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**From:** Romero Aguero, Julio E. (Chief Inno. and Transformation Officer) <romeje@jea.com>  
**Sent:** Friday, February 22, 2019 12:13 PM  
**To:** Dykes, Melissa H. - President/COO  
**Cc:** Zahn, Aaron F. - Managing Director/CEO; Wannemacher, Ryan F. - Chief Financial Officer  
**Subject:** RE: Presentations - Panel at ISGT

Thanks Melissa,

Yes, this is an excellent point.

For this reason, the metrics task of status quo 2 should include a comparison of how the industry is moving in terms of investments per customer, this we discussed with McKinsey yesterday. Grid modernization is a major endeavor at key utilities around the country, e.g., SCE, Duke Energy, Entergy, Dominion, etc. This includes not only progressive utilities, even utilities that historically have been very conservative are getting on board, for instance, this is a very recent announcement by Ameren Missouri: <http://ameren.mediaroom.com/2019-02-15-Ameren-Missouri-releases-plan-to-transform-states-energy-grid-to-benefit-customers-and-communities-1>, they just filed a plan with their regulator that includes \$5.3B in capital investments, \$1B in wind energy, significant investments in sensors, smart meters, etc., and they are cutting rates by 6%:

This type of analysis will help us justify the need for status quo 3, and to help us convey the message that although status quo 2 might seem like a feasible option, it would move JEA in the opposite direction than most of the industry.

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**From:** Dykes, Melissa H. - President/COO <dykemh@jea.com>  
**Sent:** Friday, February 22, 2019 7:43 AM  
**To:** Romero Aguero, Julio E. (Chief Inno. and Transformation Officer) <romeje@jea.com>  
**Cc:** Zahn, Aaron F. - Managing Director/CEO <zahnaf@jea.com>; Wannemacher, Ryan F. - Chief Financial Officer <wannrf@jea.com>  
**Subject:** Re: Presentations - Panel at ISGT

Dominion's investment figures are staggering. They're substantially larger than we are, but even scaled down by 1/15th the numbers are still higher than anything I'm seeing in our plans.

# Grid Transformation (GT) Plan

## Investment Categories

Advanced Metering Infrastructure (AMI)	Customer Information Platform (CIP)
 <p><b>Asset Description</b></p> <ul style="list-style-type: none"> <li>2.1 Million Smart Meters</li> <li>AMI Network Infrastructure</li> </ul>	 <p><b>Asset Description</b></p> <ul style="list-style-type: none"> <li>Customer Information System</li> <li>Customer Preference Center</li> <li>Customer Facing Applications</li> <li>Data Analytics</li> </ul>
<p><b>Program Overview</b></p> <ul style="list-style-type: none"> <li>Total Capital: \$478M</li> <li>Deployment: Five Years</li> </ul>	<p><b>Program Overview</b></p> <ul style="list-style-type: none"> <li>Total Capital: \$185M</li> <li>Design and Implementation: 4.5 years</li> </ul>



**Total Investment Categories Capital ≈ \$:**



On Feb 19, 2019, at 3:46 PM, Romero Aguero, Julio E. (Chief Inno. and Transformation Officer) <[romeje@jea.com](mailto:romeje@jea.com)> wrote:

