

Indianapolis Advances Electric Vehicle Technology

The last several years have been transformative in Indianapolis, with impressive market growth and adoption of electric drive technologies, which has gained national and international attention.

- **2009:** [Project Plug-IN](#), an initiative of [Energy Systems Network](#) (ESN), began with a mission of spurring the adoption of plug-in vehicles (PEV) and related infrastructure throughout Central Indiana. After an initial deployment of 125 plug-in vehicles and nearly 200 charging stations, Project Plug-IN prompted a burst of momentum in the state's early interest in plug-in technology.
- **2012:** Indianapolis Mayor Greg Ballard signed an [Executive Order](#) requiring the entire non-police municipal fleet be converted to plug-in or hybrid vehicles by 2025.
- **2013:** A French company, Bolloré Group, announced it would launch their first North American electric vehicle car share program in Indianapolis, bringing another 500 plug-ins and 1,000 charging stations to the city.
- **2013:** Indianapolis has also enjoyed global recognition as a leader in transportation electrification when it received the ["E-Visionary Award"](#) by the World Electric Vehicle Association in Barcelona, Spain.

"This evolution in transportation will one day result in our country never again facing an international crisis with the specter of oil hanging over our head."

*- Mayor Greg Ballard
Indianapolis*

But Indianapolis' commitment to electric drive reaches beyond these activities. A number of local companies and organizations have contributed to making Indianapolis a leader in the PEV market. The following are some of those organizations and highlights about the work they are doing.

Allison Transmission, Inc.



Allison Transmission offers hybrid electric parallel architectures for a wide range of commercial vehicles, including transit and city buses, and medium- and heavy-duty trucks for distribution, refuse, utility and bus applications. These hybrid systems use both electrical and mechanical means for powering the vehicle wheels. We have worked for decades to build some of the most reliable transmissions in the world, and this expertise and depth of knowledge of vocations has transferred to our hybrid system designs and how to optimize energy recovery.

Unique Allison hybrid propulsion systems allow efficient regenerative braking and deliver reduced fuel consumption with fast and smooth acceleration. We provide the performance and reliability users need and the increased fuel economy they want. **With an Allison hybrid system to capture for reuse otherwise wasted energy from braking, the engine isn't as heavily loaded and users will experience fuel savings up to 25 percent depending on the vocation and duty cycle.**

"Allison Transmission has been a pioneer in hybrid electric propulsion systems since 1989, and since 2003 we've delivered more than 6,000 hybrid-propulsion systems for transit buses," said Vice President of Hybrid Programs Laurie Tuttle. "Our systems currently operate in hundreds of cities worldwide, providing the dependable and efficient Continuous Power Technology™ for which Allison is known."

City of Indianapolis



On December 12, 2012, Mayor Gregory A. Ballard announced a progressive initiative **to transition Indianapolis' fleet from foreign oil by 2025, becoming the first U.S. city to make this commitment.** In addition to transitioning Indianapolis' municipal fleet, the city is expanding options for residents and visitors by working to implement the nation's first all-electric car share program.

"America's dependence on oil for transportation puts our national security at risk. New improvements to post-oil technology allow us to travel further than ever before without stopping at a gas station. This evolution in transportation will one day result in our country never again facing an international crisis with the specter of oil hanging over our head," said Mayor Greg Ballard, Indianapolis.

Contour Hardening, Inc. and its operating division, Real Power



Indianapolis-based Real Power is the nation's leading manufacturer of chassis-integrated mobile generating systems. Real Power builds systems that fit major truck platforms and their technology converts vehicles into mobile power stations.

Sprawling Midwest cities, like Indianapolis, lacking widespread mass transit infrastructure, present challenges to battery-powered electric vehicle (BEV) growth due to range anxiety. **Home- and office-based Level 2 charging can satisfy the majority of daily commuter recharging needs.** However, with their limited six-hour charging capacity, Level 2 charging solutions make non-repetitive trips of greater than 60 percent of a BEV's range limit impractical. Unanswered, the BEV "charging gap" will restrict purchase rates, business viability and growth potential. "Our objective is to bridge the charging gap and to remove the 85-mile range barrier that is hindering BEV adoption among consumers and industry alike," said President and CEO John M. Storm.

