Eckert Seamans Cherin & Mellott, LLC
213 Market Street
8th Floor
Harrisburg, PA 17101

TEL 717 237 6000
FAX 717 237 6019
www.eckertseamans.com

Deanne M. O'Dell
717.255.3744
dodell@eckertseamans.com

May 4, 2018

Via Electronic Filing
Rosemary Chiavetta, Secretary
PA Public Utility Commission
P.O. Box 3265
Harrisburg, PA 17105-3265

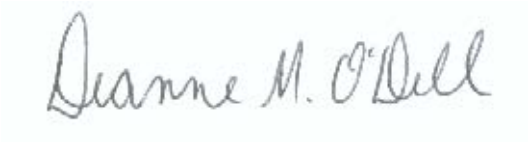
Re: En Banc Hearing for Supplier Consolidated Billing
Docket No. M-2018-2645254

Dear Secretary Chiavetta:

Enclosed please find Comments on behalf of the Retail Energy Supply Association ("RESA") related to the above-referenced proceeding. Also, please note, that RESA requests the ability to present a witness at the Commission's June 14, 2018 *En Banc* Hearing.

Please do not hesitate to contact me if you have any questions or need anything further.

Sincerely,



Deanne M. O'Dell

DMO/lww
Enclosure

cc: Daniel Mumford, Director, Office of Competitive Market Oversight (via email only)
Kriss E. Brown, Deputy Director, Office of Competitive Market Oversight (via email only)

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Notice of *En Banc* Hearing on	:	
Implementation of Supplier Consolidated	:	Docket No. M-2018-2645254
Billing	:	

COMMENTS OF
THE RETAIL ENERGY SUPPLY ASSOCIATION
IN RESPONSE TO SECRETARIAL LETTER DATED MARCH 27, 2018

Deanne M. O'Dell, Esquire
(Pa. Attorney ID No. 81064)
Kristine E. Marsilio, Esq
(Pa. Attorney ID No. 316479)
Eckert Seamans Cherin & Mellot, LLC
213 Market Street, 8th Fl.
Harrisburg, PA 17108-1248
717 237 6000
dodell@eckertseamans.com
kmarsilio@eckertseamans.com

Date: May 4, 2018

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TABLE OF ATTACHMENTS

Attachment	Description
A	Philip R. O'Connor, *Restructuring Recharged: The Superior Performance of Competitive Electricity Markets 2008-2016*, April 2017.
B	Pat Conroy, Kim Porter, Rich Nada, Barb Renner, Anupam Naurla, *Consumer Product Trends Navigating* 2020, Deloitte University Press (June 25, 2015).
C	RESA Exhibit RJH-14, FirstEnergy's Discovery Response to RESA Set I, Nos. 12, 13, and 15 at page 9 of 48. Submitted as part of the record on April 10, 2018. *Joint Petition of Metropolitan Edison Company, Pennsylvania Electric Company, Pennsylvania Power Company and West Penn Power Company for Approval of their Default Service Program*, Docket No. P-2017-2637855, P-2017-2637857, P-2017-2637858, P-2017-2637866, Recommended Decision pending.

I. INTRODUCTION

Permitting electric generation suppliers ("EGSs") to directly bill their customers through supplier consolidated billing ("SCB") provides improved transparency to consumers and additional accountability from EGSs that is currently lacking in the competitive retail market. SCB enables EGSs to forge a stronger relationship with their customers includes a deeper understanding of their customers' specific desires and preferences. With this knowledge, EGSs can develop and bring to market a greater variety of customer-focused products and services – delivering consumers desire. The ultimate result will be a multitude of new and exciting "customer focused" products and services which consumers can choose from with clarity regarding who is providing the product and what benefits are being provided.

Implementing SCB in the near future builds upon and effectively utilizes milestones thus far accomplished in Pennsylvania including: (1) establishment of the regulatory framework for the competitive market structure; and, (2) investment in infrastructure – namely advanced metering infrastructure ("AMI") and smart meters – which provides important interval level data necessary for developing the products and services consumers want. With these two key elements firmly in place, the time has come to empower Pennsylvania's consumers to drive future innovation in the electricity market (as they are doing in nearly every other industry). The implementation and subsequent innovation provided by SCB will address the absence of a direct relationship between an EGS and its customers – finally resolving one of the most significant reasons why customer-focused innovation in this market has stalled.

The implementation of SCB aligns with the core principle of the Retail Energy Supply Association ("RESA")[1] that "a vibrant and sustainable competitive retail energy market is a better alternative for consumers than monopoly-protected utility regulation."[2] As an association of EGSs that operate throughout the country, the member companies of RESA have significant experience operating in numerous competitive markets with varying market structures. These experiences include issuing SCBs in other jurisdictions and also developing products and services to compete with other EGSs for customers in those jurisdictions with SCB.[3] Because of the diversity of its member companies in terms of size, scope and operations, RESA is in a unique position to evaluate SCB. In the collective experience of RESA's member companies, SCB and utility consolidated billing ("UCB") are not mutually exclusive market models. Rather, the availability of both billing options enhances the quantity and diversity of competitive offers that are available to customers. Moreover, the implementation of SCB will result in enhanced consumer protections by providing consumers with an improved understanding of electric retail competition. Consumers will understand exactly who their supplier is and what their supplier is providing. In turn, consumers will have a much broader view of their options (such as value added products and services) and the end result will be more satisfied customers.

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1 The comments expressed in this filing represent the position of the Retail Energy Supply Association (RESA) as an organization but may not represent the views of any particular member of the Association. Founded in 1990, RESA is a broad and diverse group of twenty retail energy suppliers dedicated to promoting efficient, sustainable and customer-oriented competitive retail energy markets. RESA members operate throughout the United States delivering value-added electricity and natural gas service at retail to residential, commercial and industrial energy customers. More information on RESA can be found at www.resausa.org.

2 *See* https://www.resausa.org/about-us.

3 Since its market first opened to competition in 2002, Texas has exclusively relied on SCB.

RESA appreciates the Commission's desire to continue to investigate SCB and looks forward to participating in this proceeding to provide whatever assistance the Commission and other stakeholders may deem useful. To that end, the purpose of these Comments is to provide RESA's feedback regarding the "Topics Designed to Guide the Discussion" that were included as an attachment to the Commission's March 27, 2018 Secretarial Letter.[4]

In addition to these Comments, RESA specifically requests that it be permitted to present testimony during the June 14, 2018 *en banc* hearing. As noted in its March 12, 2018 letter filed in this docket, RESA supports the view that all interested stakeholders should be permitted to participate in the hearing (even if doing so requires additional days of hearings).[5] Given the potential benefit to consumers that would result from implementing SCB, ensuring that a complete record is produced for the benefit of the Commission's consideration is important. Allowing all interested stakeholders to share their perspectives is critical to developing that complete record. RESA also respectfully suggests that the Commission consider organizing the panels based on topic areas rather than by aligned stakeholders. A structure such as this would enable the Commission to address all viewpoints on a particular topic rather than being limited to one particular stakeholder's view on all of the topics (or those of interest to the stakeholder).

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4 RESA has always been a strong proponent of SCB and has submitted various comments, testimony and other filings to the Commission in dockets over the years expressing its support. As related to this specific proceeding, RESA submitted Comments and Reply Comments at Docket No. P-2016-2579249 and respectfully requests that they be incorporated herein by reference. *Petition of NRG Energy, Inc. for Implementation of Electric Generation Supplier Consolidated Billing*, Docket No. P-2016-2579249, Comments of the Retail Energy Supply Association dated January 23, 2017 ("RESA NRG SCB Comments") and Reply Comments of the Retail Energy Supply Association dated February 22, 2017 ("RESA NRG SCB Reply Comments")

5 *En Banc Hearing for Supplier Consolidated Billing*, Docket No. M-2018-2645254, Retail Energy Supply Association Letter dated March 12, 2018 at 2.

RESA respectfully urges the Commission to consider these structural suggestions as a way to ensure that a full and complete record is developed on this very important topic.

RESA cannot emphasize enough its view that implementation of SCB as a billing option is an important and necessary evolution of the retail electricity marketplace which will allow EGSs to begin delivering on the original promises of technological and services-related innovation that were an integral part of the Electricity Generation Customer Choice and Competition Act ("Choice Act").[6] The end result will be a modern, electricity marketplace where Pennsylvania consumers will finally have the opportunity to: (1) truly capitalize on all the work that has already been completed regarding the retail electricity market; (2) take full advantage of the exciting and continually evolving advances in technology; and, (3) exercise real power and influence over the electricity products and services that are made available to them. RESA respectfully submits that focusing on how to achieve this result should be the primary focus of this proceeding in light of the significant positive benefit to the public. As this Commission and stakeholders have proven many times over the twenty years since passage of the Choice Act, the multitude of details necessary to make SCB a reality can be reasonably addressed through strong leadership from the Commission and the collaborative efforts of stakeholders.

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6 66 Pa. C.S. §§ 2801-2812.

II. COMMENTS

A. Legal: Implementing SCB Is Consistent With The Law And Intent Of The Competition Act

1. Implementing SCB will allow EGSs to begin to deliver on the original promises of technological and services-related innovation which are an integral part of the Choice Act

As well-explained in an in-depth white paper prepared by Dr. Philip R. O'Connor, the transition to competition in the electric industry in Pennsylvania and other states was neither "precipitous or incautious" as legislation at the state level to allow retail electricity supply competition "was preceded by more than a decade of questioning, discussion and debate."[7] Ultimately, in Pennsylvania and elsewhere, the determination was made that promoting market competitive forces would deliver greater value to customers and society than only allowing traditional regulation. As summarized below, this judgment is reflected throughout various provisions of the Choice Act which make clear that its purpose is to ensure that consumers have the power to choose an EGS.

- 66 Pa. C.S. § 2802(3): "Because of advances in electric generation technology and Federal initiatives to encourage greater competition in the wholesale electric market, it is now in the public interest to permit retail customers to obtain direct access to a competitive generation market…"

- 66 Pa. C.S. § 2802(5): "Competitive market forces are more effective than economic regulation in controlling the cost of generating electricity."

- 66 Pa. C.S. § 2802(7): "This Commonwealth must begin the transition from regulation to greater competition in the electricity generation market to benefit all classes of customers and to protect this Commonwealth's ability to compete in the national and international marketplace for industry and jobs."

- 66 Pa. C.S. § 2802(12): "The purpose of this chapter is to modify existing legislation and regulations and to establish standards and procedures in order to

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[7] See Attachment A, Philip R. O'Connor, *Restructuring Recharged: The Superior Performance of Competitive Electricity Markets 2008-2016*, April 2017 ("O'Connor Report"), at 9-10.

create direct access by retail customers to the competitive market for the generation of electricity. . .”

- 66 Pa. C.S. § 2802(13): “Under current law and regulation there exists some competition in the wholesale market . . . but the generation, transmission, distribution and retail sale of electricity is provided generally by the public utilities under bundled rate regulated by the commission. The procedures established under this chapter provide for a fair and orderly transition from the current regulated structure to a structure under which retail customers will have direct access to a competitive market for the generation and sale or purchase of electricity.”

- 66 Pa. C.S. § 2802(14): “This chapter requires electricity utilities to unbundle their rate and services and to provide open access over their transmission and distribution systems to allow competitive suppliers to generate and sell electricity directly to consumers in this Commonwealth.”

- 66 Pa. C.S. § 2804(2): the Commission “shall allow customers to choose among EGSs in a competitive generation market through direct access… Customers should be able to choose among alternatives such as firm and interruptible service, flexible pricing and alternate generation sources, including reasonable and fair opportunities to self-generate and interconnect. These alternatives may be provided by different [EGSs].”

- 66 Pa. C.S. § 2806(a) – “all customers . . . shall have the opportunity to purchase electricity from their choice of EGS. The ultimate choice of the EGS is to rest with consumer.” “The generation of electricity shall no longer be regulated as a public utility service.”

In furtherance of these statutory directives, the Commission has undertaken numerous tasks to establish a strong regulatory framework within which competition could develop. An integral part of these initiatives is to ensure that consumers are well-educated about how the competitive market works and that their shopping decisions are honored in a timely manner. The absence of SCB in today’s market, however, restricts these goals because the UCB-only bill is confusing and EGSs cannot establish a direct relationship with their customers.

