Illinois Clean Truck Fleet Forum Notes

Advanced Energy Group - Chicago

September 30, 2021

Introduction – Dave Schaller, North American Council for Freight Efficiency

After a welcome by HG Chissell, CEO of the Advanced Energy Group, Dave Schaller of the North American Council for Freight Efficiency provided the introduction for the forum. Mr. Schaller explained that the forum grew out of an AEG-Chicago challenge. Based on environmental justice concerns relating to air quality and health indices, improving the sustainability of truck fleets on the west and southwest sides of Chicago was adopted as a challenger by AEG-Chicago team. A group of more than 30 volunteers broke into discussions related to air quality, fleets, electric vehicles, and grants/incentives.

The group identified a number of opportunities in Chicago, including truck electrification, hydrogen fuel cell trucks, funding support, and intermodal terminals that produce a number of short trips on the southwest side. The intermodal traffic was said to include drayage trips between terminals.

The group organized this forum with the goal of sharing information and concerns regarding truck electrification among truck fleets.

Facilitated Fleet Discussion – Tim Milburn, Green Ways 2Go, et al.

Asking a series of questions, Mr. Milburn, of Green Ways 2Go, invited fleets to participate in a discussion about truck electrification.

What are the major barriers for a fleet to move to electric vehicles?

Yann Kulp of eIQ Mobility identified ***complexity in the decision-making process*** as a big barrier for fleets. There are variables, including manufacturers, incentives, cost-of-electricity, etc., that need to be considered by fleets. Fleets are focused on cost control and operational reliability, so sorting out all of the information to these ends is tough. Mr. Schaller agreed that fleets don't tolerate unknowns, and fleets are just unfamiliar with many of these issues. Unknowns that fleets fear will lead to downtime are intolerable.

Gary King of Allstate Roadside identified the ***truck-driver shortage*** as another barrier. Fleets are struggling. Allstate has a fleet of rescue vehicles and is suffering from a severe shortage of drivers. Mr. King noted, however, that a lot of potential young workers might be more attracted to driving if the vehicles were electrified. Mr. Schaller added that, during NACFE's summer

2021 Run on Less – Electric program, driver feedback was enthusiastic. Some drivers started the program with hesitation, but once they started, they didn't want to end the program.

Jim Longino of the Greater Southwest Development Corporation noted there were ***many independent truck drivers and small fleets.*** Independent operators and small fleets have invested hundreds of thousands of dollars in their gasoline- and diesel-based operations and equipment. Subsidies may be necessary to accelerate their switch to electric vehicles. Mr. Schaller agreed and pointed out that many of the vehicles used in drayage are on their second or third ownership cycle. Small operations won't have the office staffs to chase grants. Major truck fleets like NFI and Schneider are electrifying their drayage operations in California, but smaller fleets are not. Mr. Milburn also pointed out that not only would the investment in vehicles be a challenge, but charging infrastructure investments too. However, Mr. Kulp suggested that beneficial owners of freight may choose to assist their smaller trucking contractors' move to electric vehicles. Mr. Kulp pointed to Ikea's partnership with Fluid Truck to provide access to electric vehicles to facilitate Ikea's goal of 100% zero-emission last-mile home deliveries by 2025.

How does one develop a successful plan for electric vehicles?

Ken Crowley, Fleet Superintendent for the Village of Oak Park, spoke about his purchase of electric cars. The ***limited travel of the municipal vehicles*** made it hard to justify a large investment in electric vehicles, but an investment in the parking facility allowed charging facilities to be added, allowing the Village to move forward with electrification more economically. Nissan had a series of rebates, and leased the vehicles for one year, since the Village was not eligible for the tax incentive. Splitting the savings with the leasing company, the Village brought the cost of the vehicle down to the cost of a hybrid vehicle. So now the Village is not paying for oil changes and brake life is substantially longer. However, ***training*** was still a major issue – even turning a hybrid vehicle on was a challenge for some employees. The Village has also had to ***fight misinformation*** among staff about fire dangers.

Mr. Crowley went on to note that less expensive batteries would help. ***Higher electric-vehicle prices*** take time to recoup; costs for electric vans are about $2,000 less than traditionally fueled vehicles. For the water department, the additional investment takes three years to recoup from lower costs; for animal control, it takes five years.

