STATE OF ILLINOIS

ILLINOIS COMMERCE COMMISSION

COMMONWEALTH EDISON COMPANY

Petition for Statutory Approval of a Smart Grid
Advanced Metering Infrastructure Deployment Plan
Pursuant to Section 16-108.6 of the
Public Utilities Act

) Docket No. 12-0298

INITIAL BRIEF OF THE

PEOPLE OF THE STATE OF ILLINOIS

The People of the State of Illinois

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The People of the State of Illinois, by and through Lisa Madigan, Attorney General of
the State of Illinois ("the People" or the "AG"), pursuant to Part 200.800 of the Rules of
Practice of the Illinois Commerce Commission ("the Commission"), 83 Ill.Admin.Code Part
200.800 and the schedule established by the Administrative Law Judges, hereby file their
Initial Brief in the above-captioned proceeding.

I. INTRODUCTION

In October of 2011, the General Assembly passed legislation that authorized an electric
utility or a combination utility serving more than 1,000,000 customers in Illinois
(Commonwealth Edison Company ["ComEd" or "the Company"] and Ameren Illinois Company,
respectively) to have their rates set by the Commission according to a formula, as specified in
Section 16-108.5 of the Public Utilities Act ("the Act"), contingent upon the utility committing
to undertake certain smart grid and reliability investments, including digital automated metering infrastructure, otherwise known as AMI. 220 ILCS 5/16-108.5.  

ComEd submitted an AMI Plan that raises several critical concerns related to the evaluation of costs and benefits of the Plan, as well as ComEd’s current and planned activities linked to customer disconnections for nonpayment. The Company’s cost-benefit analysis assigns specific dollar benefits to fewer truck rolls related to remote disconnections, including those made for nonpayment. Current Commission rules require that the utility shall attempt to advise the customer that service is being discontinued by making contact with the customer “at the time service is being discontinued.” See 83 Ill.Admin.Code Part 280.130. This important requirement for an attempt at in-person notification must be retained in a post-AMI environment.  

In addition, from a health and safety perspective, the Plan raises a critical red flag given the significantly increased numbers of customer disconnections for nonpayment that the evidence shows will occur with the enabling of the remote disconnect capability of AMI and ComEd’s undefined existing and proposed customer notification requirements associated with those disconnections. The People and AARP presented significant evidence through both expert testimony and cross-examination that revealed (1) an inability by ComEd to discuss with any precision the current and yet-to-be-determined customer notification processes for customer

1 The new statute describes the special rate treatment as:

a performance-based formula rate approved by the Commission, which shall specify the cost components that form the basis of the rate charged to customers with sufficient specificity to operate in a standardized manner and be updated annually with transparent information that reflects the utility’s actual costs to be recovered during the applicable rate year, which is the period beginning with the first billing day of January and extending through the last billing day of the following December.

220 ILCS 5/16-108.5(c). The statute also includes provisions regarding the ratemaking treatment of various components of the formula, including capital structure, 220 ILCS 5/16-108.5(c)(2); cost of equity, id. at (c)(3); an earnings collar, id. at (c)(5); various “protocols” or ratemaking factors, such as treatment of incentive compensation, pension and post-employment benefits expenses, severance costs, amortization over five years of costs that exceed $10 million, and allocation methods for common costs. Id. at (c)(4)(A)(B)(C)(F) & (I).
disconnections related to nonpayment, both now and under ComEd’s AMI Plan; (2) claims of irrelevance related to AG/AARP calls for Commission guidance on customer notification requirements; (3) ComEd’s failure to follow current notice requirements under the existing Part 280 rule related to customer disconnections for nonpayment; (4) the significant health and safety risks associated with the ComEd-documented increased numbers of disconnections for nonpayment that are expected to occur under a remote disconnection environment; and (5) a troubling nonchalance from the Company about the need to acknowledge and minimize these health and safety risks. The People urge the Commission to provide the guidance that ComEd’s evidentiary presentation makes clear it needs on the need to retain a site visit at the time of disconnections for nonpayment to ensure that the AMI Plan is compliant with existing Part 280 Commission rules regarding necessary customer notice at the time of such disconnections – particularly in light of the significant increases in disconnections that the Company predicts will occur in a post-AMI environment.

With regard to the costs and benefits assumed by the Company, the evidence shows that ComEd has failed in its burden under Section 16-108.6(c) of the Act to prove that their AMI Plan is cost-beneficial to customers. According to ComEd’s own projections, customers will not receive a cumulative net positive impact from the AMI Plan until 2021. More importantly, the critical inputs of the Black &Veatch (“B&V”) cost/benefit review (ComEd Ex. 6.02), such as the discount rate, time horizon analyzed and avoided power costs, to name a few, were supplied to B&V evaluators by ComEd, and are either flawed or lacked support and independent verification by the evaluators, as discussed below. AG witness Hornby – the only witness to review multiple inputs to the ComEd cost/benefit analysis concluded that the AMI Plan is only marginally cost-beneficial when analyzed for a case which reflects currently effective customer notification

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2 See ComEd Ex. 6.02, Table A-4, line 31.
disconnection regulations, and the use of a reasonable discount rate and time horizon for the net present value (“NPV”) analysis of the Plan. For all of these reasons, the Commission should reject the ComEd AMI Plan as filed.

Finally, should the Commission choose to take the leap of faith that ComEd requests and approve the Plan, the evidence supports Commission modification of the Plan in a few key respects in order to increase the benefits to both the customers, who it must be highlighted will be paying for the AMI, and the Company. First, the evidence shows that ComEd has failed to sync in any way its planned reliability distribution automation (“DA”) projects detailed in *Commonwealth Edison Company’s Infrastructure Investment Plan* (filed with the Commission on January 6, 2012) with its AMI Plan. This is problematic given the Company’s recognition of significant benefits tied to AMI related to outage management and improved efficiency during storms. For example, the AMI system includes the ability to provide near real-time outage status for the electric meters. ComEd Ex. 6.02 at p. 4-5. Since the AMI system includes the ability to provide near real-time outage status for the electric meters as described above, the information can be used to improve current outage condition detection during major storms, according to the Company’s cost/benefit analysis. *Id.* at 4-6.

In addition, the Company should be required to modify its planned geographic deployment of AMI to coordinate its schedule of distribution automation and reliability improvement with AMI rollout in the various ComEd regional operating centers, in order to optimize improvements in reliability with the installation of advanced meters. Second, the Company should be required to offer a new optional (opt-in) Time-of-Use (“TOU”) rate in addition to its proposed new Peak Time Rebate (PTR) in order. A new TOU rate would increase the value of the AMI plan to customers who have the flexibility to shift some portion of their use
from peak periods to off-peak periods. Further, customers have the ability to save more money over a year by taking service under a TOU rate than by participating in PTR.

II. STANDARD OF REVIEW UNDER SECTION 16-108.6 OF THE PUBLIC UTILITIES ACT

When ComEd filed its formula rate tariff earlier this year in ICC Docket No. 11-0721, it committed to undertake certain smart grid and reliability investments specified in Section 16-108.5(b) of the Act, one portion of several amendments to the Public Utilities Act referred to as the Energy Infrastructure and Modernization Act (“EIMA”). That provision allows ComEd to request the special formula rate treatment upon committing to invest an estimated $1.3 billion in electric system upgrades, modernization projects, and training facilities, including, but not limited to:

(A) over a 5-year period, invest an estimated $1,300,000,000 in electric system upgrades, modernization projects, and training facilities, including, but not limited to:
   (i) distribution infrastructure improvements totaling an estimated $1,000,000,000, including underground residential distribution cable injection and replacement and mainline cable system refurbishment and replacement projects;
   (ii) training facility construction or upgrade projects totaling an estimated $10,000,000;
   (iii) wood pole inspection, treatment, and replacement programs; and
   (iv) an estimated $200,000,000 for reducing the susceptibility of certain circuits to storm-related damage, including, but not limited to, high winds, thunderstorms, and ice storms; improvements may include, but are not limited to, overhead to underground conversion and other engineered outcomes for circuits; the participating utility shall prioritize the selection of circuits based on each circuit’s historical susceptibility to storm-related damage and the ability to provide the greatest customer benefit upon

3 “...provided that, at a minimum, one such facility shall be located in a municipality having a population of more than 2 million residents and one such facility shall be located in a municipality having a population of more than 150,000 residents but fewer than 170,000 residents; any such new facility located in a municipality having a population of more than 2 million residents must be designed for the purpose of obtaining, and the owner of the facility shall apply for, certification under the United States Green Building Council’s Leadership in Energy Efficiency Design Green Building Rating System.” 220 ILCS 5/16-108.5(b).
completion of the improvements; to be eligible for improvement, the participating utility's ability to maintain proper tree clearances surrounding the overhead circuit must not have been impeded by third parties;


In addition, ComEd must commit to invest over a 10-year period, an estimated $1.3 billion to upgrade and modernize its transmission and distribution infrastructure and in Smart Grid electric system upgrades, including, but not limited to:

(i) additional smart meters;
(ii) distribution automation;
(iii) associated cyber secure data communication network; and
(iv) substation micro-processor relay upgrades.

220 ILCS 5/16-108.5(b)(1)(A),(B)\(^4\)

Under Section 16-108.6 of the Act, after consultation with the Smart Grid Advisory Council\(^5\), ComEd was required to file a Smart Grid Advanced Metering Infrastructure Deployment Plan ("AMI Plan") with the Commission within 180 days after the effective date of

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\(^4\) The investments in the infrastructure investment program described in this subsection (b) shall be incremental to the participating utility's annual capital investment program, as defined by, for purposes of this subsection (b), the participating utility's average capital spend for calendar years 2008, 2009, and 2010 as reported in the applicable Federal Energy Regulatory Commission (FERC) Form 1; provided that where one or more utilities have merged, the average capital spend shall be determined using the aggregate of the merged utilities' capital spend reported in FERC Form 1 for the years 2008, 2009, and 2010. A participating utility may add reasonable construction ramp-up and ramp-down time, not to exceed a total of six months, to the investment periods specified in this subsection (b).

\(^5\) Pursuant to Section 16-108.6 of the Act, the Smart Grid Advisory Council consists of "9 total voting members with each member possessing either technical, business or consumer expertise in Smart Grid issues, 5 of whom shall be appointed by the Governor, one of whom shall be appointed by the Speaker of the House, one of whom shall be appointed by the Minority Leader of the House, one of whom shall be appointed by the President of the Senate, and one of whom shall be appointed by the Minority Leader of the Senate. Of the Governor's 5 appointments: (i) at least one must represent a non-profit membership organization whose mission is to cultivate innovation and technology-based economic development in Illinois by fostering public-private partnerships to develop and execute research and development projects, advocating for funding for research and development initiatives, and collaborating with public and private partners to attract and retain research and development resources and talent in Illinois; (ii) at least one must represent a non-profit public body corporate and politic created by law that has a duty to represent and protect residential utility consumers in Illinois; (iii) at least one must represent a membership organization that represents the interests of individuals and companies that own, operate, manage, and service commercial buildings in a municipality with a population of 1,000,000 or more inhabitants; and (iv) at least one must represent an alternative
EIMA. The AMI Plan, under the statute, shall provide for “investment over a 10-year period that is sufficient to implement the AMI Plan across its entire service territory in a manner that is consistent with subsection (b) of Section 16-108.5” of the Act. Subsection (b) provides that The AMI Plan shall contain:

(1) the participating utility's Smart Grid AMI vision statement that is consistent with the goal of developing a cost-beneficial Smart Grid;

(2) a statement of Smart Grid AMI strategy that includes a description of how the utility evaluates and prioritizes technology choices to create customer value, including a plan to enhance and enable customers' ability to take advantage of Smart Grid functions beginning at the time an account has billed successfully on the AMI network;

(3) a deployment schedule and plan that includes deployment of AMI to all customers for ComEd and to 62% of all customers for a participating utility that is a combination utility;

(4) annual milestones and metrics for the purposes of measuring the success of the AMI Plan in enabling Smart Grid functions; and enhancing consumer benefits from Smart Grid AMI; and

(5) a plan for the consumer education to be implemented by the participating utility.