In a truly competitive electric market, where EGSs are competing with one another to serve customers,[8] the result is a variety of products and services that deliver to consumers technological and services-related innovation – consistent with the purposes and intent of policymakers and the legislature at the time the Choice Act was adopted.[9] As will be discussed further in Section II.B below, adding SCB as a billing option for consumers will enable a multitude of new and exciting competitive products and services focusing on what consumers want. This outcome is perfectly consistent with the direction provided to the Commission in the Choice Act.

While – as noted by the Commonwealth Court – there are other "important concerns" also addressed in the Choice Act (e.g., ensuring adequately-funded, cost-effective, and affordable programs exist to provide low-income customers affordable electric service), the "overarching goal of the Choice Act is competition."[10] Importantly, nothing about these "other" provisions in the Choice Act prohibit the Commission from implementing SCB. On the contrary (and as discussed further below in Section II.C), giving consumers access to the choices made available through SCB – regardless of the consumer's financial means – is consistent with the authority

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8 It should be noted that the presence of the EDC as a "competitor" with whom EGSs must also compete creates an unequal playing field given the EDC's historical role as the monopoly provider and its current role as the provider of last resort. In addition, EDCs are able to seek cost recovery from captive ratepayers for costs that EGSs also incur (for example, compliance with AEPS requirements) but do not have a captive ratebase from which to recover the costs. Because of inherent EDC advantages, the ability of consumers to "choose" an EDC's default service or an EGS product is not truly competition. For "true competition," the products and services available to consumers must be developed in a competitive market where all the providers have an equal and fair opportunity to compete with one another.

9 Attachment A, O'Connor Report at 5-13.

10 *Coalition for Affordable Utility Services and Energy Efficiency in Pennsylvania v. PUC*, 120 A.3d 1103-1104, 1106 (Pa. Commw. Ct. 2015), appeals denied, 136 A.3d 982 and 136 A.3d 983 (Pa. 2016) at 1103-1104, 1106.

and direction set forth in the Choice Act and provides consumers the maximum opportunity to choose the products and services that best address their unique circumstances.

2. Implementation of SCB is necessary in light of current EDC practices that create an unfair competitive advantage for EDCs

At the time it adopted the Choice Act, the Legislature recognized that: (1) the power of choice is meaningless if no competitive offers are available; and, (2) the then-existing monopoly market structure in place restricted customer choice (because the monopoly EDCs had been providing the only supply service). Accordingly, the Choice Act sets forth specific directives regarding interactions between the EDCs and EGSs. More specifically, the Choice Act requires that EDCs provide EGSs nondiscriminatory access to the EDC's transmission and distribution system on "rates, terms of access and conditions that are comparable to the utilities own use of its system."[11] The Choice Act also empowers the Commission to take steps to prevent anticompetitive or discriminatory conduct and to investigate "the impact on the proper functioning of a fully competitive retail electricity market. . . anticompetitive or discriminatory conduct affecting the retail distribution of electricity."[12]

Consumers today want seamless experiences via technology and demand business models that enable customer-specific customization and direct interaction between the consumer and the

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[11] 66 Pa. C.S. § 2803 (Direct Access is defined as "The right of electric generation suppliers and end-use customers to utilize and interconnect with the electric transmission and distribution system on a nondiscriminatory basis at rates, terms and conditions of service comparable to the transmission and distribution companies' own use of the system to transport electricity from any generator of electricity to any end-use customer.)(emphasis added); 66 Pa. C.S. § 2804(6) ("A public utility that owns or operates jurisdictional transmission and distribution facilities shall provide transmission and distribution service to all retail electric customers in their service territory and to electric cooperative corporations and electric generation suppliers, affiliated or nonaffiliated, on rates, terms of access and conditions that are comparable to the utilities own use of its system.") (emphasis added).

[12] 66 Pa. C.S. §§ 2811(a) and (b).

product provider.[13] This change is occurring with respect to energy. Instead of one-size fits all utility service, today's energy industry is marked by the increased customer adoption of new technologies to manage energy consumption and alternatives to traditional utility energy solutions. Trends such as the deployment of roof-top solar, connected home devices like smart LED lighting and thermostats, energy efficient appliances, the emergence of home battery storage, and other technology and service innovations are changing the way consumers think about energy. This type of innovation is exactly why Pennsylvania and other states embarked upon electric restructuring in the first place. Outside of Pennsylvania, the competitive retail energy landscape is evolving to create synergistic ways to bundle products and services to provide greater overall value to consumers. In Pennsylvania, however, EGSs face significant obstacles in their ability to bring such innovations to market within the current UCB/POR structure while, at the same time, EDCs embark upon various practices to leverage their ratepayer supported systems in an effort to try to capitalize on current consumer trends. The practical, real-world effect of these actions are that EDCs are using ratepayer funded assets and resources to deepen their already existing unfair competitive advantage while – at the same time – blocking the ability of EGSs to have a fair opportunity to compete.

By way of example, the FirstEnergy Companies are actively promoting non-commodity products and services via the EDCs' call centers, new customer welcome packets, bill inserts and FirstEnergy's Smartmart website.[14] The use of bill inserts enables the EDCs to leverage their

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13 See Attachment B, Pat Conroy, Kim Porter, Rich Nada, Barb Renner, Anupam Naurla, *Consumer Product Trends Navigating* 2020, Deloitte University Press (June 25, 2015) ("Deloitte Consumer Product Trends Study") at 11.

14 Allowing utilities to offer competitive products and services is not consistent with the initial purpose of restructuring to open the market to competitive suppliers and to (at least initially) limit utilities to the provision of default service.

ratepayer-funded billing system and their exclusive right to bill consumers to promote non-commodity products and services – something EGSs are not permitted to do through UCB. Additionally, FirstEnergy's Smartmart website is promoted through each of the Pennsylvania EDC-specific websites under the "Products Tab" of the primary website banner. This placement receives positioning on the website. Notably absent from this "Products Tab" is any mention of retail electric choice, which is relegated to the Pa Power Switch and General Information sections at the bottom of the webpage. FirstEnergy also promotes the ability of consumers selecting these products to pay for them on the EDCs' utility bill – telling potential customers that "We offer a convenient payment plan with no money down and low monthly payments on your electric bill."[15]

Actions such as these by the EDCs create a significant competitive disadvantage for EGSs because EGSs do not have the ability to: (1) directly bill their customers; and, (2) provide options through that billing relationship to expand their product offerings and services in the same way the EDCs can.[16] Thus, the current practices of the EDCs combined with the lack of

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[15] See Attachment C, RESA Exhibit RJH-14, FirstEnergy's Discovery Response to RESA Set I, Nos. 12, 13, and 15 at page 9 of 48. Submitted as part of the record on April 10, 2018. *Joint Petition of Metropolitan Edison Company, Pennsylvania Electric Company, Pennsylvania Power Company and West Penn Power Company for Approval of their Default Service Program*, Docket No. P-2017-2637855, P-2017-2637857, P-2017-2637858, P-2017-2637866, Recommended Decision pending.

[16] EGSs are specifically prohibited from including anything beyond "basic" commodity products through the POR program. *See*, e.g., PECO Supplier Tariff Page 94, Billing Service Options, Section 13 ("Upon request, an EGS shall provide a written certification to the Company that the Supplier is providing only basic electric supply to Customers billed under Consolidated EDC Billing. **Basic electric supply is defined as follows: energy (including renewable energy) and renewable energy or alternative energy credits (RECs/AECs) procured by an EGS, provided that the RECs/AECs are bundled with the associated delivered energy. Basic electric supply does not include a non-generation product (e.g., service contract for appliances, or payment for energy reductions such as demand response products), or renewable or alternative energy credits that are not associated with delivered energy.** For

SCB serve to deepen the already unfair competitive advantage the utility has by virtue of its role as the historical monopoly provider and provider of last resort. The Commission is compelled by the Choice Act to redress this situation and this legal obligation cannot be casually dismissed or deemed any less important than other requirements the Commission needs to consider regarding consumer protections. If EDCs are permitted to continue to solidify their competitive advantage in ways that shut out the EGSs, the end result will be to effectively eliminate all EGSs from the marketplace. Not only would this be the exact opposite of what the Choice Act intended, but it would be a bad result for consumers.

B. Impact On The Market: Implementing SCB Will Lead To Significant Positive Benefits For Consumers

1. SCB Promotes Consumer Driven Innovation Which Maximizes Infrastructure Investment That Can Lead To Broader Societal Benefits

Today consumers are moving beyond binary choices (i.e., "is the light on or off") to make electricity use more efficient, economic and convenient (i.e., "I can now program my thermostat to increase the temperature by a few degrees when I'm at work and begin to cool the house an hour before I get home."). This consumer desire for empowerment is at the heart of the worldwide digital revolution and is driven, in part, by advances in communications, information analysis and management, Wi-Fi connected devices, energy controls and decision assistance. The rapid adoption of AMI and other smart grid technology will open a myriad of product development and value-added service possibilities for competitive electric suppliers.[17]

The interval level data available now through smart meters allows competitive electric suppliers to develop specialized products such as free electricity on weekends or evenings,

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residential Customers, basic electric supply shall not include early contract cancellation fees, late fees or security deposits assessed by an EGS.")

[17] Attachment A, O'Connor Report at 29-30.

demand response solutions which can help customers reduce usage, as well as prepaid electricity plans coupled with real-time, daily alerts to customers regarding their actual usage (giving consumers the information necessary to take proactive measures regarding future consumption).[18] Customers can also easily access their interval level data through their computer or smart phone which provides them insight on when and where they use energy.

Additionally, because competitive electric suppliers must offer more than the "lowest" price if they want to attract and retain customers, most competitive electric suppliers in the market today have affiliated or partnered with service and technology companies that broaden and deepen the consumer value proposition. For example, some electric suppliers are working with major airlines to offer frequent flyer miles, as well as other types of rewards for customers including bundling electricity with cable and Internet service. Other suppliers provide residential customers with digital games and contests that encourage energy efficiency and can educate children about energy usage. Still others offer an array of smart thermostats, smart home automation, energy efficiency products, and various applications to automate home energy and appliances.[19]

The key to capitalizing on this innovation is enabling EGSs to directly connect with their customers.[20] A direct connection permits consumer empowerment: (1) the consumer is in

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[18] An recent analysis of the energy efficiency implications of prepaid electricity service suggests that it could save 9.6% of average daily energy consumption. *See* The Electricity Journal, "Can a daily electricity bill unlock energy efficiency? Evidence from Texas, Volume 31, Issue 3 (April 2018). Article available at: https://www.sciencedirect.com/journal/the-electricity-journal/vol/31/issue/3

[19] Attachment A, O'Connor Report at 25-26.

[20] See RESA's NRG SCB Comments at 6 ("The most exciting and popular trends in today's economy all revolve around new, disruptive or more direct and dynamic ways to engage the consumer…" and the "one common tread to all of these innovations" is a direct connection to the customer. "Connecting passengers to drivers via a smart phone app. Connecting guests to a host

control of the products/services he/she is receiving; and, (2) EGSs can learn what their customers want so that those products can be developed and brought to market. A direct connection is the only way for EGSs to create seamless experiences for the customer, leverage current technological advances (e.g., smartphone applications), permit customer engagement and allow for customization. As more fully explained in a study from 2015 by Deloitte, these consumer desires and trends are not going away and businesses need to find a way to reform to accommodate them.[21]

Today in Pennsylvania, EGSs are without options to satisfy consumers in this regard. For residential customers, UCB is the only realistic billing option available for EGSs because these customers want the convenience of a single consolidated bill. Separate billing from the EDC and the EGS (i.e. dual billing) is confusing and causes some customers to think that they paid their total energy bill when they only paid the utility and still have a second bill from an EGS that must be paid. Additionally, the UCB/POR structure prohibiting EGSs from billing anything beyond the basic commodity on the UCB leaves EGSs with limited options for offering the innovative products and services previously described. Stated plainly, EGSs interested in moving beyond the commodity, building deeper relationships with their customers and offering more consumer-driven value cannot achieve these goals within today's UCB structure.[22]

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via AirBnB. Connecting a shopper with his or her product, often in only one to two days, via Amazon's fulfillment service.")

21 Attachment B, Deloitte Consumer Product Trends Study.

22 RESA supports SCB as an additional billing option to the current UCB structure that is combined with a Purchase of Receivables ("POR") program. UCB with POR was particularly successful during the initial market development period following expiration of generation rate caps to enable new entrants to quickly begin serving customers by leveraging the existing utility billing platforms. However, now that we are past the initial market development phase in Pennsylvania, it is time to expand billing options to better enable innovation.