Jim O'Leary of NFI discussed his company's electrification work in California. He said to get started, the most important thing is to look at application first. Electrification cannot at this time reach all use cases for Class 8 trucks, or even light duty. ***Pick applications where electrification is viable***. Also, ***select the site that makes sense***. Consider whether you own or lease the site, who is going to pay for the infrastructure, are there incentives at that location, and have conversations with the local electric utility. Then work with a truck manufacturer to navigate the details.

Mr. O'Leary also noted that you needed ***organizational buy-in*** for electric vehicle purchases. It's not feasible to simply go to purchasing to buy electric trucks then expect a delivery in six months. The real estate, finance, and legal all need to be involved. Mr. Milburn termed this "the electric-vehicle ecosystem." You need to think about it differently – the money comes from different places, there are new partners, and we need to simplify that.

John Truckenbrod of the EV Energy Group asked Mr. O'Leary about NFI's decision-making process, noting that they are a forward-thinking organization. Leadership is important here. Mr. O'Leary responded that for the company's leadership, one of the core values is social responsibility. The company's strategy for sustainability involves customers, innovation, and people. Green initiatives, reducing the carbon footprint, and acquiring electric vehicles touch on all three prongs of the sustainability strategy. As a 3PL, NFI needs to bring value to customers. Being lowest-price is not as important for some customers trying to be carbon neutral by 2035 or 2040. Such customers will seek transportation providers they can look to who have ***made the commitment and have the expertise*** to help them toward carbon neutrality.

Mr. Milburn thanked participants and reintroduced Mr. Schaller to begin the next part of the forum.

Technology – Dave Schaller

Mr. Schaller started by noting the range of options for reducing truck emissions. Options can be simple, like biodiesel or renewable gases. Hybrids with CNG and RNG are available. But electrification is growing fast, including hydrogen fuel cells (which NACFE classifies with electric technologies).

Mr. Schaller continued that on July 14, 2020, fifteen states plus the District of Columbia signed a ***memorandum of understanding*** to push forward with electric trucks. These states are looking to have 30 percent of new trucks to be electric by 2030. However, no Midwest states participated. So the Midwest needs to catch up with developments on the east and west coasts. For example, in New York, NYCERDA covers 95% of the marginal cost of moving from an internal combustion engine to battery-electric trucks.

Change is in the air. Amazon is partnering with Rivian to acquire 100,000 electric delivery vehicles in the next several years. UPS has partnered with Arrival. FedEx is partnering with BrightDrop. But change is uneven. These companies are putting electric vehicles in communities most supportive of the change. Is Chicago such a supportive community? Rivian is repurposing a factory for electric vehicles in Bloomington; Lion Electric is building a new factory in Joliet, but the activity here doesn't match that seen elsewhere.

NACFE just completed a demonstration project for thirteen OEM battery-electric vehicles, "Run on Less – Electric," operating across the United States and Canada. All of the information from the demonstrations is shared on ***runonless.com***. Demonstrations included not just Class-8 trucks but also step vans, medium-duty box trucks, and yard tractors. One electric yard-tractor provider noted that they already have twenty different fleets running electric yard tractors in the Chicago area.

Runonless.com includes metrics by day, fleet introductions (interviews with drivers, leadership, OEMs, and videos of the vehicles themselves), fleet profiles (trucks, duty cycle, charging system) and "stories from the road," covering different aspects of truck electrification. The site also includes an electric-truck bootcamp webinar series. The bootcamp included 10 sessions with 48 experts sharing information about different aspects of truck electrification. All of this information is still available on the site.

Another resource for fleets interested in electric trucks is the Calstart ***Zero-Emission Technology Inventory (ZETI)***. By selecting the vehicle platform and the year you are planning to make a purchase, applicable OEMs are displayed; clicking on a selected OEM will take you to their web page for more information about that truck.

Mr. Schaller completed his presentation with a discussion of the ***total cost of ownership***. Truck fleets make purchases very carefully, cognizant of both costs and risks. Purchase prices for battery-electric trucks may be two or three times that of internal-combustion engine trucks, and infrastructure is expensive, but operations and fuel expenses (including taxes) are lower. Maintenance costs are hypothetically lower, but the actual savings haven't been proven yet. Residual values are unknown.