220 ILCS 5/16-108.6(b).

Section 16-108.6 also requires that the AMI Plan “shall be fully consistent with the standards of the National Institute of Standard and Technology (NIST) for Smart Grid interoperability that are in effect at the time the participating utility files its AMI Plan, shall include open standards and internet protocol to the maximum extent possible consistent with cyber
security, and shall maximize, to the extent possible, a flexible smart meter platform that can accept remote device upgrades and contain sufficient internal memory capacity for additional storage capabilities, functions and services without the need for physical access to the meter.”

220 ILCS 5/16-108.6(c). The AMI Plan must also “secure the privacy of personal information and establish the right of consumers to consent to the disclosure of personal energy information to third parties through electronic, web-based, and other means in accordance with State and federal law and regulations regarding consumer privacy and protection of consumer data.” Id. "Personal information" for this purpose consists of the customer's name, address, telephone number, and other personally identifying information, as well as information about the customer's electric usage. 220 ILCS 5/16-108.6(d). This subsection further provides that:

Electric utilities, their contractors or agents, and any third party who comes into possession of such personal information by virtue of working on Smart Grid technology shall not disclose such personal information to be used in mailing lists or to be used for other commercial purposes not reasonably related to the conduct of the utility's business. Electric utilities shall comply with the consumer privacy requirements of the Personal Information Protection Act. In the event a participating utility receives revenues from the sale of information obtained through Smart Grid technology that is not personal information, the participating utility shall use such revenues to offset the revenue requirement.

220 ILCS 5/161-08.6(d).

While Staff’s, Intervenors’ and indeed the Commission’s ability to provide meaningful review of any AMI Plan filed by a participating (formula rate) utility is limited by a 60-day review period, the Act nevertheless requires that certain threshold, minimum standards be satisfied. The Commission can issue an order approving or approving the Plan with modification “if the Commission finds that the AMI Plan contains the information required in paragraphs (1) through (5) of this subsection (c) and further finds that the implementation of the AMI Plan will
be cost-beneficial consistent with the principles established through the Illinois Smart Grid Collaborative\textsuperscript{6}, giving weight to the results of any Commission-approved pilot designed to examine the benefits and costs of AMI deployment.” 220 ILCS 5/16-108.6(c) (emphasis added).

Under Section 16-108.6(a) of the Act, “cost beneficial is defined as:

\begin{quote}
a determination that the benefits of a participating utility's Smart Grid AMI Deployment Plan exceed the costs of the Smart Grid AMI Deployment Plan as initially filed with the Commission or as subsequently modified by the Commission. This standard is met if the present value of the total benefits of the Smart Grid AMI Deployment Plan exceeds the present value of the total costs of the Smart Grid AMI Deployment Plan. The total cost shall include all utility costs reasonably associated with the Smart Grid AMI Deployment Plan. The total benefits shall include the sum of avoided electricity costs, including avoided utility operational costs, avoided consumer power, capacity, and energy costs, and avoided societal costs associated with the production and consumption of electricity, as well as other societal benefits, including the greater integration of renewable and distributed power resources, reductions in the emissions of harmful pollutants and associated avoided health-related costs, other benefits associated with energy efficiency measures, demand-response activities, and the enabling of greater penetration of alternative fuel vehicles.
\end{quote}

220 ILCS 5/16-108.6(a).

It is important to note that once an AMI Plan is approved, there are certain cost implications for both the utility and ratepayers. The statute provides that if approved, “[a] participating utility's decision to invest pursuant to an AMI Plan approved by the Commission shall not be subject to prudence reviews in subsequent Commission proceedings.” \textit{Id}. That being said, the Act provides that “[n]othing in this subsection (c) is intended to limit the Commission's ability to review the reasonableness of the costs incurred under the AMI Plan.” \textit{Id}. A participating utility shall be allowed to recover the reasonable costs it incurs in implementing a

\textsuperscript{6} The People request that the Commission take administrative notice of the Illinois Statewide Smart Grid Collaborative Report pursuant to 83 Ill. Admin.Code Part 200.640.
Commission-approved AMI Plan, including the costs of retired meters, and may recover such costs through its tariffs, including the performance-based formula rate tariff approved pursuant to subsection (c) of Section 16-108.5 of the Act. Accordingly, absent any showing of unreasonableness of the costs incurred in any AMI plan, the utility’s decision to invest in the smart meters as described in the plan is not subject to subsequent prudence reviews. This means that Commission approval of the ComEd AMI Plan is its primary venue for evaluating, guiding and, if need be, modifying ComEd’s AMI Plan.

III. COMED’S AMI PLAN PROPOSAL

ComEd Director of Regulatory Compliance Louis Harris presented the ComEd AMI Plan, attached to the Company’s initiating Petition, and introduced other ComEd witnesses testifying on the Plan. The Company hired the Black & Veatch consulting firm, to help assemble and present a cost/benefit analysis of the ComEd AMI Plan. Key economic inputs were supplied by ComEd to witness Andrew Trump, a consultant at B&V, who presented what he described as a “high-level overview” of the “potential operational-related benefits and related costs” of the ComEd AMI Plan in his Direct Testimony. ComEd Ex. 6.0 at 1.

In the opening chapter of the ComEd Plan, the Company states, “While the requirement to deploy AMI is legislative and peremptory, it was not enacted unilaterally or hastily.” ComEd AMI Plan at 2. The People will resist the urge to engage ComEd in a debate as to how and why EIMA was enacted, or whether the provisions of EIMA were produced collaboratively and with a sense of necessary reflection given the unprecedented investment that ratepayers have been required to fund should the AMI Plan be approved. However, the People will note that what is both regrettable and undeniable is that the end result of the passage of EIMA, at least as it

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7 ComEd witnesses O’Toole, Eber and Montague presented details related to AMI operations and deployment, demand response proposals and customer information plans, respectively. ComEd witness Stephen Braithwaite supplied a separate analysis of the benefits associated with anticipated demand response customer activity.
impacts this docket, is a 60-day review process that leaves neither the Commission, its Staff nor intervenors in a position to assess in any kind of deliberative or thorough manner the costs and benefits of AMI investment that exceeds a billion dollars in cost, to be funded solely by ratepayers.

Exactly two individuals attempted to assess the economic inputs of the cost/benefit analysis presented by the Company within these time constraints: Staff witness David Brightwell and AG witness J. Rick Hornby. These witnesses had exactly 14 business days to analyze the 100-page cost/benefit analysis, including the Black & Veatch proprietary model, review discovery and draft written testimony. While Staff witness Brightwell concluded that the ComEd AMI proposal was cost-beneficial under various discount rate inputs and including a site visit in disconnection for nonpayment situations, he also admitted that he had not had time, given the time constraints inherent in this docket, to review or assess other inputs in the ComEd analysis. Staff Ex. 2.0 at 8.

AG witness Hornby concluded that, even if one accepts all of the Company’s projections, the benefit cost ratio of the AMI Plan is only marginally greater than 1. He testified that if the actual value of any of these benefits proves to be materially less than the Company’s projections, the actual net benefits to customers will be correspondingly less. The very real possibility that future actual benefits may be lower than the projections in Exhibit 6.02 raises the concern that continued review necessary to monitor whether the Plan is operating as expected. AG Ex. 3.0 at 16.

Critical inputs of the B&V cost/benefit review (ComEd Ex. 6.02), such as the discount rate, time horizon employed and avoided power costs, to name a few, were supplied to B&V evaluators by ComEd, and are either flawed or lacked support and independent verification by
the evaluators, as discussed below. The AMI Plan is only marginally cost-beneficial when analyzed for a case which reflects currently effective disconnection customer notification regulations, the use of a reasonable discount rate and time horizon for the net present value (“NPV”) analysis of the Plan. For all of these reasons, the Commission should reject the ComEd AMI Plan as filed, as discussed further in part III.C below.

A. Informational Requirements

As noted earlier in this Brief, the Company must comply with several informational requirements in order to gain Commission approval of its AMI Plan. A utility filing an AMI Plan must submit the following:

1. Statement of Smart Grid AMI Vision

2. Statement of Smart Grid AMI Strategy

3. Deployment Schedule and Plan

4. Annual Milestones and Metrics

5. Consumer Education Plan

220 ILCS 5/16-108.6(b). A discussion of each of these Plan components follows.

1. **Statement of Smart Grid AMI Vision**

ComEd’s AMI Plan contains a Vision statement, as required by the Act. The People do not take issue with this portion of the Plan, except as otherwise reflected in this Brief.

2. **Statement of Smart Grid Strategy -- ComEd’s Plans for Activation of Remote Disconnect Technology**

As noted above, among the strategies ComEd describes in its Plan is its intention to activate the remote connect/disconnect switch in the AMI meters installed over the relevant
10-year performance metric period. In addition, the Company’s cost-benefit analysis assigns specific dollar benefits to fewer truck rolls related to remote connections and disconnections, including those made for nonpayment. ComEd Ex. 6.02 at pp. 4-5, 4-6. For example, the B&V cost/benefit analysis assumes a reduction in bad debt of $695 million over a 20-year period. *Id.* *Id.* at p. 4-8. In ICC Docket No. 11-0772, ComEd also made clear that its assumed performance metrics filed in that docket assume that “that there is no requirement for personal on-site disconnection notification.” ICC Docket No. 11-0772, ComEd Ex. 2.0 at 11; Tr. at 24. Conspicuously absent, however, is any assessment of the negative customer and societal impacts associated with the increased number of disconnections for nonpayment resulting from remote disconnect capabilities. With regard to potential “negative impacts,” the B&V report states, “Consumer and public health and safety concerns, as identified in the ISSGG report, are out of the scope of the cost and benefit analysis presented here.” ComEd Ex. 6.02 at p. 3-2. Cross Ex. 10, which detail the City of Chicago’s concerns about the impact of increased customer disconnections associated with remote disconnection capability on City of Chicago resources, provide a glimpse of the health, safety and welfare issues impacted by the change in technology. See Cross Ex. 10.