Limiting residential customers to UCB deprives consumers of the true innovation that only the EGSs competing against one another can provide. EGSs are entrepreneurs and are driven by the need to acquire and retain customers – this is their core purpose. As such they are adept at identifying consumer trends, translating those trends into products that consumers want, testing the rate of consumer adoption and reforming products accordingly. These drivers are very different for EDCs, however, because the traditional monopoly regulation model cannot effectively keep pace with the evolving marketplace.[23] This is because the utility is subject to cost-based regulation through which annual expense levels must be scrutinized, justified and approved in a rate case. Under the traditional monopoly model, utility commissioners (not consumers) make difficult and often out-of-date decisions about consumer needs or wants.[24] Stated simply, the regulated monopoly model is based on limiting costs by limiting choices because traditional regulation imposes rigid, broad-brush pricing, terms and conditions of service and customer class definitions.[25] In contrast, competitive suppliers are adept at quickly responding to changing consumer preferences. Indeed, competitive suppliers must do this or else

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23 Attachment A, O'Connor Report at 23-24.

24 A good example of this is PECO's attempt to receive Commission approval to offer a prepaid meter plan. PECO filed its petition with the Commission on October 26, 2016. The Commission established a comment and reply comment period that ended on January 16, 2017. The Commission also referred the matter to the Office of Administrative Law Judge who issued a Recommended Decision on February 12, 2018. Exceptions have been filed and the matter is still pending a decision from the Commission. While RESA opposes the offering of a prepaid plan by an EDC as such products should be offered by EGSs, the reality is that a year and a half has passed since PECO first sought permission from the Commission to implement the new product and no final decision has been made yet. This would not occur in the competitive market as EGSs would (and must) respond much more quickly to evolving consumer demands and preferences. *See PECO Energy Company's Petition for Plan for an Advance Payments Program Submitted Pursuant to 52 Pa. Code § 56.17; PECO Energy Company's Petition for Temporary Waiver of Portions of the Commission's Regulations with Respect to the Plan*, Docket No. P-2016-2573023.

25 Attachment A, O'Connor Report at 29.

they will quickly lose customers to their competitors. Adding SCB as an additional billing option will significantly benefit consumers because electricity products will keep pace with both technological changes and shifting consumer desires. This, in the end, is a real win for consumers – and one that can only realistically be delivered by the competitive market. To achieve such result, though, EGSs need the ability to establish a direct and meaningful relationship with their customers – a pathway which can be provided through SCB.

2. SCB Will Increase Satisfaction With The Competitive Market To Decrease Consumer Complaints And Increase EGS Investment In Pennsylvania

There is no question that the exclusive presence of UCB has created customer confusion. Consumers have been encouraged to shop for a supplier while also having to understand that their bill will continue to come from the utility notwithstanding their decision to shop. The location of the EGS's charges on the bill, the expanding use of bill notifications via email in lieu of sending the customer a paper bill, and the enrollment of customers through the customer referral programs have all lead to confusion among some customers regarding what entity is providing which services. This confusion can lead to informal and formal consumer complaints and a resulting dissatisfaction with the competitive market such that these consumers return to the EDC never to exercise their right to shop again.

Adding SCB as a billing option increases transparency for customers which can lessen subsequent confusion and/or dissatisfaction with the electric shopping process. Customers will always be certain of who their provider is, what prices they are being charged, whether they have been switched, and for what services they are being billed. Mistakes can be detected and addressed much more quickly. A customer receiving a bill from a new SCB supplier will recognize immediately that his or her service was switched because the bills will look different and will clearly identify the new service provider. In Texas, where SCB is the only billing

option, allegations by consumers that their service was switched without their authorization have averaged 6% of the total customer complaints addressed by the Public Utility Commission of Texas since 2003.[26] In contrast, some consumers in Pennsylvania continue to be confused about what entity is providing them service. In 2016, by way of example, consumers contacting the Commission's Bureau of Consumer Services questioning whether their service was appropriately switched produced the largest volume of competition-related calls (approximately 21% of calls).[27] Reducing confusion for consumers and creating a more effective way to guard against slamming is consistent with this Commission's goals.

Also in furtherance of achieving these goals is that consumers will more easily be able to directly contact the EGSs for account support services because the EGSs contact information will be more easily accessible on the EGS's bill. By going directly to the source of their questions, customers will be able to directly contact the correct entity to address their concerns. As a result of this more direct customer engagement, EGSs will be incentivized to differentiate their customer support services from competitors likely resulting in enhanced services (e.g., 24/7 customer service, enhanced web capabilities and creative bill payment options).

The benefits of SCB will increase customer satisfaction with the competitive market and the volume of consumer complaints will likely decrease. This has proven true in Texas where SCB has been the only billing option since the market opened in 2002 and overall consumer

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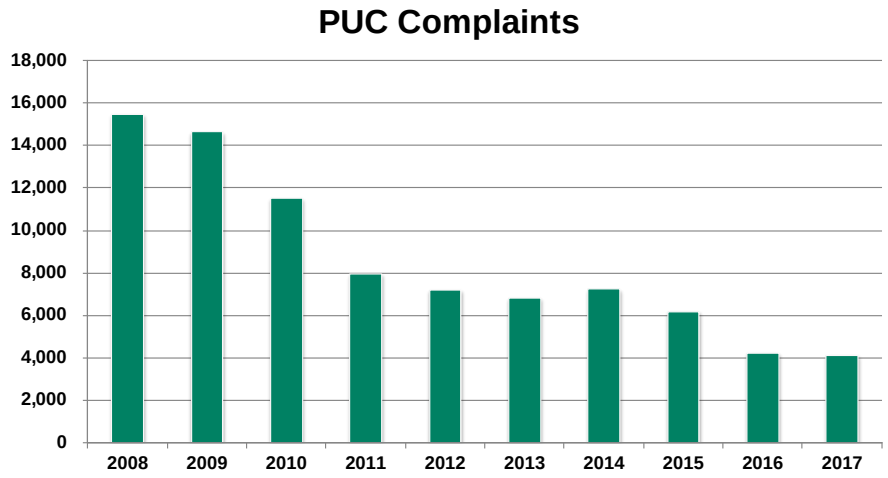
[26] Copies of the Public Utility Commission Texas' Scope of Competition in Electric Markets of Texas reports are available at https://www.puc.texas.gov/industry/electric/reports/scope/Default.aspx.

[27] See 2016 Utility Consumer Activities Report and Evaluation dated December 2017 at 8. Report available at www.puc.state.pa.us/publications_reports/pdf/UCARE_2016.pdf

complaints have trended downward as retail electric competition has taken root. Between 2008 and 2017, Public Utility Commission of Texas electric complaints have fallen by 73%.[28]



3. Increased Customer Satisfaction Will Drive Even More Investment By EGSs Into The Pennsylvania Market

For the reasons discussed in the previous two sections, SCB is a critical consumer protection that enables customers to be more fully informed about their choices resulting in increased customer satisfaction. As a result, more EGSs will want to invest in the Pennsylvania market and develop consumer-focused innovative products and services so that they can acquire and maintain more customers. Increased investment by EGSs in Pennsylvania can lead to broader positive societal impacts such as increased jobs, infrastructure investment, greater education about retail electric competition and more efficient uses of energy. These benefits reach beyond the previously discussed significant benefits to the consumers of being able to choose an SCB supplier.

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[28] Source: Regulatory Compliance Services, 2017 Year End Scorecard. See http://www.your-rcs.com/

C. Low-Income Customers / Assistance Programs: All Customers Benefit From Participation In The Competitive Market

While RESA fully recognizes and appreciates that the low income customer assistance population is a vulnerable group, there is no legal or logical reason to deny them access to the competitive market and the innovation that will be made possible if SCB were offered as an additional billing option. All customers should have the same access to competitive market alternatives regardless of income level or participation in a utility's customer assistance program. Consumers – regardless of financial status – are in the best position to make a value judgment about their energy supply choices and, with SCB, EGSs would compete to serve low income customers by offering innovative commodity and non-commodity products that may appeal to the specific needs of this customer segment.

In deference to the concerns expressed by various consumer advocacy groups and the Commission's actions to restrict the shopping ability of some customers participating in EDC customer assistance programs, an option that the Commission may wish to consider is a "phase-in" approach for making SCB options available to low-income customers. Taking this approach would enable the Commission and other interested stakeholders to acquire a better level of confidence with the ability of EGSs to manage billing and collections for their customers prior to making SCB available to all segments of the population. To be clear, RESA does not view this as necessary, but concerns related to this specific segment of the population should not be relied upon as a reason to abandon the concept of SCB altogether because there are ways to craft a path forward that address the expressed concerns.

D. Collections - Termination: EGSs Offering SCB Take The Risk Of Uncollectible Expense And Must Have Access To All Tools Available For Managing That Risk As EDCs Have Today

As will be discussed further below in Section II.D.1, consumers benefit from assigning the risk of uncollectible accounts expense to EGSs in the SCB model because the overall amount of non-payment expense that EDCs recover from all utility ratepayers will be reduced. This is because EGSs cannot recover their uncollectible amounts from all utility ratepayers like EDCs. Rather, each EGS offering SCB will have to determine how to absorb the costs of non-payment and, because they are competitive market entities, will be constrained from passing on the expense through the prices offered to consumers.

For EGSs to be willing to take on this risk, however, EGSs offering SCB must have access to the same collections tools available to EDCs today. In other words, under the current UCB/POR model, EDCs purchase the receivables of the EGSs and have the ability to pursue termination of service when the customer does not pay. Likewise (as discussed further below in Section II.D.2), when the EGS purchases the receivables of the EDC, it too must have the ability to pursue termination of service when the customer does not pay. A failure to create this parity between the existing UCB/POR and SCB/POR processes in terms of collections will result in EGSs unlikely to offer SCB at all – depriving consumers access to the innovation and that can be fostered through the availability of SCB.

Finally, as discussed more in Section II.D.3 below, concerns with giving EGSs the power to terminate are unfounded given the competitive and regulatory environment in which EGSs must operate.

1. All Consumers Benefit From Assigning The Risk Of Uncollectible Accounts Expense To EGSs In The SCB Model

Most POR programs in Pennsylvania are non-recourse, meaning that the EDC purchases the receivables of the EGS and bears the full collection risk. In other words, the EDC takes on the responsibility for collecting payments from the EGS's customers and the EGS is not required to pay the EDC for any unpaid "bad debt." Rather, EDCs have the right to seek recovery of the bad debt from all utility ratepayers. Through the UCB/POR model, all customers are at risk of paying higher utility charges to pay for the bad debt expense of those customers who have not paid their bills. The less efficient an EDC is at minimizing its bad debt expense, the more all customers are asked to pay to cover this inefficiency.

The SCB model would not operate in the same way because EGSs, unlike EDCs, do not have the ability to seek cost recovery for bad debt expense from all utility ratepayers. Rather, EGSs must absorb these costs or factor them into their products and pricing. Notably, though, because they operate in a competitive environment without a captive customer base, EGSs would face constraints regarding how much of these costs could be passed on to their customers.[29] This is a very important distinction to keep in mind when considering how to evaluate concerns related to managing collections and terminations under SCB because this significant structural difference has a direct impact on the costs all customers are expected to bear related to bad debt expense. Viewed in this light, the SCB model is superior because it lessens at least some of the socialized cost of bad debt that would otherwise be passed on to all utility ratepayers.

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[29] Because they already operate in a competitive market and in jurisdictions where they are able to offer SCB, EGSs have developed efficient billing and collection practices to manage the negative impact of bad debt expense on their business and/or the products and services they can offer. However, as discussed more in Section II.D.2, a key component of these practices must include the ability to terminate service for non-payment.

2. EGSs Offering SCB Must Have Access To The Same Collections Tools Available To EDCs Through The UCB/POR Model

In addition to their ability to seek cost recovery from all utility ratepayers for bad debt expense under the existing UCB/POR model, EDCs also have the ability to terminate service to non-paying customers (including EGS customers). As discussed in the previous section, EGSs offering SCB would assume the risk of bad debt and would not seek recovery of bad debt from utility ratepayers. However, the only realistic way EGSs could assume this risk is by having the same right to terminate service to non-paying customers as EDCs are able to do through the UCB/POR model.