Infrastructure is expensive and requires new knowledge. Fleet operators aren't accustomed to working with electric utilities and contractors, and those companies aren't accustomed to working with fleets. Charging system suppliers are unknown to fleets. Fleets aren't familiar with the range of chargers, connectors, etc. NACFE has prepared a report on infrastructure to assist fleets as they navigate these issues.

Fleet Discussion – Tim Milburn et al.

Mr. Milburn invited fleets to participate in a discussion about electrification ***infrastructure***. During registration, participants included questions about the costs of infrastructure, necessary electrical capacities, charging levels (level 2 versus DC fast charging), and how to get to Class 8 charging.

John Truckenbrod noted that there's a cost difference between the level-2 240-volt AC chargers versus the DC fast chargers. Incentives tend to direct clients toward a dual port level-2 charger. A five-year program including installation, operation, and network will cost $15,000. DC fast chargers will cost $150,000. But ***sometimes the level-2 chargers are sufficient***; Mr. Truckenbrod noted that some bus fleets with 150KW batteries are using level-2 since they are only traveling 40 or 80 miles per day. They can easily replenish the battery overnight using the level-2 charger. The level-2 chargers will charge 25 to 30 miles of charge in an hour.

Liam Donnelly of WasteNot Compost said he was now considering moving from level-2 chargers to DC fast chargers for his fleet. He suggested that fleets considering DC fast chargers be aware of ***network connectivity requirements***. He noted that this was not an issue with level-2 chargers, but he's seeing this with DC fast chargers. Certain manufacturers are requiring networking, which can facilitate driver authentication and energy-use tracking, but costs a few thousand dollars per year, so wasn't a good deal for a small fleet on private property.

John McCann of ComEd said the most important thing regarding infrastructure is early engagement of ComEd if you are adding chargers. ComEd may need to bring in additional capacity to the site. That may take four months to a year, if a new feeder line is required. Mr. McCann said onsite costs are typically minor; but costs may accrue for off-site work. But customers can use a line extension tariff to get a credit for additional revenue ComEd expects.

Mr. Milburn followed up by asking how to engage ComEd in implementing a stepped plan for electrification? Mr. McCann responded that ComEd is going through that now with a number of customers. The more information ComEd has regarding the ultimate fleet buildout, the better. The customer can always build to meet those eventual requirements so they are ready. ComEd will work with customers on the power needs. Again, early engagement is key; ComEd is looking at 5- and 10-year planning needs. ***Mr. McCann*** said he can help connect fleets with the appropriate staff. He also said the Large Customer Services office has account managers already identified for large businesses. These ***account managers*** can also be the first point of contact.

Mr. Milburn moved on to questions about ***ambient temperature and range.*** Kate Tomford of the Chicago Transit Authority said the agency has electric buses with ***diesel auxiliary heaters***. Without the heaters, the range was estimated to decline 40% in very cold weather. CTA has high reliability requirements, so CTA can't take the hit to the range. If the range decreased, CTA would require more buses and more space for those buses, but funding is unavailable for either of those. Just to count on the specified range, CTA specified the heaters. CTA is also about to experiment on ***preconditioning*** buses before they are put on the street and while they are still connected to the chargers. This brings bus cabins to service temperatures and conditions the battery to run at an optimal temperature.

Ms. Tomford said that while CTA strives to have electric buses that are zero-emissions, cabin heat is a tough issue. Manufacturers have not been able to resolve the problem. While electric bus manufacturers offer battery thermal management systems, they are not sufficient for CTA's duty cycles. All of the cold-climate electric-bus operators she is aware of are using diesel auxiliary heaters. Nonetheless, CTA's electric buses use electricity for 100% of their propulsion needs, accounting for most of the energy use.

Ms. Tomford was asked about bus charging. CTA uses 150 KW DC and 500 KW DC charging. 500 KW chargers are overhead; the connection is via a pantograph arm supported on a mast. The bus is driven under the pantograph arm, which lowers to the bus, making the connection. The CTA's lower-power chargers are now plug-in, but new deployments of these 150KW "slow chargers" will be overhead. CTA is also looking at single 180KW chargers that can connect to three pantographs, optimize power delivery across the buses, and reduce costs by timing power delivery to take advantage of ComEd's lowest time-of-day pricing. This power-management system is yet to be tested at CTA, but is promising.

