to these organizations is for no more than 25 percent of their project costs involving the purchase of new EVs and the implementation of new EV charging infrastructure. The grant funding for these organizations can only be used to purchase new EVs from Illinois car dealerships.

The Illinois EPA has met with I-GO and Zipcar for their comments and recommendations on the various components of this grant program as the Illinois EPA proceeds with the rulemaking. The rules are expected to be finalized by Spring 2012, in time for the EV Car-Sharing Grant Program to be in place for potential grants to be awarded in FY 2012.

Program: ***Discounted Registration Fee for EVs in Illinois***
Agency ***Illinois Secretary of State's Office***
Authority: ***Illinois Vehicle Code (625 ILCS 5/3-805)***

Per Illinois statute, the Office of the Illinois Secretary of State administers a discounted vehicle registration fee for EVs. The two-year registration fee for EVs is $35 compared to a one-year fee of $99 for conventional vehicles (i.e., a discount of $81.50 per year for an EV compared to a conventional vehicle). To be eligible for the discounted fee, vehicles must be propelled by an electric engine, not utilize motor fuel, and weigh 8,000 pounds or less. The enabling statute for this program is 625 ILCS 5/3 805:

Sec. 3 805. Electric vehicles. The owner of a motor vehicle of the first division or a motor vehicle of the second division weighing 8,000 pounds or less propelled by an electric engine and not utilizing motor fuel, may register such vehicle for a fee not to exceed $35 for a 2 year registration period. The Secretary may, in his discretion, prescribe that electric vehicle registration plates be issued for an indefinite term, such term to correspond to the term of registration plates issued generally, as provided in Section 3 414.1. In no event may the registration fee for electric vehicles exceed $18 per registration year.

Program: ***Kane County Electric Vehicle Infrastructure Ordinance***
Agency: ***Kane County, Illinois***
Authority: ***County Ordinance passed by Kane County Board***

In anticipation and support of EVs, the Kane County Board appointed a Task Force comprised of industry experts, municipal and county representatives, and special interest groups to create both a Kane County Electric Vehicle Infrastructure (EVI) ordinance covering unincorporated areas of Kane County, and a model EVI ordinance for other units of local government. The ordinance principally addresses regulations, design guidelines, standards, and signage for EV Infrastructure on public and private property. The Task Force utilized model ordinances from the Puget Sound Region in the state of Washington and from Auburn Hills, Michigan to assist in its efforts.

The Task Force completed a draft of the ordinance in November 2011, and the Kane County Board is anticipated to consider the ordinance for adoption in February 2012. The County is working on a website to provide additional information and supporting documents for the Kane County ordinance and model ordinance, which are expected to be online in January 2012.

The Kane County ordinance is organized into four main sections:
Section 1 – Definitions
Section 2 – Vehicles and Traffic
Section 3 – Zoning
Section 4 – Battery Provisions

Program: ***Fox Valley Electric Auto Association Events and Outreach***
Agency: ***Fox Valley Electric Auto Association***
Authority: ***Voluntary Member Organization***

The Fox Valley Electric Auto Association (FVEAA) promotes efficient and clean EV use and educates the public on these issues. It also helps its members to become EV drivers. The FVEAA was formed in 1975, around the time of the first oil embargo, and was incorporated in the State of Illinois in 1979. It became a chapter of the Electric Auto Association (EAA) in 2004.

The FVEAA holds monthly meetings, hosts and publicizes EV events, publishes a monthly EV newsletter, and features members' EVs and blogs. Information about FVEAA's events, membership, and EV resources is available at the association's website: http://fveaa.org/.