In the same way that the current UCB/POR model permits all of the bad debt expense to be equally treated (i.e. borne by all utility ratepayers), the SCB/POR must provide parity regarding the collections tools available. When the EDC purchases the receivables of the EGS through the UCB/POR, it has the ability to manage bad debt through the right to terminate service for non-payment. Shifting the risk over to EGSs through SCB, but not permitting them to terminate service for non-payment, denies EGSs the tools necessary to manage the bad debt risk they are now required to assume. It is not likely that this type of SCB model would be attractive for EGSs such that they would be willing to participate. In a marketplace where the EDC continues to be the default service provider and enjoys the brand recognition that it has built over decades of monopoly service – due in large part to the ability of the EDC to send a bill to every customer every month – allowing disparities between how the EDCs and the EGSs can manage their uncollectible accounts exposure only deepens the unfair advantages that EDCs currently enjoy and is a disservice to customers.

It is also important to remember that terminating service to customers is not something that EGSs would prefer to do. At the core, EGSs want to keep their existing customers and

service termination is more likely to be the "last resort" for EGSs whose primary purpose would be to make the situation feasible for the customer to continue with the EGS rather than terminating service altogether. Thus, EGSs would likely seek to offer the customer a different product or service that may be more affordable. EGSs would also develop innovative credit management solutions in an effort to retain customers. This could include a variety of bill payment and deposit options that will help customers pay their bill and remain with the EGS. The ability to terminate service to non-paying customers, however, is fundamental for SCB to work because it is an important tool to motivate the non-paying customer to enter into an alternate arrangement with the EGS.

3. EGSs Will Comply With Commission Requirements

Regarding concerns about the ability of EGSs to satisfy the Commission's specific collections and terminations practices, it is important to remember that EGSs are well-versed in managing differing and complex regulatory requirements and maintaining compliance with these requirements. Many EGSs operate in multiple jurisdictions that have varying rules and regulations that must be followed. An EGS that repeatedly violates a state's specific rules will face costly consumer complaints, regulatory actions, and the possible revocation of its authority to operate. As an EGS's very survival depends on acquiring and maintaining customers and remaining in good standing to operate, there is no reason to expect that EGSs issuing a consolidated bill will be unable or unwilling to comply with Pennsylvania's specific rules and regulations related to collections and terminations.

While EGSs are not "public utilities" as that term is defined under Pennsylvania law, Pennsylvania's retail electricity market – and all EGSs operating in it – is governed by a significant number of rules and regulations and directives of the Commission. These requirements are critically important to ensuring the functioning of the competitive market with

appropriate customer protections. Qualified EGSs that have met the prescribed requirements of the Commission to offer SCB will be obligated to follow all rules – including those the Commission would create to govern SCB as well as those governing disconnection for non-payment. The Commission has a long history of adopting and refining rules. Over time as the market has evolved, the regulatory framework continues to ensure that critical consumer protections are maintained and regulatory processes already exist to address future unforeseen issues that may occur (including an SCB supplier exiting the market). In sum, neither competitive providers nor the competitive market in which they function are "unregulated;" the Commission maintains the ability to create the rules under which EGSs must agree to operate and this provides a sufficient framework within which to implement SCB.

E. Mechanics: The Operational Requirements To Implement SCB Have Been Implemented In Other Jurisdictions And Can Be Adapted To Pennsylvania

While developing the operational protocols necessary to implement SCB will require Commission assistance and a collaborative effort from all stakeholders, this is not an unsurmountable task without any precedent from which the Commission and stakeholders can draw solutions. Many RESA members issue millions of supplier-consolidated bills monthly to customers in Texas, Illinois, Georgia and jurisdictions outside the United States. The Texas market began competitive supplier billing on the first day of market opening on January 1, 2002 – meaning this jurisdiction has had sixteen years of experience with SCB and many of the suppliers operating in Texas are also licensed in Pennsylvania. Thus, the technical processes that are needed to implement SCB have already been developed and tested and would only need to be studied and revised to work within the Pennsylvania market.

Pennsylvania already has a well-developed working group process that help establish the practical, operational, and electronic transaction standards for implementing SCB. Combined

with the leadership and technical experience of Commission staff from the Office of Competitive Market Oversight ("OCMO"), the Electronic Data Exchange Working Group ("EDEWG") enables the industry to work together to develop the necessary electronic protocols. EDEWG is co-chaired by a representative from an EGS and a representative from an EDC. EDEWG meets on a regular basis and all are invited to participate. EDEWG is assigned specific tasks by the Commission which the members work to resolve and then submit their recommendations to the Commission for final approval. The Commission resolves any disputes and ultimately approves the common business processes and standard communication protocols necessary for effective utility and supplier interactions.

Over the past two decades, this process has successfully developed the various protocols necessary for EGSs and EDCs to process customer enrollment, instant connects, seamless moves, account maintenance, billing, payments, and sharing of customer usage information. In fact, EDEWG has also already scoped out many of the transactions and protocols required for SCB.[30] Given all the work that has already been done and the fact that other jurisdictions have successfully implemented SCB,[31] there is every reason to be confident that existing processes can successfully develop the operational protocols necessary to implement SCB.

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30 EDEWG convened in April 2010 to discuss SCB in the context of EDI requirements and issued a report in September 2010. A copy of this report is available at: http://www.puc.pa.gov/electric/pdf/OCMO/SCB_EDEWG.pdf

31 In Maryland, for example, the utilities have expressed their willingness to work through the operational implementation issues consistent with the direction provided to them by the Commission. See, Response to Bench Request and Reply Comments of Baltimore Gas and Electric Company, Potomac Electric Power Company, and Delmarva Power & Light Company, Case No. 9461, dated March 7, 2018 at 3 ("The Joint Utilities will develop specific details with the stakeholders based on the direction of the Commission.") Comments available at: http://webapp.psc.state.md.us/newIntranet/Casenum/NewIndex3_VOpenFile.cfm?FilePath=C:\Casenum\9400-9499\9461\\32.pdf.

F. Possible Alternatives: No Other Alternative To SCB Will Achieve The Degree Of Positive Customer Impacts That Will Result From Implementation Of SCB

SCB is the optimal way to enable EGSs to create a direct relationship with their customers that will empower those customers to drive the innovation that they want. Any other alternative will not achieve the same end result and will have the negative effect of enabling EDCs to further entrench their already existing competitive advantage.[32] For these reasons, RESA respectfully urges the Commission to implement SCB and maintain the focus of all stakeholders on designing the pathway to achieve that end result.

III. CONCLUSION

Retail markets are not static and the Commission must continue to evolve its policies to reflect market realities and experiences. If the telecommunications industry were still stuck in the billing models of the early days of telecommunications restructuring, today's consumers would not have services like Voice-Over-Internet-Protocol ("VoIP"), triple-play bundles with their cable television service or unlimited free international long distance calling. Given today's current market realities and the consumer-driven innovation that SCB can provide, RESA urges the Commission to maintain its national leadership position by continuing to evolve its retail market design policies and direct the implementation of important and constructive retail market design structures like SCB. The desire of a provider of a product to directly bill the consumer of that product is not a novel idea nor should it be viewed as a "radical" idea in the context of the retail electricity market. Consumers are billed this way every single day by every other provider of goods and services they consume. In short, they expect it. Thus, finding ways to empower

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[32] See Section II.A.2 for a fuller discussion of this issue.

consumers should be a shared goal among regulators and stakeholders because this is the best way to serve the public interest.

Respectfully submitted,

Deanne O'Dell, Esquire
(Pa. Attorney ID No. 81064)
Kristine E. Marsilio, Esq
(Pa. Attorney ID No. 316479)
Eckert Seamans Cherin & Mellott, LLC
213 Market Street, 8th Fl.
Harrisburg, PA 17108-1248
717 237 6000
dodell@eckertseamans.com
kmarsilio@eckertseamans.com

Date: May 4, 2018

Attorneys for the Retail Energy Supply Association

Attachment A

Restructuring Recharged

The Superior Performance of Competitive Electricity Markets 2008-2016

Philip R. O'Connor, Ph.D

April 2017

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INTRODUCTION

It's been a solid two decades since state and federal policymakers began taking steps to end the traditional monopoly regulatory approach to determining electricity prices for consumers. Twenty years ago federal regulators adopted rules promoting competition in regional wholesale electricity markets and the first states adopted programs to promote competition in retail electricity markets.

Providing considerable historical context, our study's author observes that traditional monopoly regulation served the nation well for about a century. But beginning in the 1970s the monopoly fabric started to fray. The resulting sweeping regulatory reforms of the railroad, trucking and telecommunications industries set the stage for similar reforms introducing competitive market forces into the energy sector.

These reforms congealed in the 1990s with considerable momentum nationally for competition in electricity—that is until the well-intentioned but poorly-conceived market restructuring in California imploded. This prompted a number of states to reconsider opening their retail markets to competition. To their credit more than a dozen states and the District of Columbia persevered, adopting electricity market restructuring programs that avoided the pitfalls of California and benefited the interests of consumers and the overall economy and the environment.

As the study explains, we now have a strong data set of two decades' experience with two sets of states:

- Those that adopted competitive reforms promoting market forces in the electricity sector, and
- Those that chose to maintain the traditional regulated monopoly approach.

The data are compelling, showing that consumers are considerably better off with competition than monopoly regulation:

- Electricity prices in states with competitive retail markets have trended downward while prices have risen in states with monopoly regulation.
- Power plant investment in competitive markets is tempered by market forces, while in monopoly states new plant investments are made on the backs of captive ratepayers who are on the hook financially if the investment proves to be a poor economic decision.
- The power plants in competitive markets tend to operate more efficiently, because they are dependent on returns from the marketplace. In contrast, power plants under monopoly regulation receive their investment plus a rate of return regardless of the performance of the power plant. The efficiencies gained by power plants in competitive markets therefore produced not only economic but environmental gains.

As our authors note, the compelling disparity between competition and monopoly regulation is setting the stage for a second round of electricity restructuring as states once again confront the fact that monopoly regulation is not ideal because it serves the interests of utility investors over the interests of electricity customers. So this has become a driving force for states to consider a competitive market in favor of the state's citizens.

But perhaps the stronger driving force behind this pending second wave of competitive electric industry restructuring is the panoply of consumer-empowering technological innovations that promise to further transform the way consumers use electricity and interact with their electricity provider. These technologies will prosper in competitive states where monopoly barriers to entry have been removed.

This trend will be driven further in competitive markets as competing suppliers vying for customers innovate to differentiate themselves from their competitors. Real-time pricing complemented by state-of-the-art meters and thermostats will empower customers as never before. Monopoly regulation is inherently inhospitable to this wave of innovation, our author points out.

The bottom line is that consumers want and expect choices. They have them in nearly every other area of their lives. That is why there is a dizzying array of colorful options as we walk down the aisle of our neighborhood grocery store. That's why automobiles come in numerous and customizable configurations and colors, and why we have innumerable telecommunications options beyond the old black rotary phone that prevailed under monopoly regulation. Competition is at the heart of our economy and way of life everywhere—except electricity.

As we prepare to soon enter the third decade of the 21st century, it makes little sense to cling to a monopoly regulatory model for electricity that is a vestige of 19th century economic thinking and a barrier to the efficient clean-energy economy that consumers and policymakers seek to embrace.

Darrin Pfannenstiel
President
Retail Energy Supply Association

OVERVIEW

As retail electricity competition in the United States reaches two decades since its commencement, a second wave of electricity industry restructuring is gathering force. The incompatibility of the traditional vertical monopoly model with new, converging conditions makes forward-looking reforms a necessity.

- The allocation of electricity generation and business **risks to consumers** in regulated monopoly states leads to inefficient consumer and investor decisions which have led to overall increases in electricity prices relative to choice states.
- The electric industry has endured a **decade of flat-load** and there is no end in sight.
- **Generation dys-economics** have rendered obsolete the traditional verities of power plant investment based on a belief in predictable fuel prices, technology trends and consumer preferences.

Digital customer sovereignty is overpowering the idea that customers are merely "ratepayers" who can be easily categorized and limited to a few restrictive pricing, product and service offerings that lack innovation and the ability to empower customers in today's digital environment. There is compelling evidence of the superior economic performance since 2008 of the 14 competitive retail jurisdictions, when compared to the 35 monopoly states:

- Prices in competitive states have trended downward while in monopoly states prices have been rising, producing a double-digit gap in average price changes when adjusted for inflation.
- Competitive markets have attracted investment in generation at rates comparable to monopoly states.
- Competitive states increased production well above changes in load, while in monopoly states production has declined relative to load growth.
- Power plants in competitive states have higher capacity factors than plants in monopoly states and are taking better advantage of low natural gas prices.