Existing Funding Opportunities – Samantha Bingham, Chicago Department of Transportation

Samantha Bingham is the Clean Transportation Program Director at the Chicago Department of Transportation and the Coordinator for the Chicago Area Clean Cities Coalition, a 501(c)(3) not-for-profit that involves multiple agencies working together across the region to reduce petroleum use in the transportation sector. She noted that the members of the Chicago Area Clean Cities Coalition are happy to provide peer technical support to fleets wishing to green their fleets.

Ms. Bingham reviewed incentives that are currently available. Starting with ***national programs***, she discussed the following:

- Vehicle income tax credits are targeted to the light-duty vehicles, not trucks.
- The ***alternative fuel infrastructure tax credits*** are credits of 30%, up to $30,000, per alternative fuel station per location. However, the program is unreliable and often expires before being renewed again. It is available only for entities that have tax liabilities (excluding not-for-profits, governments, and unprofitable businesses like startups), but other entities can lease the equipment so as to monetize the tax credit.
- USEPA's ***rebate program for school buses*** is reliably funded.
- USEPA's ***Direct Emissions Reduction Act (DERA) grant program*** is also reliably funded, but is competitive and requires an application. For-profit entities cannot apply, but those entities can go through the American Lung Association, which acts in Illinois to bundle applications, acts as the fiscal agent, writes the grant, and doles out the funds.
- FAA's ***VALE grants*** are a consistent source of funds for zero-emission airport vehicles and support equipment, as well as charging infrastructure.
- The FHWA's ***Congestion Mitigation and Air Quality Improvement (CMAQ) Program*** funds are available in the Chicago and Saint Louis metropolitan areas owing to air quality planning efforts. CMAQ had been a reliable source of funds for public and private alternative-fueled vehicles and infrastructure. (Editor's note: this program is administered by FHWA, whose "Buy America" requirements apply but don't generally work for vehicles and equipment. There is a waiver process, but no waivers for vehicles and equipment have been approved since early in the Trump administration. On the other hand, CMAQ funds can be flexed to the Federal Transit Administration, which has Buy-America provisions appropriate for vehicle purchases. Consequently, recent CMAQ program alternative-fuel projects in the Chicago region have focused on transit vehicles and equipment.)

Ms. Bingham reviewed **state programs**:

- ***Driving a Cleaner Illinois Program*** is an umbrella for state programs for the VW mitigation trust and various state-sponsored CMAQ and DERA projects. Participants were encouraged to register for notices of funding opportunities (provided at the link above).
- The Illinois Propane Gas Alliance doesn't really apply to electric vehicles, but is an example of an untraditional funding source; others may be available as well.

Ms. Bingham reviewed **local programs**:

- ***Drive Clean Chicago*** uses CMAQ funds for electric and hybrid vehicles. The Drive Clean Truck program provides funds for the purchase or lease of electric or hybrid trucks. $18,000,000 was previously programmed, but is being held up at the federal level (by Buy-America regulations).9
- The Drive Electric Chicago program uses CMAQ funds to electrify Chicago's fleet. Like other CMAQ-funded fleet programs, this program is on hold.

Ms. Bingham noted that Ms. Bocanegra will review additional utility electric-vehicle funding programs. But she pointed out that the Alternative Fuels Data Center has ***examples of utilities' programs*** for transportation electrification on its laws and incentives page. The ***laws and incentives*** page also has many other resources for electrification, both at the national and state level.

Upcoming Funding Programs – Commissioner Maria Bocanegra, Illinois Commerce Commission

Commissioner Bocanegra started with a disclaimer that any remarks shouldn't be construed as representing the agency for any existing or future docket.

Commissioner Bocanegra explained SB 2408, the new clean-energy bill, effective September 15, 2021. The legislation is about 1000 pages long, and has a number of areas directly concerning fleets. The bill amends the Electric Vehicle Act, establishes the Electric Vehicle Coordinator at IEPA, and establishes a goal of 1 million electric vehicles by 2030. The bill requires electric utilities to establish beneficial electrification programs. The ICC will need to approve or modify investments and incentives for electrifying public and private medium- and heavy-duty trucks that travel through environmental justice communities. Incentives will also be developed for electrifying school bus operations and, for rural areas and state-highway corridors, level-2 and DC fast charging stations (which may support travel by fleets in other areas).