This strategy for the use of remote disconnection technology as it relates to the Company’s disconnections of residential customers for nonpayment is cause for Commission concern and action. The Commission’s current Part 280.130(d) clearly states that the utility shall attempt to advise the customer that service is being discontinued by making contact “at the time service is being discontinued.” See 83 Ill.Admin.Code Part 280.130(d). This important requirement for an attempt at in-person notification is in addition to a requirement that if disconnection cannot be accomplished "during a call made at the customer's premise," the utility
shall attempt to leave a notice "at the premise or billing address" informing the customer that
disconnection was attempted and their service continues to be subject to disconnection. *Id.*

Specifically, the current Part 280.130(d) “Discontinuance of Service” rule reads:

A utility shall attempt to advise the customer that service is being discontinued by directing its employee making the disconnection to contact the customer at the time service is being discontinued. When the utility is unable to discontinue service during a call made at the customer’s premise, the utility shall attempt to leave a notice at the premise or billing address information the customer that an attempt to discontinue service has been made and that his/her service continues to be subject to discontinuance.

83 Ill.Admin.Code Part 280.130(d).

Both the General Assembly and the Commission have declared that reliable electric service is essential to the health, safety and welfare of the citizens of the State of Illinois. 220 ILCS 5/1-102, 1-102(d)(i); 83 Ill.Admin.Code Part 411.10(a)(3). In various orders, the Commission has repeatedly emphasized the value it places on retaining a site visit and customer contact at the time of disconnections for nonpayment. As recently as May 29, 2012, the Commission declared that the site visit and customer contact at the time of electric and gas utility disconnections for nonpayment is essential to maintain the important health and safety goals associated with having essential utility service. In Ameren Illinois Company’s Performance Metrics Docket, ICC Docket No. 12-0089, the Commission endorsed the view that in-person contact with a customer who is about to be disconnected for nonpayment is essential in order to provide a last attempt at notice of the impending disconnection:

…the Commission wishes to make clear that regardless of the technical capabilities of a meter, the on-site contact and premises visit shall be retained, given the existing language of Section 280.130(d) and the important consumer protections associated with this premise visit and final attempt to contact the customer prior to disconnection for nonpayment of a utility bill. The Commission continues to believe that Section 280.130(d) is an important
consumer protection that can prevent dangerous health and safety conditions due to the loss of essential electricity service. In support of this assertion, the Commission cites Docket No. 09-0263, which concerned ComEd’s AMI pilot program. At the present time Section 280.130(d) requires notice at a premise prior to disconnection for nonpayment. In the currently pending rulemaking concerning Part 280, a proposed order for the first notice rule has yet to be served. So, AIC will continue to be required to provide notice under Section 280.130(d). Therefore, in evaluating AIC’s compliance with the metrics and any penalties to be assessed, the Commission will review all of the information provided by AIC, and will require additional information that it deems necessary, to determine whether compliance with the Act and Commission rules, including Section 280.130(d), has taken place. Additionally, Rider MAP-M must be modified so that it is not inconsistent with the current Part 280.


Prior to this decision, the Commission likewise highlighted the necessity of the on-site visit prior to customer disconnection in ICC Docket No. 09-0263, Commonwealth Edison Company – Petition to approve an Advanced Metering Infrastructure Pilot Program and associated tariffs, in which the Commission established the financial and policy parameters of Commonwealth Edison Company’s (“ComEd”) AMI pilot first approved generally in Docket No. 07-0566. In its Order in Docket No. 09-0263, the Commission specifically directed ComEd to continue the practice of premise visits and customer contact, despite the installation of technology (AMI) that enabled remote disconnection, thereby reinforcing the importance of on-site visit and in-person contact at the time of disconnection for nonpayment of a utility bill. In doing so, the Commission denied ComEd's explicit request in its Brief on Exceptions in the case to make a contrary interpretation on this point. In that pleading, ComEd asked that the ICC strike language from the final order which recognized that a site visit is required in part because
of its value in detecting safety issues. In its Final Order, the Commission rejected ComEd's request to strike that language, choosing to explicitly continue its interpretation of the premise visit requirement as requiring an attempt at in-person contact, despite the technical capability for remote disconnection AMI created:

Commission Analysis and Conclusions

We agree with the AG/AARP, CUB and the IBEW insofar as remote disconnection should occur in a manner that is consistent with current Illinois law, the regulation cited above. The regulation, cited above, clearly contemplates a site visit by a utility employee upon disconnection. While we acknowledge that the language in this regulation may have contemplated the world as it existed before AMI technology, a site visit upon disconnection affords a valuable service to consumers, and, in certain circumstances, when a safety issue is detected upon the site visit) to ComEd. ComEd shall not remotely disconnect a program participant unless such disconnection is in accordance with 83 Ill. Adm. Code 280.130(d) and any other pertinent laws that are in effect at the time of disconnection.

Even though the current Part 280 rule was drafted at a time when a customer’s electric service could not be discontinued without a premise visit, the purpose of the rule is greater than recognition of mere technical limitations. The Commission’s restatement of the vital public health and safety goals that are furthered by maintaining the premise visit/in-person contact rule were clearly recognized in the Docket No. 09-0263 Order. The health and safety consequences of disconnection of energy service can trigger severe, adverse health consequences for older consumers, in particular, including death due to hypothermia or exposure to extreme heat, as discussed below. The “knock on the door” is important because phone calls and letters may not reach all customers who are vulnerable and who are facing potential disconnection.

8 Docket 09-0263, ComEd BOE at 34 (Exception #7).
9 Docket 09-0263, Order of October 14, 2009 at 34.
The People and AARP presented significant evidence through both expert testimony and cross-examination that revealed (1) an inability by ComEd to discuss with any precision the current and yet-to-be-determined customer notification processes for customer disconnections related to nonpayment, both now and under ComEd’s AMI Plan; (2) claims of irrelevance related to AG/AARP calls for Commission guidance on customer notification requirements; (3) ComEd’s failure to follow current notice requirements under the existing Part 280 rule related to customer disconnections for nonpayment; (4) the significant health and safety risks associated with the ComEd-documented increased numbers of disconnections for nonpayment that are expected to occur under a remote disconnection environment; and (5) a troubling nonchalance from the Company about the need to acknowledge and minimize these health and safety risks.

ComEd repeatedly states in its Plan that it will implement the remote disconnection function in compliance with ICC regulations. ComEd Ex. AMI Plan at 30, 37, 40. However, the Company failed to indicate with any clarity in testimony how it interprets Part 280’s customer notification requirements. ComEd witness Harris, who serves as the Company’s Director of Regulatory Compliance, confessed he was unfamiliar with how the Company currently notifies customers who are about to be disconnected for nonpayment both before and at the time of disconnection. Tr. at 39, 43-44. Mr. Harris was clear, however, in noting that ComEd has no plans to include a field visit and customer contact, such as a door knock, at the time of disconnection for nonpayment under the new AMI Plan. Tr. at 47-48.

In order to determine exactly how ComEd’s customer notice and disconnection process would change under the AMI Plan and to clarify how ComEd interprets “compliance with ICC rules”, the People and AARP sought to determine how ComEd currently provides notice to
customers at the time of disconnections for nonpayment. Mr. Harris referred those questions to ComEd witness Richard O’Toole, ComEd’s Director of AMI Deployment Plan. Tr. at 43-44.

Cross Ex. 1 is the Company’s response to an AG data request in which the Company was asked to detail the current notice and operational steps ComEd takes when it disconnects a customer for nonpayment. According to that response, customers who do not pay their bills on time receive a proactive telephone call reminding them of the need to make payment. Tr. at 107-108. If no payment is received by ComEd after a certain amount of time, ComEd sends those customers a disconnection notice. Tr. at 108. The customer then receives a remote, automated “field notification call” to notify them that a disconnection order is pending. Id. Assuming payment still is not received by ComEd, the revenue management department issues an order to disconnect the customer and sends it to the Field and Meter Services department. Id. at 109. Cross Ex. 1 states that the field technician verifies the correct address and, “upon entering the premises, announces his or her presence.” Id. Mr. O’Toole clarified that this language reflects a field technician walking onto a customer’s property, but was unclear as to what “announcing his or her presence” specifically referred. He clarified, however, that it this “announcement” of sorts is not a door knock or an attempt at actual customer contact at the time of disconnection. Tr. at 110.

ComEd’s vague description of its customer notification practices at the time of customer disconnections for nonpayment are in stark contrast to Ameren’s current practices, as noted by AG/AARP witness Barbara Alexander. That company, unlike ComEd, follows the on-site notification procedure outlined in Part 280-130(d) to the letter. When asked in an AG data request in Docket No. 12-0244 (Ameren’s Petition for Approval of an AMI Plan) “what procedures Ameren field personnel follow when disconnecting residential customers due to
nonpayment and what if any contact is provided to the residential customer subject to
disconnection at the time of disconnection,” the Company stated:

Customer contact is attempted before the actual physical
disconnection. The customer receives a bill which provides
all pertinent usage and balance information along with a due
date. If unpaid, the customer receives a disconnect notice in
accordance with Part 280 giving the past due balance and a
date in which it needs paid (sic) to avoid disconnection. The
notice contains literature describing payment arrangements,
assistance options, payment options, and the Call Center
phone number and hours of operation. Additionally, each
residential customer receives an automated call again
advising them of the balance and the date by which to pay.
Balance and payment information is available 24/7 both
through the phone system and on Ameren Illinois’ website.
After all attempts to solicit payment have failed, the
disconnection order is sent to the field to be worked. The
field technicians work from terminals in their vehicles which
operate in real-time. Any arrangements or payments made by
the customer update their systems immediately. Customers
are given up to the point of physical disconnection to make
payment and/or payment arrangements. Upon arriving at the
customer’s premises, the field technician attempts to make
contact by knocking at the door. If the customer is home, the
technician can speak with the customer and hand deliver a
door tag. That door tag gives the Call Center phone number,
website information, a phone number for Western
Union/Speedpay to make payments as well as a safety
message regarding the main breaker and pilot relight. If the
customer is not home, the technician will hang the door tag
at the customer’s front entrance.

AG/AARP Ex. 1.0 at 12-13. The important consumer protection justifications for the current
rule are set forth in the record of the pending Part 280 rulemaking docket, ICC Docket No. 06-
0703, and await both a Proposed Order and Commission action. Until that Order is issued, it is
imperative to direct ComEd to include a premise visit and in-person customer notification at the
time of disconnections for nonpayment in any AMI Plan approved by the Commission, similar to
the procedures followed by Ameren. To be clear, ComEd should be permitted to utilize the
remote disconnect technology. But the need to retain an on-site customer contact attempt at the time of disconnection remains critical to ensuring the health and safety of ComEd’s most vulnerable customers.

AG/AARP witness Dr. Megan Sandel, a Boston-based physician, public health specialist, Associate Professor in Pediatrics and Environmental Health at the Boston University School of Medicine and interim executive director of the National Center for Medical Legal Partnership, testified that remote disconnection capability inherent in AMI presents multiple health and safety challenges for ComEd’s most vulnerable customers.

The foundation for much of Dr. Sandel’s testimony is a report called the “Health Impact Assessment (“HIA”) of the ComEd AMI Deployment” (“ComEd AMI HIA”), released by the NCMLP and which Dr. Sandel co-authored on behalf of the NCMLP with Energy Programs Consortium Consultant Lynn Snyder, Kristin Munsch, J.D., of the Citizens Utility Board and Barbara Alexander, an independent consumer consultant. The HIA was conducted between July 2010 and April 2012 to examine the potential health impacts of AMI deployment based on the ComEd pilot. AG/AARP Ex. 2.0, 2.3.