Program: ***Chicago Area EV Charging Station Project***
Agency: ***City of Chicago Department of Environment***
Authority: ***Voluntary Initiative; State and Federal Grants***

The City of Chicago and State of Illinois have partnered to deploy a comprehensive network of charging station infrastructure, creating the densest network of DC Fast Charge stations in the world. Utilizing approximately $1 million of state capital funding (granted by DCEO) and $1 million of federal Clean Cities funding from the American Recovery and Reinvestment Act (ARRA), the partners were able to leverage almost $7 million in private investment to develop the Chicago Area EV Charging Station Project. The project will deploy 73 DC Fast Charge and 207 Level 2 EV charging stations throughout the Chicago area. The funding recipient, 350Green, has partnered with I-GO, Zipcar, Walgreens, Sears, Simon Properties, Whole Foods, Jewel and others to host the charging stations. Charging stations will also be installed at O'Hare and Midway Airports and at the Illinois Tollway oases. Station locations and availability can be found at www.mychargepoint.net.

Program: ***EVs in Car-Sharing Fleets***
Agency: ***I-GO Car Sharing and Zipcar, Inc.***
Authority: ***Voluntary Initiatives; State and Federal Grants***

I-GO Car Sharing, Chicago's nonprofit car sharing organization, has launched a $2.5 million EV project that will add 36 all-electric vehicles to its fleet and up to 18 solar charging stations providing clean power to its cars. Once completed, I-GO will have the largest EV fleet in the Midwest, and will use more solar power to charge EVs than anywhere else in the country. Previously, I-GO announced the locations of 12 solar-powered charging stations throughout the Chicago region, including one at the CTA Park & Ride lot at the Kimball Brown Line "L" stop, several Jewel-Osco stores, the Illinois Institute of Technology, the Village of Oak Park, the City of Evanston, and Uncommon Ground restaurant. The remaining locations will be announced soon. The canopies will be installed in early 2012. Each solar charging station will form a canopy that covers four parking spaces and will be able to power two EVs. Two spaces will be reserved for I-GO at each location, and the others will be available to the public. Each canopy will be topped with 44 solar panels, for a capacity of 10 kilowatts. In aggregate, the canopies will produce about 200,000 kilowatt-hours (kWh) of electricity annually, which will power as much as 600,000 miles driven per year. As a result, I-GO and its members could save as many as 17,000 gallons of gasoline each year.

Zipcar, the world's largest car-sharing company, is rolling out an EV car-sharing program in the Chicagoland area. The program consists of up to 25 EVs, charged by dedicated Level 2 charging stations installed by 350Green. These EVs will complement the existing fleet of nearly 500 vehicles throughout the Chicagoland area to provide Zipcar members with additional environmentally sound transportation options. Zipcar has not yet announced its final locations or strategic partners, but they include leading building and parking management companies, retailers, building owners, health systems, local transit and universities.

Program: ***Bloomington-Normal EVTown***
Agency: ***Bloomington-Normal Electric Vehicle Task Force***
Authority: ***Voluntary Initiative; Federal Grant***

EVTown (www.evtown.org) represents a broad-based effort to establish Bloomington-Normal, Illinois as a model EV community. The effort is being driven by a coalition of business officials, government representatives, and other interested stakeholders who firmly believe EVs offer tremendous benefits to individual vehicle owners, businesses, and the greater community.

EVTown aims to provide members of the Bloomington-Normal community with the concise information needed to evaluate available EV technologies. In addition, EVTown is intended to connect interested persons with opportunities to personally view, test drive, and purchase EVs.

The EVTown effort originated after Town of Normal Mayor Chris Koos brought together several representatives of business, government and education to discuss how the community could prepare for EVs. As discussions evolved, it became apparent that there was a tremendous opportunity for Bloomington-Normal to become a national leader in EV deployment. A decision was then made to establish the Bloomington-Normal EV Task Force and initiate the EVTown effort. EVTown is an effort of the Bloomington-Normal EV Task Force. The Task Force consists of leaders from various local governments, businesses and educational institutions.

The EVTown initiative is designed to prepare the Bloomington-Normal community for the rapidly growing EV industry. This forward-thinking strategy will make the community more attractive to emerging businesses and their employees, thus strengthening its economic base. It will complement the many other environmental initiatives already underway, and will enhance economic opportunities and the quality of life for residents.

In late November 2011, as part of the EVTown initiative, the Town of Normal announced an EV Charging Station Grant Program open to area businesses and organizations interested in installing charging stations on their properties. This grant program is supported by funds provided by the U.S. Department of Energy under its Energy Efficiency and Conservation Block Grant Program. See http://www.normal.org/Files/EVChargingStation.pdf for more information.