The beneficial electrification plans, at a minimum, will address resources to incentivize private investments, as well as fleets. The plans will need to be filed by July of next year. Commissioner Bocanegra encouraged fleets to become involved and participate in, or at least monitor, the workshops and proceedings. There will also be rebates implemented through IEPA which will fund up to 80% of the costs for charging stations for public and private organizations. These will help fund some of the upfront costs for fleet owners. Rebates are also available for vehicles exclusively powered by electricity.

The law creates the Energy Transition Assistance Fund, capped at $180 million per year. Fleets should consider these funds, but be aware of any strings attached. "Stretch codes" are also authorized to facilitate building code enhancements to facilitate electrification. These could reduce investment costs.

Commissioner Bocanegra explained that SB 2408 amends existing energy efficiency and demand response programs. In addition, public schools will be implementing carbon-free assessment programs and will be developing plans to increase energy efficiency, reduce carbon emissions, and move to carbon-free energy usage by 2030. This will provide another opportunity for fleets serving public schools.

The law also puts forth a "Renewable Energy Access Plan" (aka Transmission Plan). This isn't strictly focused on fleets or charging, but fleets should keep this in mind as their storage options may be considered and contribute to this plan.

A baseline assessment is required by the new law. Part of the assessment will be identification of data deficiencies. One of the known deficiencies is information about when fleets will be coming onto the grid. So this issue will need to be addressed in the coming assessment.

Another upcoming docket process is operationalizing the performance metrics required for ComEd and Ameren. One of the six required performance metrics, "achieving affordable customer delivery service costs," will be of concern to fleets. Engagement by industry will be beneficial.

Commissioner Bocanegra finished her presentation by reminding participants about future potential funding. The VW settlement funds had been focused on buses in Illinois, but that will be updated in light of the new energy legislation. Information will be updated through the IEPA site, as described previously by Ms. Bingham.

OEM Funding Assistance – Jillian Safian, Lion Electric

Ms. Safian explained that she is a Section Chief for grants and RFPs at Lion Electric. Lion is a medium- and heavy-duty, purpose-built electric vehicle manufacturer. To date, Lion has 400 vehicles in operation, produced at a factory in Quebec. A new factory being built in Joliet will have a capacity of 20,000 vehicles per year. The company has 900 employees and is growing quickly.

Ms. Safian leads the Grants team. Other teams that are introduced to a new client would include Energy, focused on assisting with charging infrastructure; the Lion Academy, focused on training and preparing clients for their electric fleets; Lion Assistance, handling customer inquiries and trouble-shooting; the Bright Squad, providing local service; and the Lion Beat team, which assists with client telematics.

The Grants team offers turn-key solutions for ***applying for, monitoring, and tracking*** grant applications. The Grants team will be the first group meeting with a client after the sales manager. The team writes the proposals, submitting the documents, create budgets, timelines, and works with the grant agency. The team then assists with reporting information, for example, from telematics.

Ms. Safian finished her presentation by noting that ***partnering*** with multiple grant-making agencies is sometimes advantageous for both the OEM and the client. "Stacking" grants to cover greater portions of acquisition and infrastructure costs helps fleets increase their return on investment. Lastly, another aspect of partnering is working with grant agencies to help them understand electrification better, so as to improve the effectiveness of their grant-making. This is typically done through responses to "requests for information."

Fleet Experiences – Liam Donnelly, WasteNot Compost

Mr. Donnelly is the founder and CEO of WasteNot Compost. WasteNot collects compostable waste from a residential and commercial network using a fully zero-emissions fleet. The fleet currently consists of 25 vehicles, generally step-vans, though class 6 and class 8 vehicles will

soon be added to the fleet. The operation is "last-mile" – coming back to the same depot every night, allowing for economical charging. The fleet doesn't require over-the-road charging or DC fast charging.

One challenge the company has faced is that they haven't been able to get grants for their electric vehicle purchases. Such grants usually ***require that a diesel vehicle be scrapped,*** but that's not feasible for WasteNot, since it has been zero-emissions from the start.

