

**Illinois Energy Efficiency Stakeholder Advisory Group**  
**Midstream-Upstream Working Group**  
**Tuesday, April 28, 2020**  
10:00am-12:00pm  
Teleconference Meeting

**Attendee List and Meeting Notes**

**Meeting Materials**

- [April 28<sup>th</sup> Working Group Meeting Page](#)
- [Tuesday, April 28 Midstream-Upstream Working Group Agenda](#)
- [Market Power: Leveraging Supply Chain Strategies to Achieve Dynamic Program Goals](#) (Energy Solutions and VEIC Presentation)

**Attendees (by webinar)**

Celia Johnson, SAG Facilitator  
Greg Ehrendreich, Midwest Energy Efficiency Alliance (MEEA) – Meeting Support  
LeAndra Archuleta, Energy Solutions  
Matt Armstrong, Ameren Illinois  
David Brightwell, ICC Staff  
Chris Burmester, Energy Solutions  
Hannah Collins, Leidos  
Daniel Cornejo, Energy Solutions  
John Davis, PSD Consulting  
Leanne DeMar, Nicor Gas  
Ram Dharmarajan, Gas Technology Institute  
Gabe Duarte, CLEAResult  
Jim Fay, ComEd  
Scott Fotre, CMC Energy  
Alex Ghanem, PSD Consulting  
Jean Gibson, Peoples Gas & North Shore Gas  
Andrey Gribovich, DNV-GL  
Randy Gunn, Guidehouse  
Kelly Gunn, ComEd  
James Hanna, Energy Solutions  
Sue Hanson, Tetra Tech  
Jan Harris, Guidehouse  
Hannah Howard, Opinion Dynamics  
Dan Hudgins, Opinion Dynamics  
Jim Jerozal, Nicor Gas  
Jeff Johnston, Energy Solutions  
John Lavallee, Leidos  
Howard Merson, VEIC  
John Mansfield, Nicor Gas  
Karianne McCue, Nicor Gas  
Brady McNall, DNV-GL  
Brian Meneghan, Carrier  
Abigail Miner, IL Attorney General's Office  
Jennifer Morris, ICC Staff  
Chris Neme, Energy Futures Group, on behalf of NRDC

Rob Neumann, Guidehouse  
Rob Neumann, Guidehouse  
Randy Opdyke, Nicor Gas  
Michael Pittman, Ameren Illinois  
Stuart Slote, Guidehouse  
Cassandra Squiers, Energy Solutions  
Mark Szczygiel, Nicor Gas  
Andy Vaughn, Ameren Illinois  
Ted Weaver, First Tracks Consulting, on behalf of Nicor Gas  
Chris Vaughn, Nicor Gas  
Sara Wist, Cadmus Group

## **Meeting Notes**

*Follow-up items indicated in red.*

### **Purpose of the April 28<sup>th</sup> meeting:**

- To educate Working Group participants on successes, best practices, and lessons learned from midstream and upstream incentive programs across the U.S.
- Guest presenters from VEIC (Howard Merson and Jake Ahrens) and Energy Solutions (Dr. Chris Burmester, Daniel Cornejo, Jeff Johnston, Jim Hanna, and Cassandra Squiers).

## **Midstream and Upstream Incentive Programs Presentation**

### **Introduction to Presentation**

- This is a model that ES and VEIC have been involved in for decades. Examples will be broken up by technology.
- 900% increase in programs – 900% better results.
- Midstream service delivery model in accelerated mode can go from start to finish in 60 days, based on experience at Efficiency Vermont.
- We will use consistent terminology for what has been used in IL – midstream goes to distributors or dealers, upstream goes to manufacturers. Supply chain overview – shows highlights of each role. Manufacturers are an ally of the program; manufacturer reps streamline the engagement with the marketplace. Distributors are the crux of the midstream model. They are essentially the financing vehicle for the trades with lines of credit. Program can leverage delivery model to have distributors embrace the service delivery model. Contractors are a trusted advisor, and the installer. Trade ally groups.