The impending second wave of restructuring in monopoly states will be characterized by:

- The unbundling of delivery and power supply rates;
- The devolution of power plants from utility rate base to competitive status;
- Fair stranded-cost compensation for utilities exiting monopoly supply;
- Neutrality in the treatment of distributed energy resources; and
- The opportunity for new entrants and utilities to provide innovative products and services to customers in a competitive environment.

NOTE ON DATA SOURCES

There are two key sources of the electricity industry data used in the preparation of the illustrations in this paper. Figures 4, 5 and 6 draw on information from the annual report on competitive electricity accounts and loads issued by DNV GL, the authoritative industry information firm. Figures 7 through 25 rely of data from the U.S. Energy Information Administration.[1]

SECTION 1: PRELUDE TO COMPETITIVE RESTRUCTURING 1975-1995

The first wave of competitive electricity industry restructuring in the late 1990s was preceded by a tsunami of regulatory reform in telecommunications, transportation and energy network industries.

A bipartisan movement commencing in the late 1970s revised regulatory policies to embrace change rather than to resist fundamental shifts in technology, consumer attitudes and economic relationships. Policy reforms at the federal and state levels provided a model for the introduction of competition and customer choice into the electricity sector.

The movement from regulation and central planning to competitive markets in energy was intimately connected to global conditions—especially the international petroleum market and the Cold War. The struggle between socialist central planning ideology and capitalist free market philosophy provided context and language for what would become the debate over the merits of economic regulation versus competitive market structures in the energy sector on the domestic front.

Converging Conditions—Energy Price Surges & Stagflation

A cataclysmic harbinger of things to come was the oil embargo following the Yom Kippur War in late 1973. For

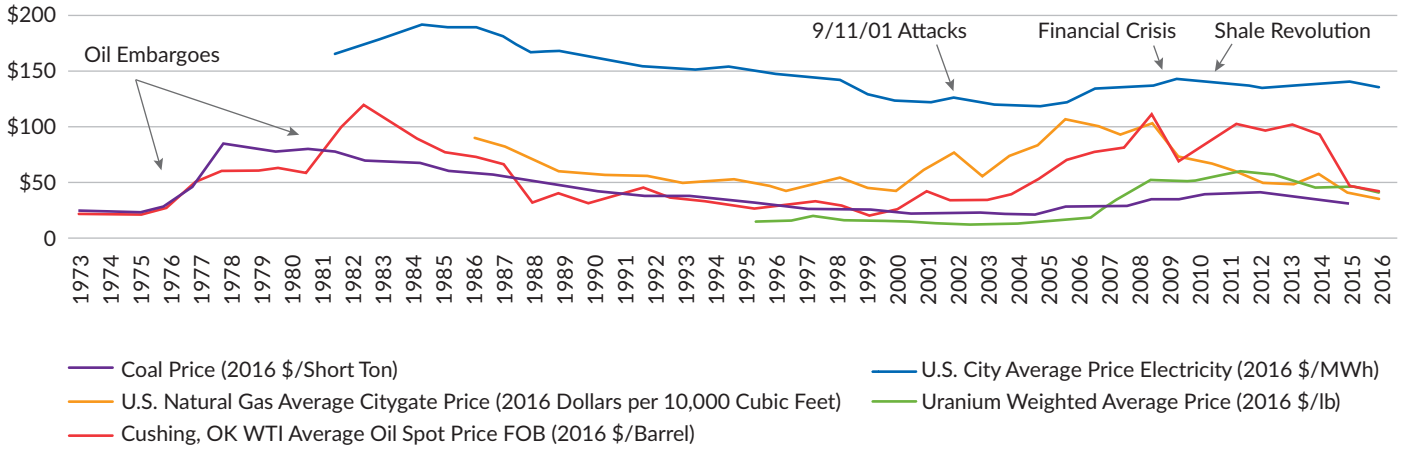
nearly a decade afterward, U.S. public policy was hostage to the "energy crisis."[2] In a succession of presidential messages and addresses between 1971 and 1980, Richard Nixon and Jimmy Carter anticipated and responded to the original 1973-74 embargo and the disruption following the 1979 Iranian revolution.[3]

Dramatic increases in oil and other fuel prices in domestic and international markets initially precipitated well-intentioned yet often misbegotten policies, producing adverse unintended results. Energy price increases were both a cause and a result of broader economic trends, the most significant of which were high interest and inflation rates.

The oil price surges in the 1970s were accompanied by corresponding dramatic price increases in coal and natural gas. As shown in Figure 1, inflation-adjusted prices for raw fuels were at historic, economic shock-inducing levels. Further, natural gas was in short supply for industrial processes and for winter home heating. There were long lines at gasoline service stations and rationing not seen since World War II. Electricity prices were driven up as fuel prices rose. Coal prices experienced a different dynamic as Western surface mining began to take market share, eventually pushing coal prices downward.

Figure 1: Energy Commodity Price Trends

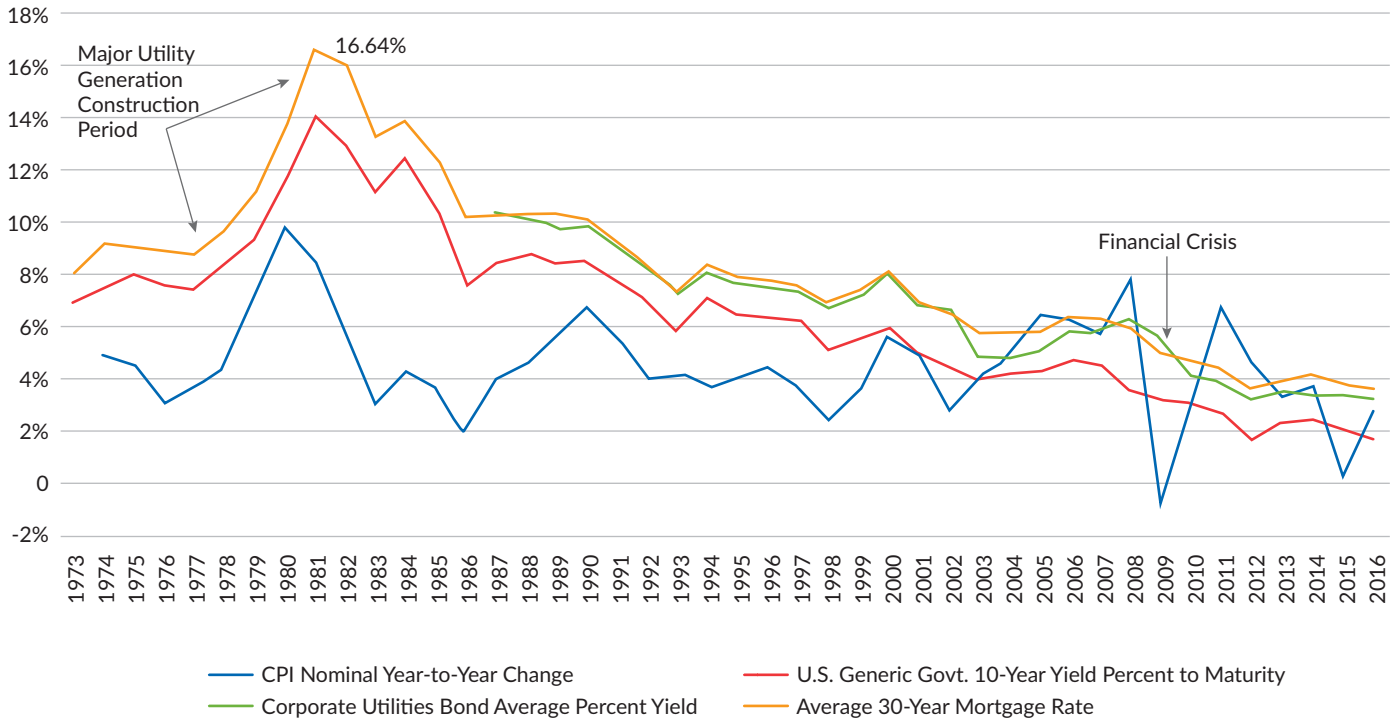
Events in the 1970s caused unprecedented energy prices



Steep increases in energy prices reverberated across the economy, interacting with other conditions and policies. Figure 2 shows the steep rise in inflation and the cost of money from the mid-1970s and into the early 1980s. There was an especially pernicious impact on the electric industry, which was in the midst of a major power plant construction program. Utility borrowing costs and bond yields tracked closely with general inflation, government bond yields and home mortgage interest rates.

Figure 2: CPI, Bond, Mortgage Rate Trends

Energy shocks contributed to extraordinary high costs of funds



From Regulation to Markets in Network Industries

The dividing line between success and failure of policies aimed at addressing the troubles that emerged in the 1970s is that more regulation failed, while reliance on market forces generally yielded favorable results.

It has been nearly four decades since the 1978-1982 "deregulation" of airlines, railroad, interstate trucking and intercity bus service. While each of these transportation segments had its own historical path, all were intimately connected. Their respective regulatory structures had evolved out of the seminal experience of railroad regulation inaugurated in the late 19th century. The logic and procedures of railroad regulation were extended to other modes of transportation, in every case becoming inexorably more bureaucratized and byzantine.

Regulated network industries facing changed conditions have often asked regulators to reinforce the boundaries of their protected markets. For example, potential competitors or even customers seeking alternatives have been subjected to regulatory proceedings characterized by delay and expense that often resulted in prohibition or onerous conditions. Incumbent players often opted for "small ball" regulatory accommodations aimed at relieving the pressure of external conditions. For example, incumbent utilities have requested flexibility in providing customized pricing for certain large customers with the ability to shift production to other locales, or to self-build rather than buy service or goods from the regulated industry. Other customers would keep paying higher prices and might be required to make up for the price reduction for favored customers.

While accommodation measures delay the day of reckoning, they share the central flaw of adherence to a regulatory model that is out of step with new conditions. Preservationist measures to shield monopolies from the impact of external conditions, which routinely fall short, serve to inform customers, policymakers, regulators and incumbents of the need for fundamental reform.

Albro Martin, in his definitive 1992 economic history of the railroads,[4] described the problem of the highly prescriptive and rigid railroad model that had evolved for network industries:

> *The view of regulatory agencies is static; life, in or out of the regulated enterprises, is dynamic. Change—subtle, gradual, and, one hopes, prepared for—is the actuality. Commissions act as though nothing changes until they rule. What is more accurate is that everything changes while the effective forces*

in society are chained to the mast, and, as the poet says, we are left with a sense of loss. This has always hampered economic growth in America, especially when the vitality of critical underlying services is concerned.

The movement toward competitive markets in regulated network industries also extended to oil, telecommunications and then gradually to natural gas.

An Unbroken Line of Federal Regulatory Reform

Table 1 shows the sequence of federal policies that unshackled American consumers and large elements of the economy from complex regulatory rigidities that had developed for over a century. At the same time, there also was significant liberalization of economic regulation and cartel-style pricing in financial services.[5]

TABLE 1: TIMELINE OF FEDERAL DEREGULATION OF MAJOR NETWORK INDUSTRIES

Industry	Policy	Key Features
Airlines	Airline Deregulation Act of 1978	Airfare deregulation, liberalization of market entry and exit, emphasis on safety, eventual dissolution of Civil Aeronautics Board.
Railroads	Railroad Revitalization & Regulatory Reform Act of 1976	Set guidelines for eased regulation, greater pricing freedom, implemented Conrail.
Railroads	Staggers Rail Act of 1980	Pricing freedom unless lack of competition and effective elimination of collective ratemaking, access to rail networks of competing carriers.
Interstate Trucking	Motor Carrier Act of 1980	Freedom from bureau pricing, liberalized route entry and exit.
Oil	Executive Order 12287: Decontrol of Crude Oil and Refined Petroleum Products—January 1981	Ended price controls on domestic crude and refined products.
Intercity Bus	Bus Regulatory Reform Act of 1982	Created zones of price freedom, liberalized entry and exit and route determination, allowed federal pre-emption.
Telephone	1982 Modified Final Judgment Consent Decree in antitrust suit *United States vs. AT&T*	Set a schedule for separation of long distance and local exchange service and 1984 break-up of AT&T.
Telecommunications	Telecommunications Act of 1996	Modernized regulation under Communications Act of 1934 by moving from an emphasis on accommodating monopoly to fostering competition by liberalizing entry and exit and pricing oversight in voice and data transmission and in cable television.
Natural Gas	Natural Gas Policy Act of 1978	Aimed at alleviating shortages, set new maximum lawful prices for new production, and reduced barriers between intra- and interstate markets.
Natural Gas	1985 FERC Order 436	Pipelines would provide non-discriminatory transport of customer-owned gas at prices negotiated with producers
Natural Gas	Wellhead Decontrol Act of 1989	Wellhead price decontrol.
Natural gas	1992 FERC Order 636	Mandated unbundling of pipeline gas commodity and transport services, essentially ending gas merchant sales; full nondiscriminatory access including storage.