The chief findings and recommendations of Dr. Sandel’s testimony regarding the ComEd AMI HIA pertain to the consumer protections related to residential electrical service, the need for monitoring of service status and costs for certain groups of households, and consumer education, as well as her own observations as a medical doctor and public health expert on the potential negative impacts of increased disconnections and homelessness associated with ComEd’s proposed remote disconnection practices in its AMI Plan.

Dr. Sandel described how the most vulnerable customers in ComEd’s service territory – the elderly, children under the age of five, people with chronic disabling conditions, the socially
isolated, and people for whom English is a second language – will be impacted by the implementation of AMI, particularly in connection with the remote disconnection capabilities inherent in AMI technology through the use of smart meters. She offered her opinion as a medical professional regarding the increased risks of unintentional injury and premature death that would result from ComEd’s proposed use of AMI technology for remote disconnection for nonpayment, and how these risks are amplified as a result of the increased pace of disconnections and the elimination of in-person contacts that ComEd anticipates will be part of AMI.

Using a patient care model developed under the auspices of the NCMLP, Dr. Sandel and the ComEd AMI HIA team’s analysis of the ComEd AMI plan described social determinants of health in ComEd’s service territory and assessed how AMI can be implemented in a way that will help vulnerable populations in that territory meet their basic needs and stay healthy.\textsuperscript{10} AARP/AG Ex. 2.0 at 5. The purpose of the ComEd AMI HIA was not to evaluate whether or not AMI meters should or should not be deployed, but to highlight the health and safety aspects of AMI for the Commission’s consideration as it reviews ComEd’s proposed AMI deployment plan so that AMI deployment maximizes its potential to promote health and minimizes the likelihood that consumers, especially those from households which struggle to pay utility bills, will be harmed. AARP/AG Ex. 2.0 at 13.

As Dr. Sandel testified, the ComEd AMI HIA found that the Company’s activation of AMI’s remote disconnection capability is “likely to influence the health of the Illinois population

\textsuperscript{10} As explained by Dr. Sandel, a health impact assessment is a systematic, data-driven approach to policy analysis that combines procedures, methods and tools to systematically evaluate “the potential, and sometimes unintended, effect of a policy, plan, program or project on the health of a population and the distribution of those effects within the population.” AARP/AG Ex. 2.0 at 10-11. An HIA identifies, prioritizes and evaluates health and safety impacts of policy decisions in order to make recommendations on how to minimize negative policy impacts and maximize positive impacts. HIAs have been used to evaluate the health and safety impacts of policy decisions in areas as varied as energy, education, housing, immigration, criminal justice and employment. AARP/AG Ex. 2.0 at 11.
given the connections between access to electrical service, health and safety, especially for residents of low- and moderate-income households.” AARP/AG Ex. 2.0 at 14. Regulators rarely have information about subsets of customers who might respond differently from average customers to deployments of new electric service technology, and the ComEd AMI HIA was designed to provide meaningful data regarding five groups of customers identified as “vulnerable.” Id. Those groups were: the very young (from birth to age 5), older individuals (age 65 and older), individuals with a functional disability such as impaired mobility, persons who are socially, isolated, and those who have limited English proficiency or literacy, including members of those groups who were not from low or moderate income populations. Id. at 15.

Although the ComEd AMI HIA looked at a variety of health determinants such as the effect of the cost of AMI deployment on vulnerable populations and how dynamic pricing programs impact electric energy usage patterns, Dr. Sandel’s testimony on the impact of remote disconnections for nonpayment on the vulnerable populations studied was the most compelling. The report included analysis of an evaluation of the AMI Customer Applications Pilot of 8,000 households (developed by the Electric Power Research Institute) and also of an evaluation of the costs and benefits predicted for AMI deployment (developed by Black & Veatch for the pilot). The study conducted an original analysis of existing data, including a health profile for the geographic areas included in the HIA, and also developed an analysis of new survey data emanating from a survey of LIHEAP applicants in the pilot territory and a Loyola University Medical Center survey of Maywood neighborhood residents regarding trade-offs between energy costs and basic needs. AARP/AG Ex. 2.0 at 22.

Dr. Sandel reported that the HIA found that AMI deployment has four major negative health implications for the subgroup of customers that were the subject of the study.
Specifically, as detailed in Appendix B of this Brief, AMI will impact vulnerable populations in ComEd’s service territory through:

- Unintentional injuries and premature deaths from disconnected service;
- Fuel poverty from higher electricity costs;
- Temperature-sensitive conditions made worse by exposure to heat or cold; and
- Health impacts related to the AMI technology itself.

Id. at 27; Appendix B (AARP/AG Ex. 2.1). Dr. Sandel identified the dangers of remote disconnection as having the most significant negative health implications for ComEd’s customers. The ComEd AMI HIA report estimates that electrically powered medical devices such as nebulizers and sleep apnea machines are used by an estimated 20% of the low-income households in ComEd’s service territory. AARP/AG Ex. 2.0 at 30. Any policy that renders medically necessary equipment inoperative turns nonpayment into a life-or-death situation for the affected customer, especially if it is to be carried out without regard to consumer protections regarding advance notification and in-person contact with the customers.

A more common but no less dangerous potential by-product of remote disconnection is the negative health impact resulting from the use of alternative, risky sources for heating and light, or from the deprivation of all energy sources. The use of candles for light and cook stoves and portable non-electric space heaters (especially unvented models) for heat are linked to increased incidents of asthma, fires, neurological disorders and even death. AARP/AG Ex. 2.0 at 31. One study reviewed for the ComEd AMI HIA found heating equipment to be the single most common cause of fires and space heaters (mostly kerosene) as the cause of 58% of fatal fires and 30% of non-fatal fires. Id. Inadequately cooled or heated homes are more likely to trap moisture and result in mold growth, which research estimates more than doubles the likelihood that children will develop asthma. Id. Gasoline-fueled generators used to provide electricity or heat present the threat of poisoning or death from carbon monoxide, an invisible,
deadly gas. Exposure to carbon monoxide cause also causes effects ranging from headache and nausea to come and death, with long-term neurological effects for those who survive exposure. Young children, the elderly and people with cardiovascular disease are more sensitive than the average person to the effects of carbon monoxide. *Id.*

Dr. Sandel summarized her opinion on the most threatening dangers of remote disconnection:

Based on the ComEd AMI HIA literature reviews, there are documented risks for fires, deaths, and severe morbidity such as unnecessary hospitalization related to loss of electricity from remote disconnection for nonpayment. Though fuel poverty from higher bills is also a potential negative health impact for some customers, it is not as severe a health risk as the risk of hospitalization, fires or death related to loss of electricity for non-payment.

Remote disconnection for nonpayment presents a clear threat to health and safety if consumer protections are not retained, specifically with regard to the current consumer protection that requires a premise visit and attempted in-person contact with someone at the residence at the time of disconnection. This consideration is especially important for consumers who are at greater risk of falling into arrears on their electricity bill. In my opinion as a medical health professional, both the premise visit and the attempted contact with the utility customer are important for health and safety, given the severe health consequences from loss of electricity.

AARP/AG Ex. 2.0 at 37.

Finally, the health impacts related to temperature-sensitive conditions made worse by exposure to heat or cold are not insignificant. Sandel testified that remote disconnection (as well as under-consumption of electric energy due to financial constraints) can expose at-risk individuals to temperature extremes that can result in illness, hospitalization or premature death related to hyperthermia (heat exposure), hypothermia (cold exposure), or the aggravation of existing health conditions that are temperature-sensitive. AARP/AG Ex. 2.0 at 32. Sandel cited a meta-analysis of studies linking winter outdoor temperatures to cardiovascular and respiratory disease that concluded that between 30% and 50% of premature deaths occurring in winter were
the result of exposure to indoor cold. Specific groups of ComEd customers are at increased risk for heat and cold-related illnesses, including the very young (7.2% of households), the elderly (11.2% of households) and especially the socially isolated (the 31.6% of all low-income seniors in the Chicago area living independently), as well as those who live with a mobility-limiting disability.

The ComEd AMI HIA makes five recommendations for Commission action with respect to AMI deployment:

1. Analyze proposed terms of deployment with respect to clearly defined groups and at-risk customers, including analysis of the likely impacts on health and safety.
2. Proposed cost recovery from electric customers should link benefits and costs for vulnerable customers specifically, in addition to linking benefits that are documented and realized for all customers.
3. Proposed time-based pricing programs for AMI should offer incentives for vulnerable households to optimize their use of electricity from the perspectives of health as well as of energy efficiency.
4. The remote connection and disconnection functionality of AMI, especially in the case of involuntary loss of service for nonpayment, must be deployed to promote and not endanger the health and safety of vulnerable customers.
5. Any AMI deployment and programs that seek customer engagement to make use of the new metering and communication system should be accompanied by robust consumer education and outreach to customers to obtain their awareness of and participation in approved programs.

In its explanation of the Reduction in Bad Debt Expense calculation, the B&V report states that the functional requirements to achieve this benefit include, “Enablement of remote disconnect/reconnect switch. Also, new business rules for cut off thresholds (time and dollar outstanding based).” This analysis also states that the use of the disconnect switch to “disconnect sooner in the cycle” will result in an estimated increase in disconnections from 124,597 in 2010 to 205,000 disconnections, the bulk of which is related to residential customers. B&V estimates a new bad debt expense level of $33 million (compared to the $63 million in
2010) with this remote disconnection functionality. AG Ex. 1.0 at 9-10, citing ComEd Ex. 6.02 at pp. C-8, C-9.

As noted by AG/AARP witness Alexander, while the Part 280.130(d) provision of current regulations was drafted and has been implemented during an era when the customer’s meter could not be physically disconnected or connected without a premise visit, there are other important consumer protections associated with this premise visit and attempt to contact the customer prior to disconnection for nonpayment, all of which are set forth in the GCI and AARP testimony before the Commission in Part 280.

In its decision in ICC Docket No. 11-0772, ComEd’s Petition for Approval Approval of Multi-Year Performance Metrics pursuant to Section 16-108.5(f) and & (f-5) of the Public Utilities Act, the OAG and AARP recommended that the Company be required to detail how the on-site notification requirement impacted the Company’s ability to meet the performance metrics required by Section 16-108.5 of the Act. Although the Commission opted to reject that recommendation, it stated: “The Commission will be reviewing all of the information provided by the Company to determine whether compliance with the Act and Commission rules has taken place.” Order of April 4, 2012 at 16-17. ComEd’s AMI Plan has been filed, and the undisputed evidence shows that ComEd (1) currently does not attempt customer contact at the time of disconnection; 2) has no plans in place that detail how customer disconnections for nonpayment will occur under a post-AMI environment; and (3) the remote disconnection feature of AMI will be enabled under the Company’s Plan.

The record is replete with the potential public health and safety concerns that remote disconnect technology brings to ComEd’s service territory. It is undisputed that under a post-
AMI environment, the number of disconnections for nonpayment will rise significantly. See ComEd Ex. 6.02 at 4-8. ComEd is literally banking on it. For example, the B&V cost/benefit analysis assumes a reduction in bad debt of $695 million over a 20-year period. Id. The Commission must direct ComEd to take the necessary steps to minimize the health and safety impacts associated with remote disconnection by (1) ordering ComEd to immediately begin complying with Part 280.130(d) and incorporate a site visit and door knock customer notification requirement to its current disconnection for nonpayment procedures.