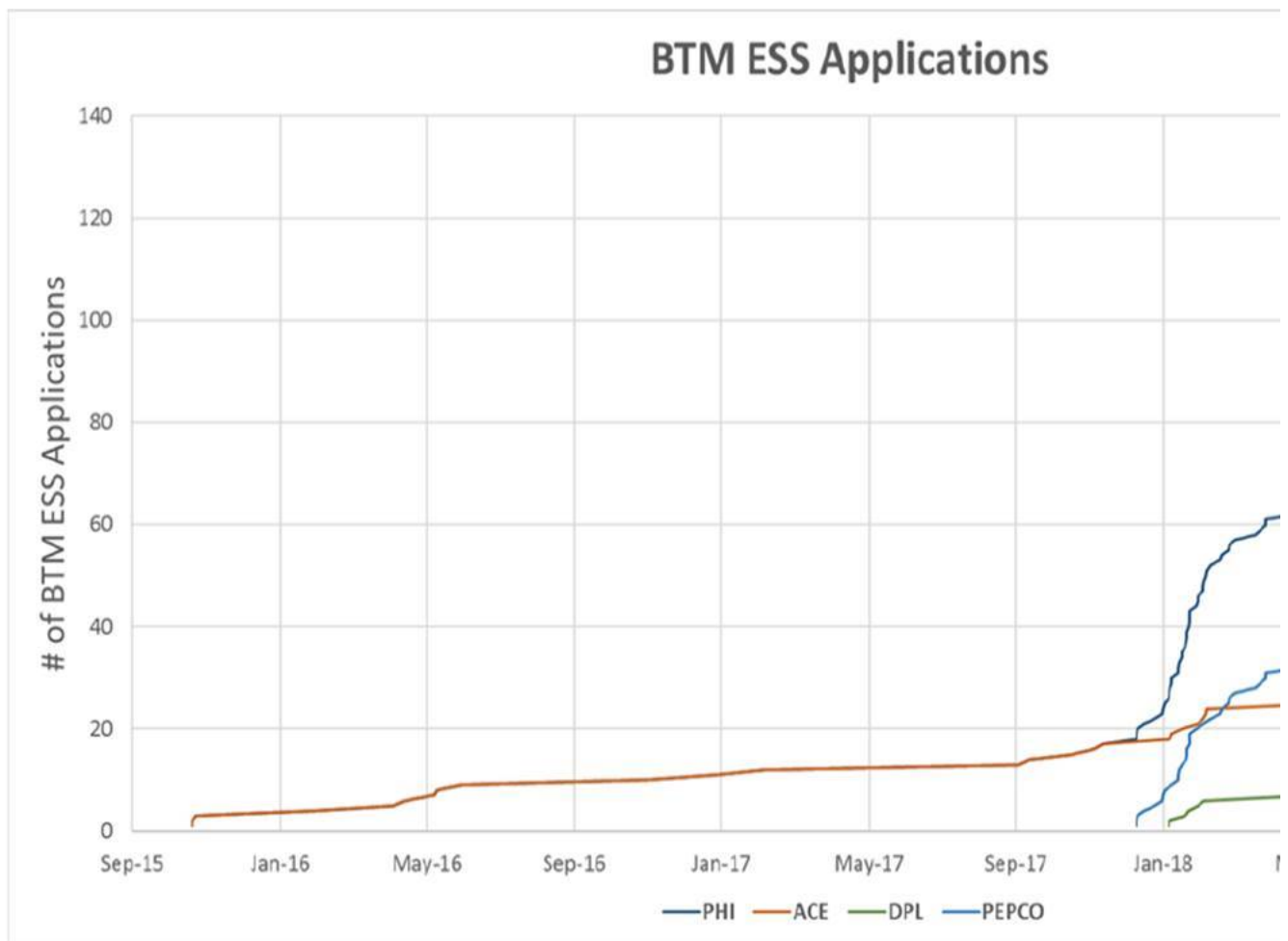
FYI,

These are the presentations of the plenary session I moderated yesterday at the Innovative Smart Grids Technologies conference.

The figure below is extracted from Miguel Ortega's presentation (Miguel is VP of Technical Services at Pepco Holdings Inc.), it shows the number of applications of behind-the-meter energy storage systems (BTM ESS) received by PHI's operating companies (Delmarva Power, Pepco, and Atlantic City Electric) in the last couple of years. BTM ESS adoption is starting to exhibit the exponential growth trend typical of disruptive technologies. This is really insightful, Miguel mentioned that they were surprised to learn this.

An important point is that these results are based on customers self-reporting installation, there might be additional systems that have not been reported.

# As Grid Modernization cc



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<2. Riley.pdf>

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<4. Ortega.pdf>