The central reality is that American public policy has been on a journey toward an increased reliance on market forces and customer choice. The magnitude of the changes in regulatory policy is evident in the reduction of the percentage of GDP burdened by price regulation—from nearly 12% in 1975 to less than 3% in 2006.[6]

What remains of prescriptive price regulation is now a vestige of simpler times. Electricity is the main outlier, accounting for a large portion of the remaining scope of government price regulation.

Network industries that were pushed into the world of competition and customer sovereignty interacted with one another to accelerate change. The market demanded greater efficiency and more rapid innovation in providing services to customers in ways that regulation could not accommodate. For example, airline deregulation propelled development of vastly improved jet engine turbines for better fuel efficiency, laying the foundation for the scaling up of turbine technologies to compete in electric power production. Thus, as a free market in fuels produced massive quantities of low-priced natural gas that could be moved over an open-access pipeline network, large and efficient natural gas turbines were there to compete against coal-fired boilers.

As regulatory reform in network industries matured in the two decades following the late 1970s, it was time to address the obvious question—What about electricity?

The central reality is that American public policy has been on a journey toward an increased reliance on market forces and customer choice. The magnitude of the changes in regulatory policy is evident in the reduction of the percentage of GDP burdened by price regulation—from nearly 12% in 1975 to less than 3% in 2006.

SECTION 2: THE TRANSITION TO COMPETITION IN THE ELECTRIC INDUSTRY 1996-2008

It was inevitable that electricity, the most ubiquitous and foundational network industry, would experience the competition debate. The successful reform experience in other network industries naturally led to consideration of how market principles could be applied to electricity.[7]

Legislation at the state level to allow retail electricity supply competition, starting in the late 1990s, was preceded by more than a decade of questioning, discussion and debate.[8] The movement to electric retail choice was neither precipitous nor incautious. State and federal governments have their own spheres of regulatory authority over electricity, as has been the case with natural gas and telecommunications. The full flowering of retail competition and customer choice has required complementary reforms at both levels.[9]

Federal Electricity Restructuring Policy

Congress passed the 1978 Public Utility Regulatory Policies Act (PURPA) during the same flurry of reform activity that modernized regulation of airlines, railroads, trucking and started the reform process in the natural gas industry. PURPA required electric utilities, which were almost universally vertically integrated monopolies at that time, to purchase power from qualifying facilities (QF) that satisfied various conditions. While the primary aim of the QF provision was to encourage the use of such resources as biomass and small hydro, the key result was to produce practical evidence that the modern grid could accommodate generation sources that were neither owned nor operated by traditional monopoly utilities.

Federal electricity restructuring policy developed incrementally, focused on the wholesale (sale for resale) and bulk-transmission segments of the industry. Meanwhile, the traditional regulatory division of labor was left in place, with retail supply and delivery under state jurisdiction.

Table 2 shows the sequence of Congressional and Federal Energy Regulatory Commission (FERC) actions affecting the wholesale electric generation industry through 2012. The stepwise federal approach gradually provided for market-based pricing of wholesale electricity transactions, open-access transmission free of discrimination and preferences, and development of competitive markets for ancillary services and demand-side resources. Federal regulators created a framework for the establishment of large, regionally-organized competitive markets for capacity and energy, which are also known as Regional Transmission Organizations (RTOs).

TABLE 2: MAJOR FEDERAL ELECTRICITY RESTRUCTURING POLICIES 1978-2012

Industry	Key features
Public Utility Regulatory Policies Act (PURPA) 1978	Utilities required to purchase power from non-utility generators at state-set avoided cost. Goals were greater efficiency in energy production through cogeneration and through electricity and gas conservation by consumers.
FERC NOPRs (1988)	Although withdrawn after initial comments, proposed rules for competitive wholesale bidding, expansion of independent power production and determination of avoided costs under PURPA, thus providing the framework for the eventual movement away from traditional, bundled utility transactions at the wholesale level.
Clean Air Act Amendments 1990	Tradable allowances for coal-fired power plants to meet gradually-declining sulfur-dioxide emission limits; created a national market model for electricity industry environmental compliance.
Energy Policy Act of 1992	Created new class of independent power producers, Exempt Wholesale Generators (EWG), exempt from various restrictions under the Public Utilities Holding Company Act of 1935 (PUCHA) renewable electricity production tax credit.
FERC Electricity Mega NOPR (1995)	Proposed rules for competitive wholesale electricity markets with open-access transmission and the mitigation of market power due to generator control of transmission and provisions for stranded cost recovery by incumbent utilities affected by competitive restructuring.
FERC Order 888 (1996)	Promoted wholesale electricity competition through open-access nondiscriminatory transmission access and stranded cost recovery.
FERC Order 889 (1996)	Created the Open-Access Same-Time Information System (OASIS) for users to electronically arrange for open-access transmission services.
FERC Order 2000 (1999)	Established principles for Regional Transmission Organizations (RTOs), independence from market participants, geography, authority over dispatch and short-term reliability and other grid operations.
FERC Order 2003 (2003)	Provided standardization of generator interconnection agreements and procedures.
Energy Policy Act of 2005	Repealed Public Utilities Holding Company Act of 1935, easing obstacles to mergers, other restructuring; renewable electricity production tax credit; required net metering offer by public utilities; Department of Energy (DOE) to designate National Interest Electric Transmission Corridors.
FERC Order 674 (2006)	Conditions for market-based wholesale rates for public utilities.
FERC Order 890 (2006)	Set standards of conduct to prevent undue discrimination and preferences in open-access transmission.
FERC Order 697 (2007)	Provided for market-based pricing of transmission ancillary services.
American Recovery & Reinvestment Act of 2009	Grants for accelerated smart grid and advanced meter deployment; renewable production tax credits.
FERC Order 745 (2011)	Established standards and compensation for demand response by customers in RTOs.
FERC Order 1000 (2011)	Standards for RTO transmission planning and cost allocation.

Over three decades, federal policymakers and regulators were adopting new policies promoting market forces that deliver greater value to customers and society than does traditional regulation.

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Precursors to Competitive Electricity Reform in the States

As pressures on the traditional vertical monopoly increased in the late 1980s and through the 1990s, there were incremental accommodations by state regulators. However, these accommodations kept in place the traditional principle that most business risk associated with electricity generation would continue to rest on the shoulders of consumers. Regulatory modifications included fuel adjustment clauses, special "economic development" rates to retain at-risk load, and including in rates the costs of construction work in progress (CWIP).[10]

By the mid-1990s, there was a substantial body of opinion among academics, state and federal policymakers, energy regulators, utility managers, investors, and business consumer organizations that there was a strong case for electricity competition at the customer level. The general influence of regulatory reform in other sectors was being felt in electricity. Conditions were upsetting the universal acceptance of the vertically integrated monopoly structure and operation of the electricity supply and delivery industry.

Specific conditions, which converged in more pronounced ways in California, Texas and in the states in the northeastern quadrant of the country, were incompatible with the methods of traditional monopoly regulation. Such factors included:

- Growth in electricity consumption had slowed considerably compared to the historical pattern. Strong demand growth had been a pillar of the industry's ability to rapidly expand the network while achieving lower per-unit pricing.
- As large-scale power plant construction projects that had suffered extended delays and budget overruns came to completion, significant rate increase requests engendered resistance.
- Political and environmental activism became a major force in the consideration of utility issues by state legislatures and regulatory commissions.
- Prices surged in response to the fuel and economic conditions of the 1970s and 1980s, creating disadvantages in retention of manufacturing and otherwise inhibiting job creation. There were significant differences in electricity rates between adjacent states and even within states across different utility service territories.
- Utility commissions disallowed large amounts of investment in newly-finished power plants for inclusion in utility rates for recovery from consumers.

Long-developing dissatisfaction with the performance of the monopoly model reached critical mass. The dysfunctional relationship between real-world conditions and a regulatory regime designed under quite different historical conditions became impossible to ignore.

Principles & Implementation of Retail Electricity Choice

As some states considered competition at the retail level, stakeholders had the benefit of experience of competitive reform in other sectors. It had been demonstrated that a monopoly model was no longer necessary for a well-functioning network industry.

The principles and methods of implementation listed in Table 3 were applied in a variety of ways by different states, reflecting local utility, consumer and political conditions. In every case, the adoption of electricity retail choice was a largely collaborative process aimed at attaining substantial stakeholder agreement.[11]

TABLE 3 - PRINCIPLES & IMPLEMENTATION OF RETAIL CHOICE 1995-2007

Principle	Implementations
Supply competition and freedom of pricing and customized pricing & service terms	Generators, wires utilities and marketers joined Regional Transmission Organizations (RTO) regulated by FERC to participate in capacity and energy markets; Competitive suppliers not subject to pricing tariffs; Customers allowed to join buying groups.
Delivery network open access to prevent discrimination and preference for affiliated generation	Traditional bundled service rates were separated into supply- and cost-based delivery components; Nondiscrimination rules were put in place and terms and conditions for all users were standardized; Electronic data interchange protocols between competitive suppliers and delivery utilities were set.
Adaptive industry and utility reorganization for efficiency and flexibility	Regulatory rules and procedures for utilities to form holding companies, merge, divest and spin off generation were simplified and accelerated.
"Stranded cost" recovery for above-market power plant utility investment	Utilities were allowed to impose non-bypassable charges on delivery service to reasonably compensate utilities for power plant investment approved under traditional regulation that has proven uneconomic.
Transition period to assure a smooth change from vertical monopoly service to customer choice	Customer eligibility for choice phased in, with larger customers going first and residential customers going last; Incumbent bundled rate freezes extended for set periods to hold harmless smaller customers; Stranded cost charges would end on a set date.

In just a few years, about two dozen states adopted policies aimed at opening electricity to retail competition. The movement was interrupted by the 2000-2001 California "energy crisis" resulting from a uniquely ill-designed and poorly-implemented market construct. While the direct effects were confined to certain Western states, the psychological and political fallout was national.

Two things are worth noting. First, no other state adopted California's poorly-conceived practice of mandated reliance on a day-ahead energy-only market for procurement of utility supplies for residential and other small customers. This market design did not allow for hedged or fixed-price transactions between counterparties.[12]

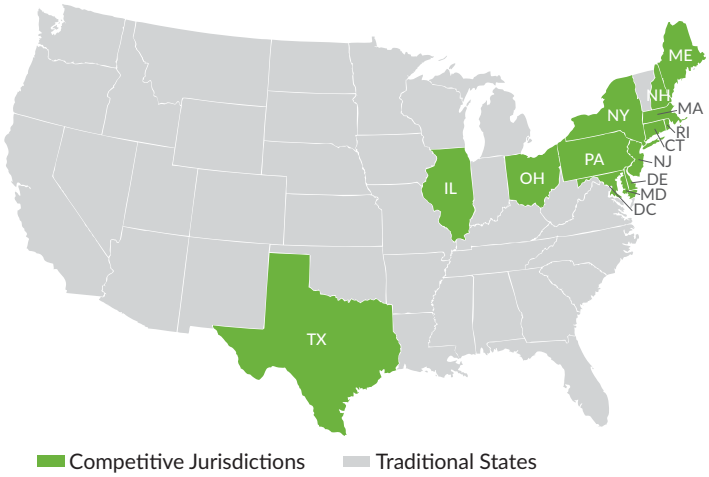
Second, California regulators and policymakers took precisely the wrong actions in the face of supposed supply shortages and price manipulation made possible by the poor program design. They exacerbated the situation by failing to adhere to prescribed transition rules and then locked in long-term contracts at high prices with state-backed power purchases. The repercussions of these decisions are still being felt today.