As noted by AG/AARP witness Alexander, Illinois would not be the first state to require that a utility deploying AMI retain a customer site visit at the time of disconnections for nonpayment. Several states have rejected proposals to eliminate important consumer protections associated with disconnection of service for nonpayment for residential customers in the context of considering AMI deployment and the use of the remote disconnection functionality of this system for both pilots and full scale deployment, including New York, Ohio and Maryland. AG/AARP Ex. 1.0 at 15-17. These states, Ms. Alexander reported, have rejected proposals to eliminate these consumer protections even though such rejection has resulted in lower savings associated with AMI on the grounds that the disconnection of residential customers may result in dangerous health and safety conditions due to the loss of essential electricity service. Indeed, the very foundation of the current consumer protection rules is the notion that disconnection of electricity carries important health and safety consequences.

3. Deployment Schedule and Plan

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11 The Black and Veatch report states in the Doorknock Sensitivity analysis that 193,000 disconnect actions would potentially require a customer notification visit each year and that this premise visit level would rise with the installation of smart meters to 200,000 per year in year. ComEd Ex. 6.02 at p.10-3.
In its proposed AMI Plan, ComEd argues that its AMI Pilot “demonstrated the potential of AMI technology to transform utility operations.” ComEd AMI Plan at 6. ComEd argues, for example, that “[F]ull deployment as proposed here will further improve operational efficiency and will also enable and support other technologies that improve reliability (e.g., automated outage notification and restoration confirmation) and transform grid planning and operations (e.g., ability to measure voltage along the entire length of a feeder, better transformer loading predictions, integration with intelligent distribution automation devices).” Id.

Consistent with this claim, ComEd’s B&V cost/benefit analysis ascribes significant monetary benefits to AMI’s ability to notify the Company that outages have occurred. According to ComEd witness Trump, approximately $75.6 million in benefits are attributed to AMI’s outage management recognition capabilities and “single-lights-out trips,” according to Table A-1 of ComEd Ex. 6.02. In particular, the C/B analysis states:

4.7 OUTAGE MANAGEMENT

Benefits in the form of avoided operating costs are estimated to accrue in the area of outage management. The analysis assumes that the AMI system will allow for fewer trips to premises for what are commonly referred to as “single lights out” field trips. The AMI system includes the ability to provide near real-time outage status for the electric meters. The Smart Meters provide power status information in two ways—automatically and upon request. The automatically generated information includes the power fail indication upon loss of power by the electric meter and power restoration indication upon restoration of power at the meter. Additionally, the AMI system provides the capability for a user or application, such as ComEd’s Outage Management System (OMS), to generate an on-request service to query the power status of a particular meter or group of meters.

Because of this capability, it is anticipated that ComEd will experience fewer “OK on Arrival” occurrences (i.e., customers that had a power outage that was restored on a separate, previous outage ticket) and will not need to send a first responder to the field needlessly to address customer outage tickets that result in
positive power status verification. ComEd will now be able to ascertain near real-time power status via a query to the AMI system or via automatically provided power status indication that will more accurately reflect the current state of restoration activity and allow resources to be utilized more efficiently. The capability will also reduce costs to all customers to confirm power restoration.

ComEd Ex. 6.02 at p. 4-5 (emphasis added). The report also ascribes separate benefits to a savings category identified as “Improved Efficiency During Storms”:

4.8 OUTAGE MANAGEMENT—IMPROVED EFFICIENCY DURING STORMS

Since the AMI system includes the ability to provide near real-time outage status for the electric meters as described above, the information can be used to improve current outage condition detection during major storms. Maintaining accurate, current outage assessment and repair activity information represents the biggest challenge during storms. With the ability to automatically, or on request, receive outage information from meters throughout the system, the ComEd OMS can more effectively track and manage the actual outage conditions. This ability allows improved internal and external outage communications with ComEd’s storm center. Through a better understanding of the state of the system during major storms, ComEd should be able to more effectively deploy and coordinate emergency restoration resources. Improved efficiency and coordination should translate into decreased time allotted for storm restoration and savings in overtime and contractor expenditures.

Id. (emphasis added).

Despite these significant benefits assigned to AMI deployment, ComEd argues that tying its AMI geographic deployment decisions to its distribution automation investments outlined in its January 2012 Infrastructure Investment Plan and other annual reliability investments that occur outside of that investment commitment is “irrelevant” to the Company’s AMI deployment decisions. ComEd made it clear in testimony and discovery responses that is not now and has no
intention of coordinating the deployment of its investments in AMI with its investments in Distribution Automation outlined in its Infrastructure Investment Plan filed with the Commission in January of this year. AG Ex. 3.0 at 19; AG Ex 3.5. Not surprisingly, AG witness J. Richard Hornby found this to be troubling, if not nonsensical, given the alleged benefits associated with AMI’s outage detection capabilities. While ComEd’s investments in Distribution Automation, in and of themselves, will help it reduce the frequency of outages, ComEd’s investments in AMI will provide specific outage information to its DA, such that their combined impact will enable the Company to make a greater improvement in service reliability. Part 411 of the Commission rules establishes the guidelines and parameters for measuring an electric utility’s reliability performance. Listed among the principles for guiding reliability investments is the need for those investments to be “evaluated considering the costs and benefits of the improvements to the jurisdictional entity and to customers.” 83 Ill. Admin. Code Part 411.10(a)(2).

As noted by AG witness Hornby, ComEd has the potential to provide greater value to customers sooner by coordinating its AMI Plan deployment with its DA deployment. While he acknowledged that “there are numerous constraints and tradeoffs the Company has to consider in setting its schedules for AMI and DA deployment,” he testified that it is important that the Company demonstrate that it is coordinating those deployment schedules in order to balance the need to expedite improvements in service reliability in the operating regions of its system with the worst service reliability while also achieving maximum cost reductions earlier rather than later.” AG Ex. 3.0 at 19.

Given AMI’s outage detection capability, AMI deployment decisions should be made in conjunction with a review of the Company’s infrastructure reliability investments required under Section 16-108.5 of the Act, as well as the Company’s performance under the System Average
Interruption Frequency Index ("SAIFI") and Customer Average Interruption Duration Index ("CAIDI") metrics, so that distribution system areas most troubled by outages and other service interruptions have the benefit of this remote detection capability. The Company’s Plan, however, not only omits such an analysis, but also criticizes Mr. Hornby for not offering his own deployment strategy based upon ComEd reliability and investment data. ComEd Ex. 8.0 at 10. That response is hardly a basis for rejecting the recommendation. Indeed, the burden in this docket is not on intervenors to devise an infrastructure investment strategy that is integrated with an analysis of ComEd’s reliability weaknesses in its 19 operating centers -- particularly in light of the 60-day statutory deadline. It is ComEd, not Intervenors, who possesses the reliability data it needs to craft a deployment strategy that makes sense from a reliability perspective.

Given the significant expense ratepayers will be asked to bear in the next 10 years associated with ComEd’s investment in AMI and other smart grid technologies, Mr. Hornby’s recommendation simply makes economic sense. In addition, requiring the integration of distribution automation deployment plans, reliability patterns and AMI investment will ensure that those ratepayers who choose not to, or are unable to, participate in dynamic pricing programs will derive tangible benefits in the improved reliability of ComEd’s delivery of electric service.

Both Ameren and ComEd have been imploring the Commission for years to guarantee cost recovery of smart grid investments, including AMI, promising innumerable reliability and cost-saving benefits to customers. See, for example, ICC Docket Nos. 07-0566, 09-0263 (ComEd); 07-0585 through 07-0590 (cons.), Order of September 24, 2008 at 239-240 (Ameren). At the behest of ComEd and Ameren, the General Assembly approved smart grid legislation last year that not only ensures cost recovery of smart grid investments, but guarantees annual
recovery and reconciliation in customer rates of all reasonable utility expenses, including a pre-determined and essentially guaranteed rate of return. Yet, when it comes to detailing an deployment strategy, ComEd appears to have not invested much time in considering what constitutes the most cost-beneficial, practical method of ensuring all customers – not just those who might engage in demand response and dynamic pricing -- actually obtain some benefit from these meters.

In accordance with the purpose of the Commission’s electric reliability assessments pursuant to Part 411 of the Commission’s rules and the need and desire to ensure maximum benefits from the hundreds of millions of dollars in AMI investment ratepayers are being required to fund under Section 16-108.5 and 16-108.6 of the Act, the Commission should order the Company to demonstrate that it is coordinating distribution automation investments required by Section 16-108.5(b) of the Act with its AMI deployment schedules in order to balance the need to expedite improvements in service reliability in the operating regions of its system with the worst service reliability. This directive, too, will help achieve maximum cost reductions associated with reduced outage- related truck rolls earlier rather than later. This recommendation is a common sense imperative to ensure that all of ComEd’s customers benefit from the proposed AMI investment plan, and should be adopted by the Commission.

4. Annual Milestones and Metrics

ComEd provides a list of milestones and metrics at pages 75 – 78 of its Plan, and discusses them more specifically in chapters 2, 3 and 4 of the Plan, depending upon whether they relate to operations, customer application, or education, respectively. ComEd AMI Plan at 4. While these represent the minimum statutory criteria, the Commission retains the authority to
modify ComEd’s Plan, should the Commission reject the People’s recommendation to reject the ComEd cost/benefit analysis for the reasons discussed in section III.C of this Brief, below.

CUB and ELPC focused their testimony on increasing Commission monitoring of the achievement of demand response benefits and other metrics, nearly all of which ComEd has agreed to include in its Plan. See CUB/ELPC Ex. 1.0, gen’ly. While tracking and encouraging participation in demand response programs that offer the potential to lower customer usage has the potential to improve the realization of alleged AMI customer benefits, the People and AARP believe that even more important at this juncture is that the Commission ensures that AMI does no harm. The fact that significantly higher rates of disconnections are enabled through AMI technology through a metaphorical “flip of the switch,” the threat of negative health and public safety impacts associated with these increases in disconnection is all too real. Accordingly, AG/AARP witness Barbara Alexander presented several proposed metrics to the Commission with the idea of ensuring that, first and foremost, customers are not harmed by the deployment of AMI and that alleged benefits associated with the technology are monitored so that the promises associated with AMI are, in fact, realized.

Those measures include requiring ComEd to conduct statistically valid separate surveys of its residential customers in Chicago specifically and in areas served outside Chicago on an annual basis to obtain the following information for low income and each of the customer groups that meet the definition of “vulnerable” customers in the HIA Report. This information should be gathered for customers whose AMI meters are activated and those without the new metering system to see if there is a difference in customer response. Ms. Alexander recommended these metrics include:
(1) Bill impacts associated with the costs for deployment of smart grid modernization and AMI investments for low, average, and higher usage level customers for each of these customer groups pursuant to approved rates and surcharges;

(2) Participation by such customer groups in the Company’s web portal and the results of such participation on customer usage;
(3) Participation by such customer groups in the Company’s future PTR program;
(4) Participation by such customer groups in the hourly pricing program;
(5) Traditional indicia of credit and collection programs, such as deposit requirements, issuance of disconnection notices, and disconnection for nonpayment.