### **History of Midstream Programs**

- I previously worked for PG&E for 32 years. ES and VEIC colleagues asked me to speak about history, since launched with PG&E in 1998.
- Began in 1997. Was prog. Mgr. with PG&E. A meeting was hosted by director and VP. Some of the PUC commissioners had suggested setting aside portfolio funding for third party program funding to bring private market power to EE and to determine if utilities were maximizing participating and savings through innovative program design.
- *Q: Are existing energy efficiency programs more effective than what the competitive and private markets can deliver?*
  - *A: A variety of yes and no answers to that – some reporting requirements limit participation, large numbers of customers are costly, limited success selling*

*measures especially complex measures. This led to proposing and debating new program designs.*

- Regulatory requirements were revised and new program designs were conceived.
- Launched first midstream program in 1998 with Energy Solutions. First midstream program. Stock and upsell high efficiency equipment. Distributors received a rebate for increased cost from the higher cost equipment and inventory costs and the upsell labor cost.

### **Why midstream?**

- Distributors and engineers could upsell more effectively than utility field staff.
- Automated incentive application could ease burden and increase participation.
- Stocking high-E units can capture replace on burnout sales.
- Since majority of sales go through distributors, could have MT impact.
- Challenges include identifying and accessing market actors, overcoming utility concerns, getting past regulatory barriers, and PUC closing and reopening.
- Decision in 2002-2003 filing that ordered midstream programs closed and HVAC/motors moved back downstream. For those two years, we met frequently and explained the benefits. Showed staff this graph. 91% drop in those two years. PUC in 2004-2005 mandated statewide midstream HVAC and motors program. It has been continuous at PG&E ever since.

### **Applicability to Illinois**

- Will it work in IL? Will it work for gas, for electric, for our climate zone, during COVID? Short answer is yes.
- Goals dictate design. Over many years, stakeholders have different priorities and goals. There are various solutions based on different savings, customer touch, or regulatory goals. In the past massive lighting programs got lots of savings. Midstream isn't a silver bullet [to replace that] but it can help.
- Plumbing, food service, and refrigeration supply chains. These are the same across states. Hot water and restaurant design and their usage don't depend on weather just market scale. Circulator pumps are year-round, and hydronic heating pumps in winter. The market exists. What are design and cost-effectiveness thresholds.
- Need to compare weather and market size for HVAC applicability. ASHRAE climate zones. Yellow and green – zone 4-5 – that zone is more equivalent across markets. Many states are similar. MA, CO, WA, MI, RI, VT, etc. Scale matters. IL is larger than a lot of those other states. These are all places where the mid-up programs exist and are working and even have colder climates.
- What is the COVID Impact?
  - For the most part this market has been pretty resilient. A lot of downstream programs have closed down where midstream is still operating. Because that supply chain is essential business for hot water and plumbing and mechanical etc. Remote outreach enables it to continue.
  - Fewer market actors upstream mean long standing communications with regional managers and distributors – can really quickly get to key stakeholders. Over time when you work on these programs, you get to know people. Launched new programs in NY and WA in April – similar climate, similar technologies gas and electric, – so clearly, it's challenging but it is possible.
  - Pay for performance contracts as pilots could minimize risks.
  - With years of experience doing these programs, we have been checking in to see how it is affecting product availability. It's a global issue. Good news is that

HVAC and plumbing products are on the market. North American pump manufacturers continue, but there was a disruption with Italian plants. Lighting inventory was about 45-90 days, but many products are sourced from overseas. Expecting that to be impaired and waiting to see. It is a fluid situation. Some expected decrease 15-30% end of year decrease with April-May hit hard.

- Food service is down the most significantly. Plumbing/HVAC is not down that much. Lighting is holding steady.
- Electric Assn of Chicago COVID survey results: 157 companies in electrical supply chain. 110 are at over 75% capacity operating – and 41% at 100%. Only 13% below 50% capacity. Distributors (87%) remain busy. Electrical contractors are largely working. The story is that though COVID has had an impact, this essential supply chain is still operating. Manufacturers story is the same as the rest – high operational capacity.