Despite California, in the end, 14 jurisdictions (13 states and the District of Columbia) persevered for nearly two decades in implementing retail customer choice. These 14 markets, shown in the map in Figure 3, account for one-third of U.S. electricity power production and consumption. Several other states—including California, Michigan, Arizona, Oregon, Nevada and Montana—allow limited portions of total load to be served competitively at retail, while denying the great majority of customers a choice of supplier.[13] These hybrid states are regulated largely under the traditional monopoly model and are treated accordingly in this paper.

Fourteen jurisdictions persevered for nearly two decades in implementing retail customer choice. These 14 markets account for one-third of U.S. electricity power production and consumption.

FIGURE 3: 14 Customer Choice Jurisdictions

These 14 jurisdictions (13 states plus Washington, D.C.) each have enabled Retail Choice for nearly all customers. These jurisdictions represent nearly 1/3 of all electricity consumption in the Continental U.S.



The Transitional Decade 1998-2007

Each of the 14 competitive jurisdictions proceeded at different speeds and in different ways during the transitional decade. By 2007, phase-ins of customer class eligibility and the collection of stranded-cost charges had reached their prescribed end points in most states. The transitional decade witnessed a cautious, stepwise approach that set the stage for ongoing evolution and growth in competitive retail markets. Regulation would continue to adapt to this new model.

By 2008, in competitively restructured states:

- Most utility generation had been divested to unaffiliated firms or devolved to competitive generation affiliates, resulting in nearly half of all productive capacity in the country being owned and operated by a diverse array of non-utility companies;
- Utilities had been compensated for "stranded" investment in uneconomic generation;
- Large numbers of retail suppliers were offering competitively priced supply;
- Millions of customers, especially in the commercial and industrial classes, had embraced supplier choice;
- Nearly a majority of consumption in the 14 customer choice markets was satisfied by non-utility suppliers;
- Default service programs, mainly for residential and small business customers not choosing an alternative supplier, were functioning well, providing competitively priced supply, usually procured by utilities in the market and divorced from traditional rate-of-return price regulation; and
- Billions of dollars in new generation investment was made at similar paces in both monopoly and competitive states.

SECTION 3: COMPETITION vs MONOPOLY IN THE FLAT-LOAD ERA 2008-2016

The flat-load era commenced just as electricity retail choice was completing its transitional decade. There has been little to no growth in electricity demand since 2008. The customer choice model is demonstrating its superiority in coping with new conditions, including flat load.

The discontinuities between 21st century real-world conditions and those that were predicates for vertically integrated monopoly electricity regulation in the 20th century, have accelerated, expanded and deepened.

The Foundations of the Electricity Monopoly Model

Regulatory frameworks arise out of historical circumstances. Customarily prescribed by law, regulatory missions evolve within the confines of the principles upon which they are founded. As conditions drift from the initial circumstances, regulation can operate to hinder rather than to facilitate the operation of the industry to deliver benefits to consumers. Over time, electricity regulation began to focus more on ritual than results. It became increasingly characterized by resistance to change and institutional protection rather than leveraging change to enable added value for consumers.

Understandably, electricity regulation shared much of the underlying philosophy and policy objectives of railroad regulation that developed in the 19th century:[14]

- Avoid the wasteful duplication of capital. There was no need for competing networks of wires and capital-intensive central station power plants.
- Provide greater certainty for investment by assuring a protected geographic market, especially since the technology of the day made electricity a largely local business.
- Facilitate dramatic increases in technical, operational and financial efficiencies by providing for rapid

expansion of the wires network, scaling up of power plants and consolidation in a fragmented early-stage industry.

- Protect customers from unfairly discriminatory pricing and service terms by monopoly providers.

For much of the 20th century, the local electricity utility monopoly, conceived of as a vertically integrated business, from generation to the consumer meter, and even beyond, was spectacularly successful. The accrued benefits for the American people during this time frame virtually defy calculation.

Changing Conditions in the Electricity Industry

The success of traditional vertically integrated monopoly depended largely on conditions that were favorable to success. Things have changed so dramatically that in the 21st century conditions are nearly the opposite of those that prevailed when the monopoly system was born. Table 4 juxtaposes key conditions that prevailed for many decades and those that have developed since the 1970s.

For much of the 20th century, the local electricity utility monopoly, conceived of as a vertically integrated business, from generation to the consumer meter, and even beyond, was spectacularly successful. The accrued benefits for the American people during this time frame virtually defy calculation. But things have changed so dramatically that in the 21st century conditions are nearly the opposite of those that prevailed in the 19th century when the monopoly system was born.

TABLE 4: KEY CONDITIONS IN THE ELECTRICITY INDUSTRY

	20th Century Certainties	21st Century Dynamics
Load	Rapid load growth and network expansion, high correlation between load and GDP, load grows faster than costs.	Slow/flat load growth, mature network, weak relationship between load and GDP, fixed costs spread over static sales.
Generation	Reliable expectation that the larger and more capital intensive a central station power plant, the lower are life-time fuel costs and greater the efficiency.	Natural gas price, flexibility and environmental advantages edge out coal. Distributed resources and renewables gain market share.
Pricing	Volumetric rates based on average costs aimed at recovery of a "revenue requirement" do not convey accurate cost-of-service or market-price signals.	Global competition, ability of firms to shift operations and attract load in flat market creates demand for market-sensitive prices.
Network	Delivery wires network designed as a one-way system to deliver power from central stations to load centers and customers.	Wires system is re-conceptualized, digitized and operated as a platform for transactions among buyers and sellers.
Customers	Captive customers have few alternatives and little ability to affect utility supply behavior or pricing. Customer contact, billing and others services are exclusive domain of the local utility. Information from meters limited and restricted.	Customers seek more tailored services and pricing for all services, including energy. Smart meters produce enormous amounts of valuable real-time data. Suppliers must be sensitive to consumer expectations.

The evidence is accumulating in two broad areas—pricing and innovation—that competitive markets are delivering tangible benefits to all classes of customers. Meanwhile, traditional monopoly is stuck in a cycle of increasing prices to compensate for flat load, thus further dampening load growth and forcing prices up even more. The rigid rules inherent in monopoly regulation also frustrate creativity and modernization.

Growth of Customer Choice

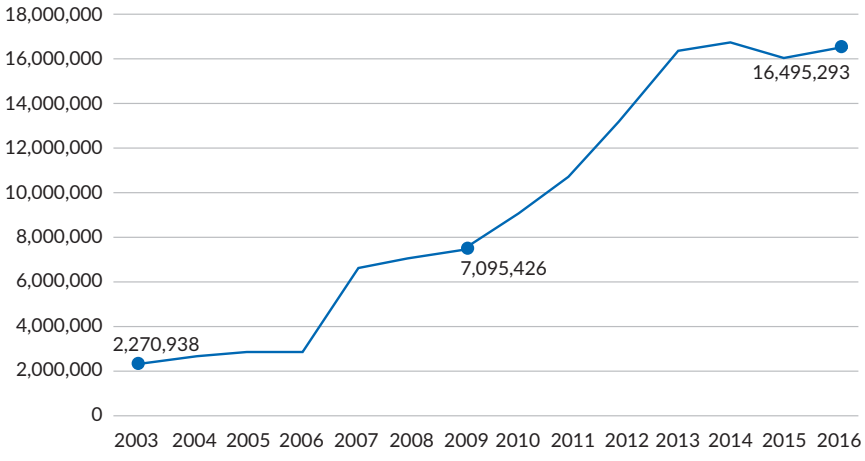
As shown in Figure 4, millions of residential retail electricity customer accounts are served with competitively sourced market-priced power supply. Between 2003 and 2008, the number of residential accounts served by non-utility providers more than tripled from about 2.3 million to 7.1 million.

Competitive accounts more than doubled again in the ensuing years. In the most recent four years, 2013-2016, competitively served residential accounts averaged more than 16.4 million annually.

Residential and small business customers taking utility default service are supplied with market-priced power procured in a competitive market. "Rate of return" pricing is a thing of the past in competitive retail jurisdictions.

Figure 4: Residential Switching Activity by Year

The number of switched residential accounts has grown seven-fold between 2003 and 2016



Commercial and industrial customers have embraced the opportunity to do business with competitive retail electricity suppliers. Consumers are responding as they did when other network industry service providers in natural gas, telecommunications and all forms of transportation were allowed to vigorously compete and innovate.

Figure 5: C&I Switching Activity by Year

More than 3 million C&I accounts are now served by non-utility suppliers

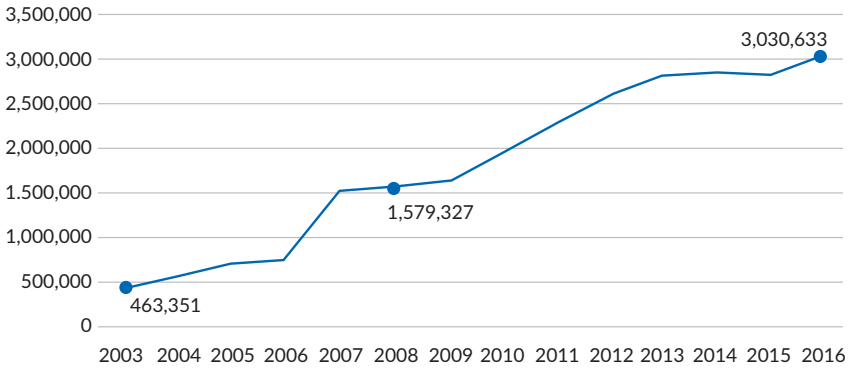


Figure 5 shows that between 2003 and 2008, the number of C&I customers served by non-utility suppliers grew 240%, from 436,000 to nearly 1.6 million. Competitive C&I accounts nearly doubled again between 2008 and 2013. In each of the four years, 2013-2016, competitive C&I accounts averaged more than 2.9 million, exceeding 3 million in 2016. C&I customers that have elected to take utility default service are billed at "rates" derived from market-based purchases in the competitive wholesale market.

In 2016, 72.3% of load eligible to switch in the 14 customer choice markets was served competitively with retail pricing and products by non-utility suppliers. Most of the remaining load in the 14 markets, a little less than one-third of total eligible load in those jurisdictions, is served with market-priced supply procured in the competitive wholesale market by wires utilities acting as default providers.

The nature of utility default service is often misunderstood or mischaracterized as the equivalent of traditional utility "rate of return" tariffed service under the monopoly model utility provided prior to restructuring. It is significantly different in several ways:

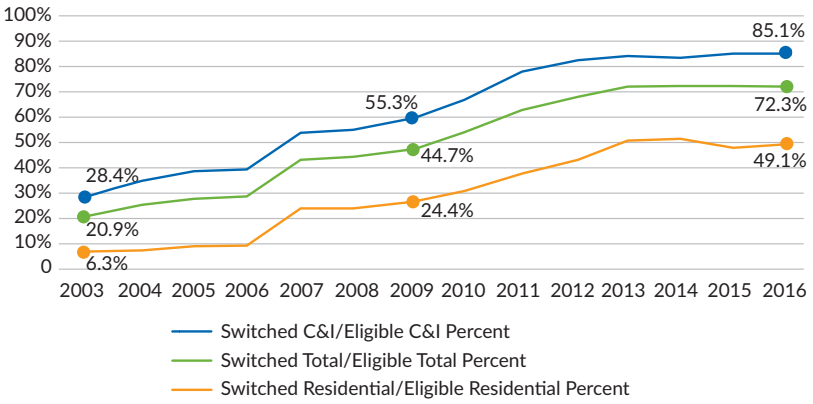
- Wires-only utilities that provide default service to non-choosing residential and small business customers generally do not earn a profit from providing the market-priced supply;
- Customers eligible for default service are generally free to switch from the utility and to choose service from a competitive supplier; and

- Default service supply is customarily procured through forward purchases made in a competitive market.

Figure 6 shows the upward trend in residential and C&I retail load served by non-utility suppliers.[15]

Figure 6: Percentage of Load Switched in the 14 Competitive Jurisdictions

The great majority of eligible load in the choice jurisdictions is served by competitive suppliers



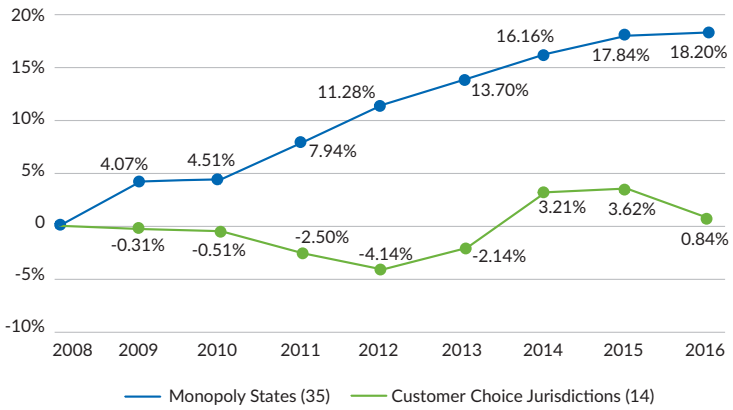
whereas a local wires delivery network still can be largely regarded as a natural monopoly. In competitive electricity markets, customers are in a similar position as they are in with other services and products.