Duke Energy



Duke Energy is preparing for growing plug-in electric vehicle adoption by collaborating with customers, car manufacturers, technology developers and others. By being on the front end, Duke Energy can help enhance the customer experience to ensure electric vehicle owners can charge them safely, conveniently and at the lowest price without affecting the power supply. **Duke Energy currently has**

one of the nation's largest fleets of plug-in electric vehicles with plans to double our fleet over the next year. We are also part of Indiana's Project Plug-IN initiative that aims to deploy, demonstrate, and evaluate a smart charging "ecosystem" for plug-in electric vehicles. Duke Energy will use the insights and data collected from this and other customer programs to ensure we stay ahead of the game with any potential grid updates and to continue to provide safe, reliable, and affordable power to all of our customers.

Eli Lilly & Company



At Lilly, we believe that there's a strong connection between the environment, economy and the communities in which we work and live. This includes our commitment to our employees. That's why we began installing Electric Vehicle charging stations in 2011. We currently have more than a dozen EV stations spread across our

two Indianapolis campuses. We've also committed to the Department of Energy's Workplace Charging Challenge along with several US Fortune 500 companies. Going forward, we'll continue to seek out opportunities for a public/private partnership to grow our charging infrastructure to meet the demands of our environmentally-conscious employees.

Indianapolis Power & Light was the first utility in Indiana to offer its customers a time-of-use based electric vehicle rate.

EnerDel



EnerDel, located in Greenfield, Ind., manufactures

high-energy and high-power advanced lithium-ion batteries and energy storage systems utilizing multiple chemistries. **EnerDel's strategic focus is towards stationary energy storage systems and medium- and heavy-duty transit applications.** EnerDel's experience over the past 10+ years with prismatic cell design and modular stacking architecture combine to provide customers with production-ready solutions that address a variety of power and energy storage needs. This includes leveraging EnerDel's standard, off-the-shelf DC solutions as well as customized solutions to adapt to customer requirements. EnerDel has offered its battery and system expertise to meet the city's commitment on cleaner energy initiatives, such as with "Project Plug-IN."

"EnerDel is dedicated to providing the best combination of safe and reliable energy storage solutions for stationary and transportation markets," said EnerDel CEO David Roberts. "We believe that bringing value to the customer in this market will catalyze broader goals of energy independence, energy security and energy sustainability."

Energy Systems Network (ESN)



Energy Systems Network (ESN) is a not-for-profit initiative focused on bringing alternative energy technology solutions to market, using innovation to confront global energy challenges with systems-level solutions. Our goal is to build an “energy ecosystem” that connects partner companies and institutions with industry to address energy needs and generate new jobs and investment in the process. In addition to assisting the City of Indianapolis’ with its municipal fleet conversion and Bolloré Group’s EV car sharing system, our [Project Plug-IN](#) initiative has achieved a number of milestones to expedite electric drive in our state:

- **Over 125 plug-in vehicles deployed and nearly 200 charging stations (including the state’s first three DC quick charging stations) installed throughout Central Indiana**
- **Toyota selected Indianapolis and ESN to conduct a 12-month pilot of its Prius PHEV and grid communication system with real-world Duke Energy customers**
- **Coordinated with Duke Energy, Simon Property Group and Toshiba to build a first-of-its-kind integrated charging station incorporating renewable energy, energy storage, two Level 2 charging stations and a DC quick charger**

Simon Property Group installed a Plug-In Ecosystem at a Carmel, Ind. mall – a first-of-its-kind integrated charging system incorporating solar power, energy storage, two Level 2 charging stations and a quick charger.

“ESN recognizes the market adoption of electric vehicles is a critical next step in our community’s commitment to a greater energy independence and efficiency for future generations,” said President and CEO Paul Mitchell. “Indianapolis has demonstrated significant leadership in the alternative energy technology sector, much of which can be attributed to collaborative efforts across industry boundaries – and we’re attracting international accolades for it.”