### Midstream and Upstream Program Design Results

- Results – are they applicable to gas and electric, various sizes?
- HVAC results – similar climate zones VT and CO – ASHP taking off in VT. Performance differences in CO between midstream and downstream with same incentives.
- Plumbing results. VT HPWH – midstream way above downstream. MA and Puget Sound, water heaters are so much higher you can barely see the downstream.
- Food service results – over time for gas and electric – switch from downstream to midstream and participation and savings go way up. Order of magnitude or more increase.
- What if I don't want those savings? What if they don't fit in my portfolio? What if it doesn't fit budget?
  - Budget for whole program volume if you can
  - Fund the most cost-effective measures
  - Pilot with selected markets or actors
  - Partner with the market
  - Communicate in real time – avoid start/stop – it's hard to turn these on and off because stocking can happen months in advance

### Challenges and Lessons from Stakeholders

- How to influence decision maker for large region when you are one utility?
- How many measures in the market? Markets don't work by service territory. Have to make a business case for CEOs to change business habits. There is a cost. Long standing and effective market relationships can help pre-enroll distributors. Over time, effectiveness means going beyond basic participation and being strategic. Information access helps and that comes from time. Regional distributors with local branches – layers of decision making – but it can be done. Some market actors /need/ a lot of scale. Restaurant Depot – SoCal gas couldn't get them to participate. Launched throughout northeast and then could get them there and across the country – enough scale for them.
- **Q: For the Carrier representative, what works from your perspective?**
  - *A: From the manufacturer point of view, important to be considered as a market actor not a reactor. The more you allow manufacturer to run their business in interaction with the utility it is highly encouraging and makes us want to be more involved. People in the front lines can make those proposals to the end user. Over the entire country as we move from midstream to even aggressive upstream it allows for best practices, influencing the right*

measures. System approaches rather than just a piece of equipment. Meeting new IAQ standards and such in response to COVID. Replace something that is more efficient because we have to replace right now. Lots of opportunity in encouraging manufacturer to be more a part of the process.

- **Q: Howard can you speak of Grundfos and Daikin?**
  - A: What Daniel and Brian discussed, this carries down to distributors. We had a HP circulator pump program in 2016, had a 10k% increase. Started as a pilot with Grundfos exclusively. Program exploded. Major manufacturer of pumps was resistant and had no efficient products. Today that manufacturer is very active in EE and participating in most industry conferences. Instrumental in the next phase of the pump programs. With Daikin they have brought engineers in to VT to learn about cold climates to a feedback loop to R&D in the Pacific Rim to work on product designs. These programs wouldn't realize the same before and after increase without this broad inclusion.
- **Q: [Andy Vaughn] For HVAC, does it work better for incentives to upstream or further down the chain?**
  - A: [Howard Merson] Upstream programs have their place in a supply chain/service delivery model. Distributors are resistant to upstream because it lowers the price for manufacturer but not them, so it can affect the distributor's gross profits. In retail market, buydowns work well, but on the whole upstream model doesn't work as well for distributor
  - A: [Daniel Cornejo] Carrier has different distribution for different technologies. Upstream for the direct-to-market products different than distributor model. There are applications for both.
  - A: [Brian from Carrier] Crawl-walk-run strategy. Any utility looking at where to best market and promote. What is the equipment, how much is it going to be incentivized for and is it standard or custom, and who gets the money? If you can answer those questions, you will get our sales folks engaged. Problem is that for every utility and manufacturer those are different. There are lots of ways people go to market. As you go up the channel, upstream is where the ability to influence sales channels and create a better business model. More understanding of what the incentive is and how to promote that downward to the sellers. Makes it more transactional. Unitary distributors or applied are very different. At POS, you have to understand exactly what is offered. The further up the food chain, the more market influence.
- **Q: [Chris Neme] How do you deal with a program design given that manufacturers have different business models e.g. Lennox direct to contractors vs. distributors – how do you design around differences like that to allow everyone to participate? Do you have experience with “market uplift” models that pay for the increase in sales over a benchmark versus paying for the “free riders” when you pay for every unit sold?**
  - A: [Daniel Cornejo] To first part, how do you design a program? For Energy Solutions, we believe in working with the market for impacts. Let the market compete. We're not going to design something that is as creative as what the market does. Example of distributor design where they could use the incentive however, they want and different ways that different actors competed. It's about market share for them, and if you aren't winning you are losing. Your design has to allow for the most participation and the most cost effective and that's it. Opening the uplift question to the floor.
  - A: [Jim Hanna] The uplift question is complicated. Short answer is we're seeing it now, we saw it in 2002-3. Driver for equipment sales is low first cost.