AARP/AG Ex. 1.0 at 22-23.

Furthermore, Ms. Alexander recommended that the Company should be encouraged to make changes in its current procedures, where it is determined to be cost effective, to better target disconnections earlier in the collection cycle and engage and more proactive outreach through electronic communications and telephone attempts prior to sending the field technician for the required premise visit. She noted that there are many potential improvements or reforms that could reduce uncollectible expense and offset the increased costs associated with a premise visit, without relying on remote disconnection to compel immediate payment. The Company’s current policies may allow customers to build up large arrears balances prior to disconnection, but that is a function of its current collection policies and decisions about the allocation of resources and how it chooses to deploy field personnel and manage collection activities. The Company’s assumption that a vast increase in the volume of disconnections will occur as documented in the Black and Veatch analysis has important safety and health implications that this Commission may want to take into account when considering the proposal to change the current regulation in the Part 280 proceeding. However, in the context of this proceeding, Ms. Alexander urged the Commission to reject that portion of this AMI deployment plan (and
cost/benefit analysis) that relies on the use of remote disconnection for nonpayment for residential customers as a means of generating additional revenues or lowering operating expenses. At the very least, there is a need to explore in more detail ComEd’s assumptions about the linkage between faster and increased disconnections earlier in the collections cycle, and the direct and indirect implications of this proposal on the ability of residential customers in general and vulnerable customers in particular to obtain and retain affordable and essential electricity service, as discussed in the Annual Milestones and Metrics section below.

In addition, Ms. Alexander recommended the use of several metrics and reporting requirements adopted in Maryland as conditions for full-scale deployment of AMI. Exhibit AARP/AG 1.4 is the approved Phase I Reporting Plan in effect for Baltimore Gas & Electric and Potomac Electric Power Co. in Maryland for their respective AMI deployments. These reporting requirements reflect the deployment phase of this multi-year program. Additional metrics and reporting requirements are being developed for Phase II, relating to the implementation of customer benefit programs, such as the PTR program that both Maryland utilities will implement in 2013. Ms. Alexander recommended that the Commission require ComEd to comply, at a minimum, with the metrics and reporting requirements already approved for the Maryland utilities. She also recommended that the Commission order ComEd to consult with the parties to this proceeding to develop additional metrics and reporting requirements that will reflect its proposed customer benefit programs within the next six months or prior to the implementation of those programs. In this latter category she recommended that the Company be required to document the impact of its proposed enhanced web portal on customer usage and the future PTR program on customer peak load reduction in a statistically valid manner. In both programs, the

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12 The People, of course, do not object to reliance on remote disconnect as a means of achieving operational efficiencies associated with CIM and UFE.
Company should be required to document and report the impact of these programs on the bills of participating customer and on all customers in the form of lower electricity prices. AARP/AG Ex. 1.0 at 20-21.

Should the Commission approve ComEd’s AMI Plan, these common sense metrics aimed at ensuring the maximization of alleged customer benefits under AMI should be adopted.

5. Consumer Education Plan

ComEd witness Jennifer Montague presented the Company’s Consumer Education Plan associated with AMI rollout. ComEd Ex. 4.0. The People do not take issue with this Plan, except to endorse the customer education modifications proposed by City of Chicago witness Karen Weigert, particularly with respect to her proposed recommendations to modify customer outreach and education programs to customers at-risk for disconnections. See City of Chicago Ex. 1.0 at 15-16.

B. Technical Criteria

1. NIST Standards for SG Interoperability

Although the Plan indicates that ComEd will select a vendor that complies with NIST Standards for Smart Grid Interoperability, the People note that less than one year ago on July 19, 2011, the Federal Energy Regulatory Commission issued an Order dismissing a potential rulemaking on smart grid interoperability standards. In its “Order on Smart Grid Interoperability Standards,” the FERC stated:

In this order, we find insufficient consensus to institute a rulemaking proceeding at this time to adopt the five families of standards. Going forward, we encourage utilities, smart grid product manufacturers, regulators, and other smart grid stakeholders to actively participate in the NIST interoperability

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framework process\textsuperscript{1} to work on the development of interoperability standards and to refer to that process for guidance on smart grid standards.

In footnote 1, the FERC explained:

The NIST interoperability framework process includes the work and outputs of a number of groups and events organized by NIST to achieve the goal of an interoperable smart grid. These groups include the Smart Grid Interoperability Panel (SGIP) along with its committees and working groups. Outputs include the NIST Framework and Roadmap for Smart Grid Interoperability Standards, Release 1.0, NIST Special Publication 1108 (Jan. 2010), available at http://www.nist.gov/public_affairs/releases/upload/smartgrid_interoperability_final.pdf; Guidelines for Smart Grid Cyber Security, NIST Interagency Report 7628 (Aug. 2010), available at http://csrc.nist.gov/publications/PubsNISTIRs.html; and various documents related to new or modified standards produced by Priority Action Plan working groups. These materials along with descriptions of the various groups, their memberships, tasks, and timelines can all be accessed at http://collaborate.nist.gov/twikisggrid/bin/view/SmartGrid/WebHome.

RM11-2-000, 136 FERC ¶ 61,039.

At this point, there does not appear to be a nationally recognized standard for NIST smart grid interoperability. The ComEd Plan should accurately reflect that there is no single NIST interoperability standard, and that compliance with NIST standards may require modification of its Plan upon adoption of a uniform standard.

2. Cyber Security

As noted in Part II of the Brief, \textit{supra}, Section 16-108.6 of the Act requires that the AMI Plan “shall be fully consistent with the standards of the National Institute of Standard and Technology (NIST) for Smart Grid interoperability that are in effect at the time the participating utility files its AMI Plan, shall include open standards and internet protocol to
the maximum extent possible consistent with cyber security, and shall maximize, to the extent possible, a flexible smart meter platform that can accept remote device upgrades and contain sufficient internal memory capacity for additional storage capabilities, functions and services without the need for physical access to the meter.” 220 ILCS 5/16-108.6(c).

According to the Illinois Statewide Smart Grid Collaborative report:

One key feature of a smart grid is its ability to capture and transmit information about system conditions and customer usage in near-real-time. The vast quantity of data made available by smart grid technology contains significantly more and new private information about individual consumption and consumer behavior. That information must be protected from unauthorized collection, release, sharing, use or retention.

Illinois Statewide Smart Grid Collaborative Report at 146. The Act, as well as the ISSGC, identify several considerations that an AMI plan should set forth in order for the Commission to approve the plan. ComEd’s plan appears to acknowledge the existence of those considerations and no evidence suggests that the Company is not prepared to address cyber security and privacy concerns.

3. Privacy of Personal Information Protections

ComEd presents its plans for protection of consumer data in Chapter 3 of its AMI Plan, in particular at pages 71-73. ComEd states that it plans to “permit consumers to consent to the disclosure of personal energy information to third parties through electronic, web-based, and other means in accordance with state and federal law and regulations regarding consumer privacy and protection of consumer data. Therefore, any applications discussed previously that will provide individual data to third parties, such as the “Green Button” web initiative, will require direct consent from the customer before any data is transmitted by ComEd to the third
party.” ComEd AMI Plat at 71-72. The People do not take issue with ComEd’s commitment to ensure that customer usage data is released only when the customer authorizes it.

That being said, the devil is in the details. In any order issued in this docket or in a future order approving a modified ComEd AMI Plan, the Commission should require that ComEd provide a report detailing information about the Green Button initiative and other instructions to ensure that ratepayers do not unwittingly authorize the access to personal information, including demand data, real time usage data and other personal information.

C. Cost/Benefit Analysis

As noted in part II of this Brief, infra, whether an AMI plan is “cost beneficial,” as established by both the Act and the Illinois Statewide Smart Grid Collaborative (“ISSGC”), is a threshold requirement for the Commission’s approval of ComEd’s AMI plan. 220 ILCS 5/16-108.6(c). An AMI plan is cost beneficial, in part, if the “present value of the total benefits of the Smart Grid AMI Deployment Plan exceeds the present value of the total costs of the Smart Grid AMI Deployment Plan.” 220 ILCS 5/16-108.6(a). ComEd asserts that its AMI plan is “consistent” with the ISSGC underlying principles and overwhelmingly cost-beneficial. See e.g., ComEd Ex. 1.0 at 18 (Harris Direct). A review of the ISSGC Report and the record evidence suggests otherwise, as discussed further below.

The ISSGC Report, filed with the Commission in October of 2010, finds that “The major elements or ‘building blocks’ of any cost-benefit analysis, including this cost-benefit framework, are the estimated costs and benefits associated with the investment and the discount rate used to calculate the present value of future cost and benefit streams.” ISSGC Report at 228 (emphasis added). Accordingly, the selection of an appropriate discount rate is critical to provide a meaningful assessment of the costs and benefits of smart grid investment.
As discussed below, all of the critical inputs associated with the B&V assessment, including the discount rate to be applied and assumed energy rates, were supplied by ComEd or Exelon employees to B&V without a meaningful, independent assessment of the appropriateness of these inputs by B&V. The record evidence supports specific rejection of the discount rate provided by ComEd and incorporated in the B&V study. Moreover, this lack of objective, third-party analysis suggests reliance on the B&V model, outputs and conclusions is suspect, and point to the need for Commission rejection of the Plan. At a minimum, the Company should be ordered to re-do its cost/benefit analysis using inputs that have been independently verified as reliable and trustworthy.

ComEd witness Trump presents B&V’s estimate of the cumulative values of 20 years of those projections in Table 1-2 in ComEd Exhibit 6.02. The Company modified those projections through a correction to an AG data request distributed to parties the day before Staff/Intervenor testimony was due on May 10, 2012. AG witness Hornby, who reviewed the B&V analysis and presented an assessment based on the corrected projections of costs and benefits, testified that the three largest sources of projected benefits from the AMI Plan, according to Table 1-2, are:

- reduction in unaccounted for energy ("UFE") and consumption at inactive meters 1 ("CIM");
- operational efficiencies and cost reductions; and
- reduction in bad debt expense.

According to that Table, the cumulative value of those projected benefits plus projected avoided capital expenditures is $4.613 billion. In contrast, the cumulative value of the projected costs of the AMI Plan over 20 years is $2.028 billion. Dividing the total benefits by the total costs produces a benefit to cost ratio of 2.3. The Table also indicates that the Net Present Value ("NPV") of benefits less costs over the 20 years is $1.251 billion. AG Ex. 3.0 at 6.

AG witness Hornby concluded that the ComEd/B&V results did not provide a reasonable estimate of the benefit-to-cost ratio of the AMI Plan or of its NPV. Id. He testified that his analysis
indicates that the ComEd results overstate the benefit to cost ratio of the AMI Plan and of the NPV for three reasons: First, the Base Case for which the Company has calculated these results does not reflect currently effective customer notification requirements. Second, the discount rates the Company used to calculate the benefit to cost ratio and the NPV under its Base Case are too low, leading to an inflated benefit/cost ratio. Third, the Company’s selection of a 20-year timeframe for its calculation of benefits and costs is too long. Id. Further, ComEd’s cost-benefit analysis, presented by Black & Veatch, lacks sufficient objectivity and rationales for key inputs to the cost/benefit analysis. As such, it should be rejected by the Commission.