Program: ***Village of Oak Park EV Sticker Fee Waiver***
Agency: ***Oak Park Village Board of Trustees***
Authority: ***Municipal Ordinance***

As the benefits of EVs are recognized on a local level, suburban municipalities – including the Village of Oak Park – are taking steps to support and encourage EV use. In November 2010, the Oak Park Village Board of Trustees passed an EV ordinance to provide free parking and city vehicle stickers for EV drivers in 2011 and 2012. Although the program's use has been minimal so far due to limited EV availability on a regional scale, Oak Park's Sustainability Manager reported increased inquiries about fast-track permitting from residents adding chargers to their garages in preparation for EV purchases.

Appendix 2: Glossary of Terms

Term	***Definition***
ARES	Alternative Retail Electric Suppliers – An ARES is a business that sells electricity to residential and/or commercial customers in a competitive electricity market. To do business in Illinois, an electric supplier must be certified by the ICC and complete the utility's registration process. For more information about ARES, refer to http://pluginillinois.org/faq.aspx. ARES are defined in Illinois statute in 220 ILCS 5/16-102.
Charging station level	Charging station level means the standardized indicator of electrical force, or voltage, at which an EV's battery is recharged. Level 1, Level 2, and DC Fast Charging (sometimes also referred to as "Level 3") are the most common EV charging level terms, and include the following specifications: • Level 1 Charging requires access to a standard, grounded, three-prong 120-volt outlet with a ground fault circuit interrupter. Most plug-in hybrid electric vehicles can be fully charged at Level 1 in eight to 10 hours. Battery electric vehicles (i.e., all-electric vehicles) can take 12 to 24 hours to become fully charged at Level 1 because of their larger battery size. Level 1 charging has an electric load of 15 to 20 amps, which is about the same as a large microwave oven. • Level 2 Charging requires installation of a 240-volt charging station by a licensed electrician; the load is similar to what an electric stove or central air conditioning system requires. Level 2 charging will typically charge an EV in about half the time needed to charge at Level 1. This type of charging may require upgrades to facility wiring or electricity distribution infrastructure. Consumers should contact their local electric utility before installing Level 2 or greater charging equipment to verify that local distribution equipment is adequately sized to serve this additional electric load. • DC Fast Charging equipment is capable of charging certain types of EVs in about 30 minutes. DC fast charging power requirements are typically 480-volt, 125 amp, 55 kilowatt or higher. However, the Society of Automotive Engineers (SAE) has not yet established a standard for DC fast charging equipment. As a result, only a limited number of EV types will initially be able to utilize DC fast charging. A national SAE standard for DC fast charging is under development and, once approved, this charging level should become more widely available and applicable to more vehicle types. The term "Level 3" is sometimes used to refer to DC fast charging; however, Level 3 is the SAE standard that is currently under development and technically does not exist yet. When the Level 3 standard is determined, it will cover either AC or DC applications and will likely provide a higher power level than the current DC fast charge stations.

CMS	Illinois Department of Central Management Services – The Illinois state agency that manages the state fleet under its Division of Vehicles (DOV).
DCEO	Illinois Department of Commerce and Economic Opportunity
EV	Electric Vehicle – Per Public Act 97-0089, "Electric vehicle" means (i) a battery-powered electric vehicle (BEV or all-electric vehicle) operated solely by electricity or (ii) a plug-in hybrid electric vehicle (PHEV) that operates on electricity and gasoline and has a battery that can be recharged from an external source.
EVAC	Illinois Electric Vehicle Advisory Council
EVSE	Electric Vehicle Supply Equipment – The conductors, including the ungrounded, grounded, and equipment grounding conductors, the EV connectors, attachment plugs, and all other fittings, devices, power outlets or apparatuses installed specifically for the purpose of delivering energy from the premises wiring to the EV.
ICC	Illinois Commerce Commission
ICECF	Illinois Clean Energy Community Foundation
IDOT	Illinois Department of Transportation
IEPA	Illinois Environmental Protection Agency
IGEN	Illinois Green Economy Network – The Illinois Community College system's consortium of sustainability centers.
IMEC	Illinois Manufacturing Extension Center
IML	Illinois Municipal League
ISTC	Illinois Science and Technology Coalition
MMC	Metropolitan Mayors Caucus
PEV	Plug-In Electric Vehicle – See definition for EV. PEV is the term used in the Illinois Commerce Commission's Initiative on Plug-In Electric Vehicles.
Time-variant electricity rates	Time-variant electricity rates are electricity pricing plans in which electricity prices vary according to time of day, with higher prices at times when electricity demand is higher (also known as "peak" hours of the day) and lower prices at times when demand is lower (also known as "off-peak" hours of the day). Examples of time-variant electricity rates are real-time pricing (RTP) and time-of-use (TOU) pricing.