If you take the incentive away, you get code minimum or lowest cost. There are some existing sales, but predominantly what the market does in the absence of incentive is to go back and sell code minimum.

- A: [Howard Merson] Regarding Lennox, specifically, as long as each of the market actors are willing to participate manufacturer rep can act like a distributor. As long as they can participate in the terms and conditions of the program, let them. Manufacturer with different model based on equipment size, some of it is distributor some is manufacturer rep. Doesn't matter if they are different.
- **Q: [Ted Weaver] Have you taken this approach with Lennox?**
  - A: [Daniel] Yes they participate in all our programs across the country. Depends on state and market. Some where they won't because of rules and conditions, but we try to design to get the whole market.
- **Q: [Jim Jerozal] If utility is upstream to distributor or manufacturer, how does the customer know that the utility was even involved? How is that overcome, or do you just deal with it? Lost in the shadows?**
  - A: [Jim Hanna] Customer touch-point – what customers received benefits from high efficiency go back to 900% solutions slide -slide 2 – customer touchpoints definition changed from awareness to did they receive an energy and cost savings benefit. Benefit bigger than the distributor was getting. Eliminated the issue with customer touchpoints.
  - A: [Daniel Cornejo] In 2004-5 HVAC/motors program there were downstream fliers for distributors to give to customers about energy benefits compared to the one-time rebate, Howard could you speak to how VEIC handles it?
  - A: [Howard Merson] In VEIC, VT and coast-to-coast, 11 step program SMIT: sales, market, inventory and training. Manufacturers stepping in. Designing stickers and labeling. “Special pricing by Efficiency Vermont” on cartons. Leave behinds. Mechanical room door hangers. Postcards thanking customer for purchase. Website collaboration so distributors and manufacturers and incentivized models are represented on product lists. Enhance the touchpoints for the midstream model with messaging into the marketplace. The manufacturers know their best approaches, so work with them. Leverage their strategies with your core competencies.
  - A: [Daniel Cornejo] Varies by utilities. West Coast utility incentives to distributors – runs with the distributor gets incentive, customer gets the benefit. East Coast utility didn't feel they got enough branding, went to a more midstream POS model and savings decreased but met that customer branding goal. Southwest example – manager had no success on downstream, but they worked better with midstream. Cross promote with other programs. Different by utility.
- **Q: [Jim Jerozal] In Illinois, we have a gas heating program that is large. If you were to go mid-up to move from 15-20k furnaces we do today to 90x that, it would take the whole budget. Gas portfolio has a spending cap. Are these examples portfolios that are ‘all uncapped’ with no size limit? Our budget cap creates start-stop concerns.**
  - A: [Daniel Cornejo] There are some states with the regulatory environment will take as many savings as they can get, no cap. Others want to thread the needle – right at 100%. Able to accomplish that. Varies. In terms of furnaces, lots of potential there. Didn't run that midstream with SoCal gas – interest but it never got off the ground.

- A: [Howard] Very involved with capped programs. Three levers we can control. Incentives need advanced messaging, 12 months out, indicate changes in incentives ahead so we don't undermine current efforts. Strategic. Another aspect is SPIFFs to distributor, to lower or increase over time too. Third lever is outreach and marketing. Manage those over time.
- A [Daniel Cornejo]: Residential and commercial programs are different. Inspections are different. A lot more customers and the inspection item has to be addressed. A good suggestion that works with HVAC is early retirement – mature markets like IL and CA as opposed to booming new construction markets (e.g. NV). Before and after measures, design considerations, but can limit and control budgeting better. Weighing cost-effectiveness.
- A: [Daniel Cornejo, jump to slide 24] Downstream and upstream cost comparison isn't necessarily apples to orange. When you compare cost effectiveness true midstream vs early retirement. You can design a program midstream for lifetime or first year savings, to meet your needs. Scale and size.