1. **ComEd’s Base Case Cost/Benefit Analysis is Flawed Because it Assumes That No Site Visit is Required at the Time of Disconnections, for Nonpayment, Contrary to Existing Commission Consumer Protection Rules.**

As noted by Mr. Hornby, ComEd’s Base Case scenario is not representative of current conditions because, under Part 280.130(d) of the Commission’s rules, the Company must send an employee to notify, in person, any residential customer about to be disconnected for non-payment. The Base Case for which the Company has calculated its results assumes this regulation will be changed (or that no premise visit or in-person contact is required now) to allow the Company to notify such customers by phone and to disconnect the customer remotely via the remote disconnect switch capability of the smart meter. Thus, the Base Case results the Company presents in Table 1-2 do not reflect currently effective customer notification requirements. *Id.* at 5-6.

Black and Veatch prepared an estimate of results for a “sensitivity scenario”, which it refers to as the “Doorknock Sensitivity” under which the currently effective regulations remain in effect. The NPV of benefits minus costs for the Doorknock Sensitivity is 18% less than the corresponding NPV for the Base Case. The benefit to cost ratio is 14% less, at 2.0. *AG Exhibit 3.1 presents a comparison of the Company’s results for those two cases. Id.*
Given the existence of the on-site notification requirement of Part 280.130(d), the Commission should examine both the costs and benefits of ComEd’s AMI Proposal using an analysis that incorporates this sensitivity.

2. ComEd’s Selection of a Discount Rate of 3.087% in the Cost/Benefit Analysis Is Unsupported and Flawed, and Skews the Results of the B&V Study.

In addition, both the discount rates and time periods the Company used to calculate its Base Case results are a matter for discussion and interpretation because they are not defined explicitly in EIMA (or any other provision of the Act). As noted in part II of this Brief, Section 16-108.6(c) requires the Commission to determine if “… the implementation of the AMI Plan will be cost-beneficial consistent with the principles established through the Illinois Smart Grid Collaborative, giving weight to the results of any Commission-approved pilot designed to examine the benefits and costs of AMI deployment.” 220 ILCS 5/16-108.6(c). An AMI Plan meets the cost-beneficial standard if: “… the present value of the total benefits of the Smart Grid AMI Deployment Plan exceeds the present value of the total costs of the Smart Grid AMI Deployment Plan.” 220 ILCS 5/16-108.6(a). However, the Act does not specify either the discount rate or the number of years to be used to calculate that present value.

As explained by Mr. Hornby, the choice of a discount rate and a time horizon has a major impact on whether the AMI Plan under either the Doorknock Sensitivity or the Base Case will be, or not be, cost-beneficial. The impact on the benefit to cost ratio of those cases of a discount rate higher than the Company used and a time horizon shorter than the Company used is presented in Figure 1, the summary bar chart below, which is page 2 of AG Exhibit 3.2:
As indicated in Figure 1, the benefit to cost ratio of the Base Case drops from 2.3 under the Company’s discount rate and time horizon assumptions to 1.1 with a 10.05% discount rate and a 15-year time horizon. Similarly the benefit to cost ratio of the Doorknock Sensitivity drops from 2.0 to 1.0 using a 10.05% discount rate and a 15-year time horizon. Id. at 7-8.

Mr. Hornby testified that the choice of a discount rate has been less contentious in other AMI/smart grid plan approval proceedings as the sponsoring utility has typically proposed a discount
rate equivalent to its weighted average cost of capital (WACC) and parties have 12 generally accepted that proposal. *Id.* at 9.

ComEd’s selection of an unusually low 3.087% discount rate in the B&V study skews the results of the ComEd-sponsored cost/benefit analysis. In order to understand the importance of the selection of an appropriate discount rate in a cost/benefit analysis, it is first important to understand why discount rates are applied in these analyses. As explained by Mr. Hornby, present value can be defined as the value on a given date of a payment or series of payments made at other times. Analysts use a discount rate to calculate the present value of future benefits and costs in order to reflect the generally accepted view that a dollar to be received sometime in the future, e.g., ten years from now, is not worth the same as a dollar to be received today. This view is referred to as the time value of money. Even at today’s low interest rates, most people would prefer to have a dollar in their pocket today than to be promised a dollar ten years from now. *Id.* at 9.

Mr. Hornby explained that it is particularly important that the net present value of the AMI Plan be calculated using a reasonable discount rate because ComEd will start recovering the costs of the AMI Plan from customers years before customers see any material benefits from it. As indicated in Figure 6-1 of the B&V cost/benefit report (ComEd Ex. 6.02), ComEd projects that costs will exceed benefits during the first five years of the AMI Plan through 2016. Of even more importance is ComEd’s projection that customers will not receive a cumulative net positive impact from the AMI Plan for ten years, until 2021, as indicated on line 31 of Table A-4 of the B&V report. The fact that it will be ten years before customers are better off with the AMI Plan than without it, assuming the ComEd projections are accurate, is due to the fact that ComEd expects to recover the majority of the costs of the AMI Plan from customers during the first 10 years while it projects the majority of the benefits will not start flowing to customers until after year five (2017). *Id.* Accordingly, it is important that a reasonable discount rate be used to calculate the present value of this stream of
future costs and future benefits in order to determine whether the cumulative net benefits that ComEd projects customers will realize from 2021 onward are sufficient to justify approval of the AMI Plan.

ComEd presents two measures of the benefits of its AMI Plan relative to the costs of that plan, a benefit to cost ratio and a NPV of its benefits minus its costs. First, the Company uses an implicit discount rate of zero to calculate the benefit to cost ratio, because it calculates that ratio as the undiscounted sum of benefits over 20 years divided by the undiscounted sum of costs over those years. Second, the Company uses an explicit discount rate of 3.087% to calculate the NPV of benefits less costs. Id. at 10.

The discount rate of zero is clearly too low, as it implies that a dollar at any point in the future, up to 20 years in the future, is worth a dollar today. The 3.087% is also too low for several reasons. The B&V reports presents the 3.087% as being a “customer-facing” discount rate that ComEd applied in response to a recommendation from the Illinois State Smart Grid Collaborative (ISSGC). ComEd Ex. 6.02 at p. 1-3, footnote 5. But a review of the ISSGC Report shows that, on the contrary, ComEd has not interpreted the ISSGC recommendation correctly and, in addition, 3.087% is not a reasonable customer discount rate. Specifically, in the portion of the ISSGC Report that discusses the assembly of a cost/benefit analysis, the Report recommends that smart grid cost/benefit analyses include multiple views or perspectives of costs and benefits, including participant, ratepayer impact, program administrator, total resource and societal perspectives, and choosing the appropriate discount rate for each. At page 236, the ISSGC report states:

*The utility should be required to present multiple views, or perspectives, as part of their cost-benefit analysis to be filed with the regulatory commission. The ICC and others should have the benefit of these different perspectives when weighing the merits of smart grid investments.*

As noted above, the selection of an appropriate discount rate is a key element in any cost/benefit analysis. The lower the discount rate that is used, the more likely it is that positive net benefits are determined. Staff Ex. 2.0 at 4. In the instant case, the evidence shows that ComEd
witness Scott Vogt, a 14-year ComEd employee who currently serves as Director of Financial Planning and Analysis at Exelon, ComEd’s parent company, supplied the discount rate input to B&V. Tr. at 298. B&V witness Andrew Trump confirmed that neither he nor B&V conducted any independent analysis of the appropriateness of using a 3.087% discount rate in the cost/benefit analysis. Tr. at 350, 356. Mr. Vogt confirmed that to the extent that ComEd’s discount rate is tied to the customer perspective, and the customer perspective alone, then the Company’s costs and benefits and societal costs and benefits are not reflected in that discount rate. Tr. at 296. It is unclear why ComEd decided it would be appropriate for its employees, rather than a third-party independent evaluator, should provide the critical inputs for the cost/benefit analysis.

The People asked ComEd in discovery for all research analysis underlying the Company’s assumption that 3.087% is a reasonable discount rate from a customer’s perspective – the perspective ComEd utilized for purposes of examining the costs and benefits of AMI. Cross Ex. 14, which is attached to this Brief as Appendix A, was the extent of the “research and analysis” supplied by ComEd in support of the 3.087% discount rate selection. That response hardly inspires confidence in the selection of this important variable to the cost/benefit analysis.

In addition, the response makes clear that the choice of this inappropriately low discount rate is based on the assumption that a 30-year U.S. Treasury bond is a reasonable alternative from both a customer and societal perspective to receiving a series of benefits over a 20-year period. Cross Ex. 14, Tr. at 299. But Mr. Vogt acknowledged in cross-examination that U.S. Treasury bonds generally are viewed as being essentially risk-free. Tr. at 300-301. The same cannot be true of investment in AMI. Stated another way, the risk of customers actually achieving the benefits alleged in the B&V cost/benefit study are not zero. And, as Mr. Vogt confirmed, ComEd is not guaranteeing that customers will receive the benefits assumed in the B&V report. To that end, Mr. Vogt went so far to concur with Mr. Hornby’s assessment that some of the assumptions, such as the price for energy in
the future used for purposes of calculating the dollar savings associated with shifts in usage and energy savings are speculative. Tr. at 301.

For his part, Staff witness David Brightwell testified that he is “not sure” whether the 3.087% rate is appropriate or not. He noted that choices in discount rates are fairly subjective and leading experts in the theory of discounting disagree as to what the appropriate discount rate is for a given situation. *Id.* He concluded that ComEd’s discount rate “would be among the lower bounds of appropriate discount rates.” *Id.*

Aside from the unsupported selection of the 3.087% by ComEd, the ISSGC Report highlights other problems with the ComEd’s discount rate and customer perspective selection for the cost/benefit analysis. The ISSGC Report, for example, specifically references the importance of applying different discount rates based on the perspective being tested. The ISSGC states on page 237 of its report, including the last sentence which footnote 5 of ComEd Ex. 6.02 does not include, as follows:

*For certain tests, the rate of return on utility investments could be a reasonable choice for a discount rate. However, the use of a different discount rate may be appropriate for other tests because customers may have a different assumed cost of capital. (The discount rates used in the analyses are not intended to affect the rate of return that the Commission may set for future cost recovery on the investment.) Discount rates used in the analyses, and the rationale for their use, should be clearly documented. (Emphasis added.)*

Mr. Hornby testified that this recommendation – the importance of clearly documenting the rationale for the use of a particular discount rate in light of the cost/benefit perspective employed -- is consistent with the discussion of the choice of discount rates for calculating cost-effectiveness on page 4-8 of *Understanding Cost-Effectiveness of Energy Efficiency Programs.*

That report presents illustrative discount rates for each of the different cost-benefit tests, i.e., 10% for the participant test,

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8.5% as a utility WACC for the ratepayer impact, program administrator and total resource tests, and 5% for the societal test. *Id.* at 11-12.

The 3.087% discount rate the Company has used is not a reasonable customer discount rate because it is much too low, Mr., Hornby testified. Mr. Hornby noted that a reasonable customer discount rate would be, at a minimum, in the order of 8% to 10%. He noted that the 3.087% discount rate the Company has used would be a reasonable societal discount rate if the Company were calculating the benefits and costs from a societal perspective and if it had projected its future benefits and costs in constant (non-inflationary) dollars. However, as noted above, the Company is not calculating the benefits and costs from a societal perspective, notwithstanding Mr. Vogt’s claim that he equated a customer and societal perspective. Tr. at 299.