Appendix 3: Resources

National-Level Resources

U.S. DOE Alternative Fuels & Advanced Vehicles Data Center
Electric Charging Station Location Map and Station Finder
http://www.afdc.energy.gov/afdc/fuels/electricity_locations.html

U.S. DOE EVSE Residential Charging Installation Video
http://www.cleancities.tv/FeaturedContent/Training/EVSEResidentialChargingInstallation.aspx

Electric Vehicle Safety Training: A Project of the National Fire Protection Association
http://www.evsafetytraining.org/

GoElectricDrive
The Electric Drive Transportation Association's (EDTA's) information hub for EVs
http://www.goelectricdrive.com

Project Get Ready
Project Get Ready is a non-profit initiative led by the Rocky Mountain Institute, helping cities to develop plug-in vehicle infrastructure.
http://projectgetready.com/

The Utility Guide to Plug-in Electric Vehicle Readiness
A report published by the Edison Electricity Institute (EEI) for utilities
http://www.eei.org/ourissues/EnergyEfficiency/Documents/EVReadinessGuide_web_final.pdf

Battery recycling industry leaders
Umicore in Europe: http://www.umicore.com/en/cleanTechnologies/recyclage/
Toxco in the U.S.: http://www.toxco.com/

State-Level Resources

The Illinois Commerce Commission's Initiative on Plug-In Electric Vehicles
http://www.icc.illinois.gov/Electricity/PEV.aspx

Illinois EPA Alternate Fuels Program
Illinois Green Fleet and Alternate Fuels Rebate and Grant incentive programs
www.illinoisgreenfleets.org

California Plug-In Electric Vehicle Collaborative
http://www.evcollaborative.org/

California Clean Vehicle Rebate Project (CVRP)
The CVRP is funded by the California Environmental Protection Agency's Air Resources Board and administered statewide by the California Center for Sustainable Energy (CCSE). The program website provides detailed display of program statistics and funding availability.
http://energycenter.org/index.php/incentive-programs/clean-vehicle-rebate-project

Ready, Set, Charge, California! A Guide to EV-Ready Communities
http://www.baclimate.org/impact/evguidelines.html

Regional- and Local-Level Resources

Bloomington-Normal EVTown
http://www.evtown.org/

Fox Valley Electric Auto Association
http://www.fveaa.org/

Delta College (Mid-Michigan Community College)
Advanced Battery Manufacturing Fast Start Program:
A model program for community college training in Advanced Battery Manufacturing to meet the needs of a new employer hiring in the Great Lakes Bay Region.
http://www.delta.edu/lifelonglearningcontent/industry/advanced-battery-manufacturing-fast-start.aspx

Puget Sound Regional Council Report
Electric Vehicle Infrastructure: A Guide for Local Governments in Washington State
http://www.psrc.org/transportation/ev/model-guidance/

Appendix 4: EVAC Participants

The following individuals contributed to the development of this report through their participation in one or more EVAC meetings and/or submission of written sections.

** indicates an appointed member of the Electric Vehicle Advisory Council. All other individuals are participating stakeholders.*

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Brian Granahan, ICC
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Bruce Ho, NRDC
Eric Kozak*, Ameren Illinois
Bruce Lanzerotti, Plug-In Vehicle Solutions
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