### **Additional Information on Midstream/Upstream Programs**

- Ease administrative burden – short answer is pay fast and be reliable. Give them transparent, streamlined tools. Online application portal. Streamlined application process, limit the amount of “extra” data needed from sales process.
- Co-existence. Downstream tends to close down when you have midstream. Different ways of dealing with it to prevent overlap. Screening, deemed savings, data transfers and sort the overlaps to one program or the other. Recommended to avoid overlapping programs but it's manageable depending on goals.
- **Q: [Chris Neme] Water heater residential market, would have to have parallel streams because half come through contractors and half come through big boxes. Is that right? Midstream to plumbers and downstream to big box?**
  - A: [Howard Merson] We have parallel programs like that in VT. When we started, downstream had a 4-month head start. Introduced the wholesale distribution rebate. Shifted marketplace, lifted marketplace. Most sales are going through the distributor model now. Moral, instant rebate shifted heavily to the distributor model. Client's objectives to get both sectors, then build the program that way. On paper, a market transformation strategy should go through both channels.
- **Q: [Ted Weaver] Same rebate in both channels, what does that mean?**
  - A: [Howard Merson] 9/10 of sales are through plumbing distributor channel, even though with the same \$ value incentive per unit in Vermont which should give a competitive advantage to the retailer.
- **Q: End of chain contractors – if they lose a direct rebate because of midstream, are they happy?**
  - A: [Howard Merson] They are happy. They don't have to message or sell it into the market. The transaction and completion of forms and time element are out. They see the lift from selling a non-baseline product. They are getting gross profit. They like it.
  - A: [Daniel Cornejo] Less than a handful of complaints. Always a couple, though. Take products upstream and take services downstream. Get the whole supply chain involved. Some contractors will complain.
- **Q: [Chris Neme] What does take services downstream mean?**
  - A: [Daniel Cornejo] Contractors provide services – tune ups, SEM, etc. Get involved with customers over lifetime of equipment usage.

## Evaluation Considerations

- Evaluation, NTG results stand up – better NTG favorable or better than downstream. Xcel CO example.
- Evaluation methodology – reach out to the market actors participating in the program. Communicate to EM&V the program logic. Up-front evaluation plan so results reflect.
- It's not like lighting with just ZIP codes, it's installation address. Not a problem with leakage, everything is in-service.
- Cost performance similar in \$/therm for gas for WH and food service. Electric HVAC has similar lifetime \$/kWh.

## Recommendations for Illinois

- 11 step approach outlined in slides. 2 steps highlighted.
- Profit model – retailers vs wholesalers. RONA Return on Net Assets. If you move a technology from baseline, the top half of the formula. It's their kind of talk. Turn inventory so supply chain isn't holding inventory. Collaborate with manufacturer and distributor and sales and marketing. Decrease or turn inventory on the bottom of the equation. Leverage automation to lower AR by distributing incentives faster than their collection time. Increase cash flow for distributors.
- Distributor value proposition. Standard pump gross profit \$13. Gross profit for high performance with incentive is \$44.75. Increase margin as well. 244% increase example.
- Map the supply chain with NEEA. Top 4 (7%) distributors were 55% of the locations. So strategy was to work with those top companies. Market followed.
- Create value proposition for everyone.
- Customer engagement strategies, leverage those
- Couple codes & standards with Midstream. C&S program is most cost-effective in CA portfolio. Midstream primes that market. Needs a regulatory change. Reap the rewards by creating a codes pathway.
- All utilities: Short term recs: make a goal, implement a pilot; medium term: diversify, go statewide
- Gas recs: Plumbing right now, less food service. Work through cash-and-carry shops and design-build. POS foodservice programs to complement.
- Elec recs: Launch elec HVAC. Need to include rooftop RTUs for AC. Heat pumps, air cooled chillers, etc. Refrigeration supply chain.
- Dual gas & electric: You get the best of both worlds.

## Closing & Next Steps

- If there are any questions for the guest presenters, please feel free to reach out directly:
  - Howard Merson, VEIC: [hmerson@veic.org](mailto:hmerson@veic.org)
  - Daniel Cornejo, Energy Solutions: [dcornejo@energy-solution.com](mailto:dcornejo@energy-solution.com)
- Next meeting: Tuesday, June 2 (10:00 am – 12:00 pm)