Mr. Hornby testified that it is reasonable to test the results of discount rates from a utility perspective and a residential customer perspective because the utility bases its investment decisions on its ability to earn its weighted average cost of capital and because residential customers will be paying for the majority of the costs of the AMI plan. The appropriate discount rate from ComEd’s utility perspective would be approximately 8.16%, the weighted average cost of capital under Section 16-108.5(c)(3), contained in the Commission’s Order in Docket 11-0721, ComEd’s formula rate filing. The appropriate discount rate from a ComEd customer perspective could be as low as 10.05%, the return on equity for ComEd shareholders approved in the Order in the same docket, or as high as 18%, the effective annual rate ComEd applies to bills that are over-due. *Id.* at 12.

At those discount rates and still using the 20-year timeline assumed by the Company, both the Base Case and the Doorknock Sensitivity are less cost-beneficial than suggested by ComEd. AG Exhibit 3.3 presents a comparison of the results for each of 3 those cases at higher discount rates. As indicated in that Exhibit, the benefit to cost ratio of the Base Case drops from 2.3 under the Company’s discount rate to 1.5 with an 8.16% discount rate and 1.4 with a 10.05% discount rate.
Similarly the benefit to cost ratio of the Doorknock Sensitivity drops from 2.0 to 1.3 and 1.2 using 8.16% and 10.05% discount rates respectively. *Id.*

3. **ComEd’s Selection of a 20-Year Timeframe for Analysis of AMI Costs and Benefits Is Flawed and Should Be Rejected.**

Mr. Hornby testified that the choice of a time horizon has been a matter of debate in several of the AMI Plan proceedings in which he has participated. AG witness Hornby took issue with ComEd’s selection of a 20-year cost/benefit analysis timeframe, and the lack of rationale for the generous assumption. He noted that other utilities have proposed, or been required to use shorter time periods in other AMI proceedings in which he either participated or reviewed. For example, in its AMI Plan filing in Arkansas, Oklahoma Gas and Electric assumed its smart meters would have an average life of 15 years, but it only had a five year warranty from its smart meter supplier. *Id.* at 15. In addition, a 2010 Maryland Public Service Commission Order ordered AMI petitioner Potomac Electric Power Company and Delmarva Power & Light Company to re-file its cost/benefit analysis utilizing a 10-year timeframe when analyzing the costs and benefits of AMI. *In the Matter of Potomac Electric Power Company and Delmarva Power & Light Company, Request for the Deployment of Advanced Meter Infrastructure*, Public Service Commission of Maryland, Order No. 83571 at 45. Another Maryland PSC Order specifically highlighted the risks to ratepayers when a timeframe that exceeds the useful life of the AMI technology is utilized for measuring costs and benefits:

The risk that BGE will expend enormous sums installing meters that will become obsolete or outdated prior to the end of their expected useful lives, or that they will not have sufficient interoperability with related technology to achieve future anticipated benefits is not merely theoretical. Several utilities in the past few years have moved forward with deployment of one technology, only to replace that technology within two-to-three years. In the AMI field, Connecticut Light & Power, Potomac General Electric and Oncor all
invested in technology for which ratepayers had to pay the costs of early obsolescence.

Currently, the ZigBee chip BGE intends to install in its smart meters is the dominant technology in the AMI market, but that reality could change for any number of reasons. No appliance manufacturer has yet adopted ZigBee technology, and Staff Witness Afflerbach, an expert on the state of the current technology, explained some of the risks BGE is asking its ratepayers to assume:

‘…we have a very dynamic world in terms of manufacturers of equipment, software, hardware, and what’s happening with energy. I wouldn’t rule out something along the lines of a very unusual, out of the box play by an entity like a Google or somebody along those lines to make a play with the technology that for whatever reason is not the ZigBee technology, maybe because there’s more comfort level by that manufacturer with the other technology. Maybe it’s because there’s a feeling that unlike ZigBee, Wi-Fi is the devil we know.’

If it turns out that appliance manufacturers decide to adopt some alternative to ZigBee technology, the expectation that the proposed “smart meters” will one day be capable of communicating with a customer’s “smart” appliances evaporates. BGE ratepayers will then be stuck paying higher rates for a white elephant, while customers of utilities that prudently waited to allow the industry to mature will enjoy the benefits of a wiser and safer “smart grid” deployment.

The field of modern technology is replete with examples of innovations once considered the leaders into a new era that were never widely adopted. All the federal funding in the world would not have made Sony’s Betamax a wise investment, for example. Those who invest in new technology as it becomes available often find themselves re-investing much sooner than they anticipated. And while we do not profess to know the future of any specific AMI technology, we are concerned that BGE proposes to bet ratepayer money while avoiding any of the substantial financial risks inherent in this investment. Any future AMI proposal BGE might choose to submit in the near term should include an amended business plan that details how BGE will mitigate and more fairly allocate between the Company and its customers the costs associated with upgrading or replacing its AMI technology to respond to the risks we have outlined.

In the Matter of the Application of Baltimore Gas and Electric Company for Authorization to

Deploy a Smart Grid Initiative and to Establish a Surcharge for the Recovery of Cost, Before the

The choice of 15 years, unlike ComEd’s proposed 20 years, is a conservative estimate, and reflects the uncertainty associated with these projections, including projected costs, projected benefits and the expected life of the smart meters. Id. at 13. The ISSGC report noted earlier also discusses the appropriate time-frame for a cost-benefit analysis, makes the following recommendation:

The length of time over which a cost benefit analysis is calculated should reflect the projected useful life of the smart grid investment or system. “Useful life” means the continuous period of time when the components and systems of the investment operate correctly and reliably to perform their designed functions. Absent any persuasive contrary evidence, the depreciable life of the investment for regulatory (non-tax) purposes should match the useful life of the investment. The utility should document the basis for its determination of the useful life of the investment. The utility should also document the length of time over which reasonable customer benefits can reliably be estimated.

ISSGC Report at 239 (emphasis added).

The impact of ComEd’s selection of a 20-year time frame for its Base Case, as compared with the more reasonable and accepted 15-year timeframe, is significant. The Doorknock Sensitivity and the Base Case are each much less cost beneficial if their NPV is calculated using a 15-year time horizon and higher discount rates, as indicated on 8 page 1 of AG Ex. 3.4. In fact, at a 10.05% customer discount rate and a 15-year time horizon, the Doorknock Sensitivity and the Base Case are each only marginally cost- beneficial, with benefit to cost ratios of 1.0 and 1.1 respectively. Neither the Doorknock Sensitivity nor the Base Case are cost beneficial under a 10-year time horizon regardless of the discount rate that is used. The results of analyzing those two cases over a 10 year time horizon are presented on page 2 of AG Exhibit 3.4. Id. at 14-15.
In all, Mr. Hornby testified that the marginal cost-beneficial results that result when critical inputs are modified do not support a conclusion that the Plan is cost-beneficial. He noted that the Company’s estimates of the NPV of its Base Case and Doorknock Sensitivity are based upon numerous projections, some of which may not have been analyzed in detail (see, e.g. Staff Ex. 2.0 at 8) and all of which are subject to uncertainty. In terms of uncertainty, one problem is the limited experience with full deployment of AMI by utilities in the United States. While a number of utilities have conducted pilot projects testing AMI and dynamic pricing on a limited basis, it is only in the last few years that several U.S. utilities have received regulatory approval to fully deploy AMI and dynamic pricing tariffs on their systems. Mr. Hornby noted that most of those utilities are currently in the process of completing that deployment. Id. at 15.

Other inputs supplied by ComEd to B&V are cause for hesitancy in Commission approval of the AMI Plan. The Company projections of its rates, and its electric supply costs, over the next 15-to-20 years, in particular, are another major source of uncertainty. The Company projects that without AMI, those rates and costs will increase steadily with inflation at 2 percent per year, year after year. ComEd Ex. 6.02 at pp. ComEd uses those projected rates and unit costs to calculate the value of benefits from reducing Unaccounted for Energy (“UFE”) and Consumption on Inactive Meters (“CIM”). The Company values these benefits at more than $2.0 billion (i.e., $542 million plus $649 million plus $963 million) per Table 1-11 in ComEd Ex. 6.02; ComEd Ex. 6.02 at pp. 1-2, 1-4. ComEd witness Trump confirmed during cross-examination that these assumptions related to inflation and energy prices were, like the critical discount rate input, supplied by ComEd/Exelon employees, rather than through a third-party objective analysis. Mr. Trump, who incorporated those values in the benefits quantification performed no independent analysis of the accuracy or reasonableness of these figures. As a result, those projected benefits are sensitive to the validity of its assumptions regarding increases in its rates and changes in future electricity energy supply prices, which in turn are very sensitive to future natural gas prices. Mr. Hornby characterized these
assumptions as “essentially speculative”, a characterization with which ComEd witness Vogt agreed. AG Ex. 3.0 at 15-16; Tr. at 301-302.

* * * * *

Mr. Hornby noted that it is important for the Commission to consider the unsubstantiated or verified inputs and these marginal results when deciding whether to accept or reject the AMI Plan because, if approved, the Company will bear very little of the financial risk associated with the AMI Plan. In particular, under formula rates, the Company will make the same AMI investment and earn the same return on that investment regardless of the actual monetary value of its reductions in UFE, CIM and Bad Debt. Mr. Vogt made clear that the Company is not guaranteeing the anticipated results of the cost/benefit analysis. Tr. at 301.

ComEd maintains that the AMI Plan should be approved because its financial analysis projects the total benefits from the AMI Plan will substantially exceed projected total costs. However, Mr. Hornby’s analysis demonstrates that, even if one accepts all of the Company’s projections, the benefit cost ratio of the AMI Plan is only marginally greater than 1. AG Ex. 3.0 at 16. If the actual value of any of these benefits proves to be materially less than the Company’s projections, the actual net benefits to customers will be correspondingly less. The possibility that future actual benefits may be lower than the projections in Exhibit 6.02 would be less of a concern if ComEd was proposing to bear that risk or if it was proposing to guarantee customers its projected savings regardless of what the values actually prove to be. However, that is not the case. ComEd is in fact proposing to bear little, if any, of that financial risk associated with the possibility that the future actual benefits from the AMI Plan may prove to be significantly less than those it projects.

In sum, the Commission should the record evidence indicates that the ComEd results overstate the benefit to cost ratio of the AMI Plan and of the NPV. First, the Base Case for which the Company has calculated these results does not reflect currently effective customer notification requirements. Second, the discount rates the Company used to calculate the benefit to cost ratio and
the NPV under its Base Case are too low, and represent only one perspective, contrary to the advice of the ISSGC, leading to an inflated benefit/cost ratio. Third, the Company’s selection of a 20-year timeframe for its calculation of benefits and costs is too long. *Id.* ComEd’s cost-benefit analysis, presented by Black & Veatch, lacks objectivity and sufficiently explained rationales for key inputs to the cost/benefit analysis. As such, it should be rejected by the Commission.

**IV. Conclusion**

WHEREFORE, the People of the State of Illinois respectfully request that the Commission enter an order consistent with the recommendations made in this Brief.

Respectfully submitted,

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