Mr. Donnelly explained that the fleet has 50- to 70-mile-per-day routes. They are beginning to have discussions regarding DC fast chargers, but wading through charging-infrastructure information is a challenge. There are many companies producing good charging equipment, but many ***require a data plan***. However, for WasteNot's use case, driver authentication isn't necessary, it's private property, and sub-meters provide information on electric consumption. Smaller companies may provide good equipment but don't require data plans that will be a ***drag on cash flow*** for the life of the equipment.
Mr. Donnelly pointed out the importance of ***reliability and customer support*** not only for vehicles, but for ***charging infrastructure***. If a charger fails, vehicles will need to be moved around, maybe by the manager or the night-shift manager, and is an inconvenience.

One big challenge is ***getting drivers into the charging routine*** each night. New drivers come from other gas and diesel fleets. Mr. Donnelly said that it takes two weeks to establish a new routine. Each driver is responsible for charging their vehicles each night, but it is checked by the manager and the night manager.

Another big issue for WasteNot is ***winter***. Drivers must be comfortable in the cabin. If you are operating in the winter, you need to have options for cabin heat. Battery heat will take substantial charge off a vehicle, so you need to plan ahead. So when buying a vehicle, understand the winter heating technology.

Lastly, Mr. Donnelly talked about the big picture for fleet electrification, and how businesses can leverage it competitively. Sixty percent of WasteNot's customers chose WasteNot because of its electric fleet. The ***marketing advantages*** are huge. Mr. Donnelly said the investment paid off.

Fleet Experiences – Danny Fahey, Martin Brower

Mr. Fahey is the Director of Global Operational Excellence and Sustainability for Martin Brower. Martin Brower is one of the largest supply-chain providers for restaurants and is headquartered in Rosemont, Illinois. Martin Brower has committed to "science-based targets," reducing its carbon footprint by 40% by 2030. Martin Brower has had success with new technologies.

Martin Brower reviewed the feasibility of electric trucks at its McCook facility. In-yard equipment is run by hydrogen fuel cells. While electrification of on-road vehicles is technically feasible, the ***incentives are not as attractive in Illinois as elsewhere***, so electrification has been put on hold here.

Fleet Discussion – Tim Milburn et al.

Commissioner Bocanegra started off by emphasizing the ***importance of collaboration***. At the ICC, participation in workshops doesn't require an attorney; participants can simply log on, and can file comments. When a docketed proceeding begins, you will need an attorney, but participation in workshops is not complex.

Mr. Schaller returned to a point brought up by Mr. Donnelly. He pointed out that the ***scrappage requirement didn't make sense*** for many fleets, since they cycle through trucks in just three to five years, and there are some fleets, like Mr. Donnelly's, that by moving directly to electric vehicles, make themselves ineligible for the incentives – a senseless result. Mr. Donnelly added that he considered buying and running an obsolete truck for two years, just to turn it in for an incentive for a new electric vehicle.

Mr. Chissell added that it's important to keep the conversation going. The discussions are a base for mobilization. Once you have that base, you can start work on aligning or agreeing on the priorities. That agreement on priorities can then be leveraged to ***get attention, get funding, and set up programs.*** So keep up the conversations.

Mr. Peterson asked about ***leased electric vehicles***. Mr. Schaller said Ryder, Penske, and Idealease are all engaged or lease electric vehicles. Mr. Kulp added that there are 5-7 million leased vehicles of all sorts, and the major players have assigned senior leaders to work on electrification. Electrification is both very disruptive for their businesses as well as a substantial opportunity. Ms. Bocanegra said that while the new Illinois energy law didn't specifically address leased vehicles, the law did address fleets, and that includes leased fleets. She hopes OEMs, leasing companies, and owner-operators participate in the workshops.

Closing

Mr. Schaller and Mr. Chissell ***thanked participants*** and ***requested feedback*** about next steps. What should we seek to accomplish if we meet in Q1 2022? Mr. Chissell noted that the next AEG Mobility and Transportation group meeting will be on December 9 in Chicago, and invited everyone to participate.

Notes prepared by Tom Murtha, Chicago Metropolitan Agency for Planning
October, 2021

Comments on these notes are welcome at tmurtha@cmap.illinois.gov.