Indianapolis Power & Light



IPL continues to be a leader in supporting customers’ use of renewable resources. Investments in electric vehicle programs enhance the quality of life for our customers and the people of IPL. **As the first utility in the state of Indiana to offer its customers a time of use based electric vehicle rate, IPL has been a leader in providing options that help remove barriers for the adoption of electric vehicle technology.** One of the many ways IPL has helped promote electric vehicles is through a partnership with the Indianapolis Mayor’s office. By working with the city to complete installation of 26 dedicated charging stations, IPL helped pave the way for the conversion of the city’s non-emergency fleet to alternative fuel vehicles.

“IPL is pleased to be a partner in these initiatives that work to create forward-thinking solutions to meet future needs,” said Vice President of Public Affairs Greg Fennig. “Our partnership with electric vehicles is another example of IPL’s ongoing commitment to the community.”

IU Health



Indiana University Health

IU Health, Indiana’s most comprehensive healthcare system, purchased two THINK CITY electric vehicles in 2011 for its IU Health Pathology Laboratory. The two all-electric cars run the route between the main downtown hospitals – IU Health Methodist and IU Health University and Riley Hospital for Children at IU Health – a route that traditionally guzzles the most gasoline in conventional cars. Adding electric vehicles to the fleet is just one of the many initiatives IU Health has adopted to deliver on its mission of improving the health of the community and to continued innovation and excellence in health care. The cars cover nearly 50,000 miles a year, save millions of pounds in carbon dioxide emissions and “juice up” at one of the five charging stations installed in the IU Health Pathology Lab parking garage. The IU Health branded cars have been specially outfitted with coolers and equipment dollies to transport medical specimens from the hospitals back to the lab.

“Alternative transportation is good for business, good for people and good for our community,” said Vice President of Supply Chain Operations Joe Arruda. “IU Health is continually looking for sustainable business practices that contribute to the health of our patients and the community. Electric urban transportation allows us to be better stewards of our environment and the money saved can be reinvested in patient care.”

Simon Property Group



Simon Property Group is an S&P 100 company and a leader in the global retail real estate industry, with an interest in more than 325 retail real estate properties in North America and Asia, totaling over 240 million square feet. Simon is committed to providing sustainable amenities for our customers. As businesses and consumers look for ways to decrease the economy's collective dependence on fossil fuels, we recognize the need to move to more efficient transportation systems, including electric vehicles.

"We now have 123 electric vehicle (EV) charging stations installed at our properties across the U.S. with a plan to expand in the future," said Simon spokesperson Les Morris. Simon's EV charging station network includes unique installations such as **the renewable energy ecosystem opened at Clay Terrace in Carmel, Ind. in September 2013 – a first-of-its-kind solar-powered system that combines traditional 240V and quick-charge stations with batteries that store the solar power for evenings and cloudy days.**

Visit Indy



Visit Indy, the official sales and marketing arm of the city of Indianapolis, together with Indianapolis Mayor Greg Ballard, was pleased to announce last June that the Electric Drive Transportation Association selected Indianapolis to host its 2014 Conference & Annual Meeting, **attracting more than 1,200 attendees from across the country and generating an estimated \$1 million in economic impact for Central Indiana.** In addition to the Indiana Convention Center, the EDTA conference will utilize Georgia Street, the city's three-block outdoor promenade, and the iconic Monument Circle for its Ride, Drive & Charge event featuring public programming and education about electric cars. For more information, go to www.VisitIndy.com.

"The value of the EDTA Conference & Annual Meeting goes well beyond the economic impact of the meeting itself," said Leonard Hoops, president and CEO of Visit Indy. "It will bring many transportation thought leaders to Indy which could lead to future business development opportunities for the region. Mayor Ballard played a pivotal role in helping Visit Indy win the EDTA conference through his commitment to electric vehicle programs."