The difference in risk allocation between monopoly and choice regimes is being manifested most clearly in the divergent electricity price trends during the flat-load era since 2008. Figures 7, 8, 9 and 10 show stunningly different price trends in the competitive jurisdictions compared to the monopoly states from 2008 through 2016. Weighted average prices in the group of 35 monopoly states have risen inexorably. By contrast, in the 14 competitive markets, commercial and industrial weighted average prices have trended significantly downward as residential prices have flattened.

Price Trend Divergence in the Flat-Load Era

The fundamental difference between traditional monopoly regulation and customer choice in electricity is in the allocation of risk. Under monopoly regulation, customers bear much of the technology, fuel and sales volume risk for investment in generation assets. In retail choice jurisdictions, while customers continue to share business risk with the local wires utility, power producers and supply intermediaries are largely at risk for changes in power market conditions, including fuel prices and technology disruption. The generation and supply sectors have the characteristics of a competitive industry,

Figure 7: Residential Weighted Average Percentage Price Change, Choice vs. Monopoly States, 2008-2016



Weighted average prices in the group of 35 monopoly states have risen inexorably. By contrast, in the 14 competitive markets, commercial and industrial weighted average prices have trended significantly downward as residential prices have flattened.

Figure 8: Commercial Weighted Average Percentage Price Change, Choice vs. Monopoly States, 2008-2016

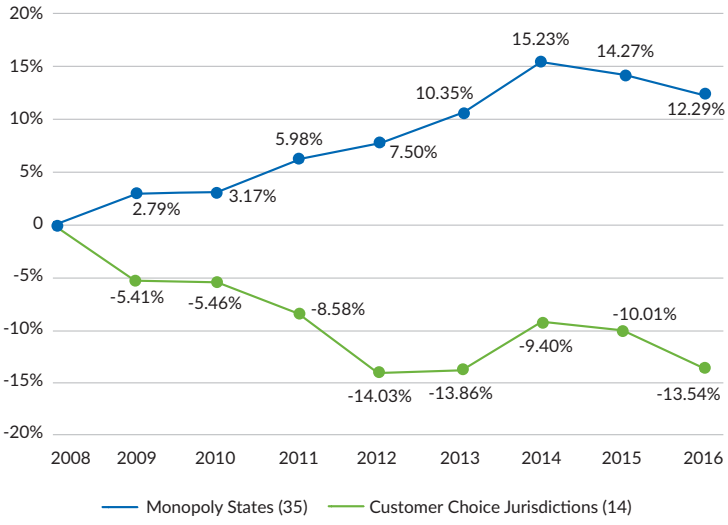


Figure 9: Industrial Weighted Average Percentage Price Change, Choice vs. Monopoly States, 2008-2016

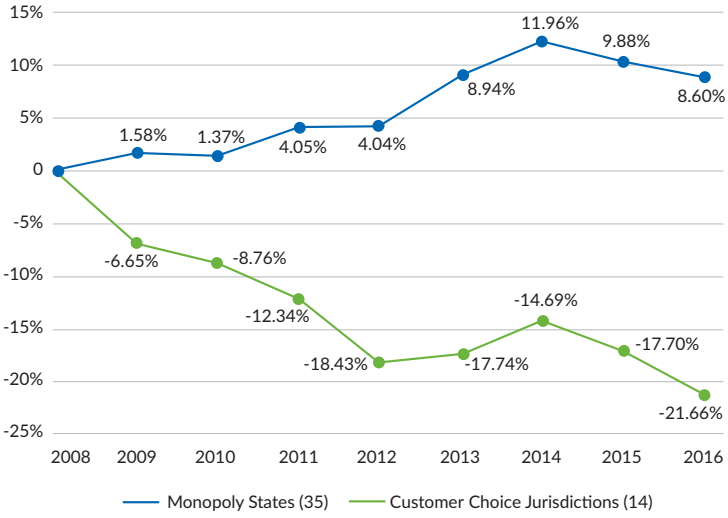
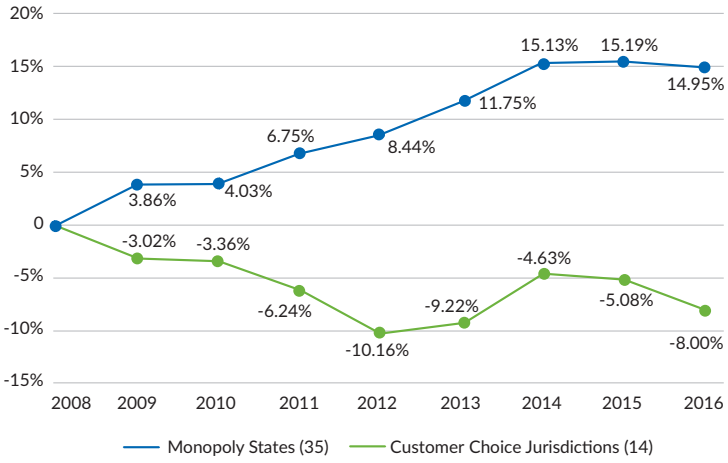


Figure 10: All-Sector Weighted Average Percentage Price Change, Choice vs. Monopoly States, 2008-2016



Advocates for the monopoly model sometimes promote the notion that residential, small-business and non-profit customers such as schools are disadvantaged by choice. The assertion is that large commercial and industrial customers will reap the bulk of the benefits and that competitive suppliers will "cherry pick." However, the data show that prices for residential customers in competitive retail markets have been on a favorable track alongside the benefits that have accrued to C&I customers. While percentage changes in price differ among the customer classes in both the monopoly and choice states, this is due in part to the greater volumes and more constant demand characteristics of larger customers. Additionally, the costs of delivery services allocable to residential and small business customers constitute a greater share of total price.

Figures 11 and 12 show the aggregate nominal and inflation-adjusted percentage changes in weighted average prices of delivered supply for the groups of 14 choice jurisdictions and the 35 monopoly states from 2008 through 2016.

Figure 11: Nominal Weighted Average Percentage Price Change by Customer Class, Choice vs. Monopoly States, 2008-2016

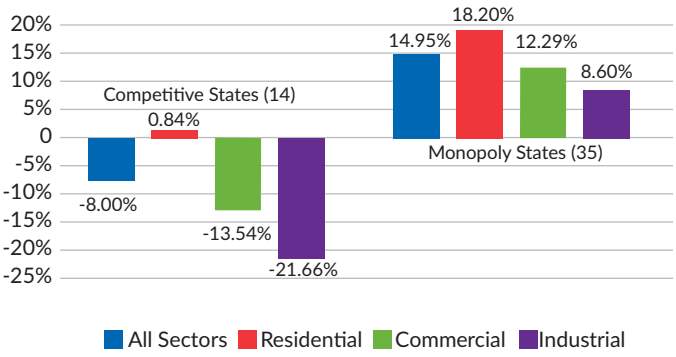
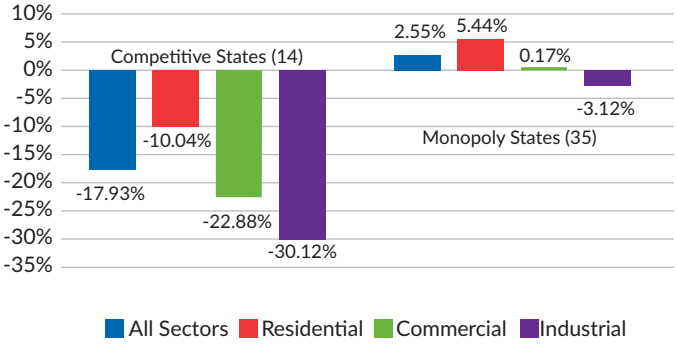


Figure 12: Inflation-Adjusted Weighted Average Percentage Price Change by Customer Class, Choice vs. Monopoly States, 2008-2016



The divergence in price trends between the group of states that have incorporated competitive markets and the group that has remained under monopoly regulation is neither accidental nor aberrational. It is a function of entirely different public policies that prescribe quite different ways in which supply prices are set and risks are borne.[16]

Traditional regulation sets supply prices on the basis of past capital investment and current costs of operation, with little regard for the actual economic value of the product. In competitive markets, supply prices are set by the dynamics of supply and demand.

The problem for consumers served by monopoly utilities in the flat-load era is not merely one of poor risk allocation. Traditional regulation necessarily sends inaccurate price signals. Because traditional rate setting is in great part retrospective, prices will tend to be set too high in periods of surplus in order to recover investment in power plants that are producing less power than anticipated. Similarly, traditional regulation distorts price signals, including setting prices too low in periods of impending shortage and too high in periods of surplus. This upside-down pricing is resulting in rising prices in monopoly states at the same time customers are restraining their electricity consumption from the grid. In choice jurisdictions, all customers have a clear line of sight to the economic value of electricity in wholesale markets. Price signals constitute some of the most valuable information for all stakeholders in a market. Accurate and timely price signals elicit efficient consumer and investor decisions. Poor price information encourages inefficient behavior.

The divergence in weighted average price trends between monopoly states and competitive markets is a widespread phenomenon. The price trends shown in the preceding illustrations are not the result of a few large monopoly states or competitive states skewing the numbers. Figures 13, 14, 15 and 16 show the state-by-state rankings for all states in the contiguous United States for percentage changes in average nominal prices for the three main customer classes and for all customer sectors. Competitive states dominate the lower end of the spectrum in each of the four customer class rankings.

Figure 13: State Ranking — Residential Price Percentage Change 2008-2016

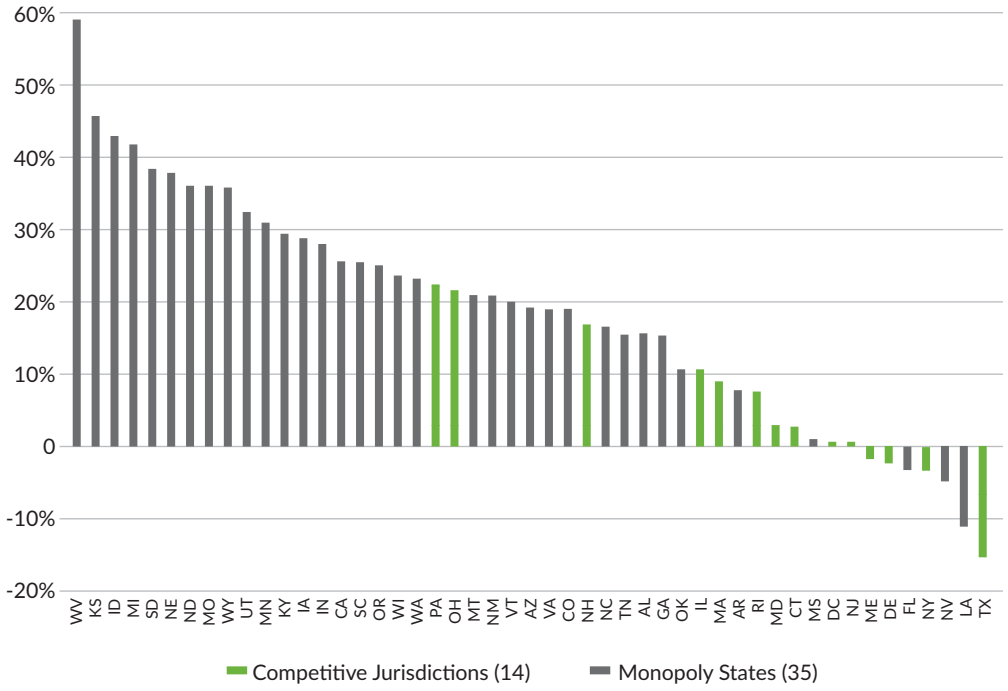


Figure 14: State Ranking — Commercial Price Percentage Change 2008-2016

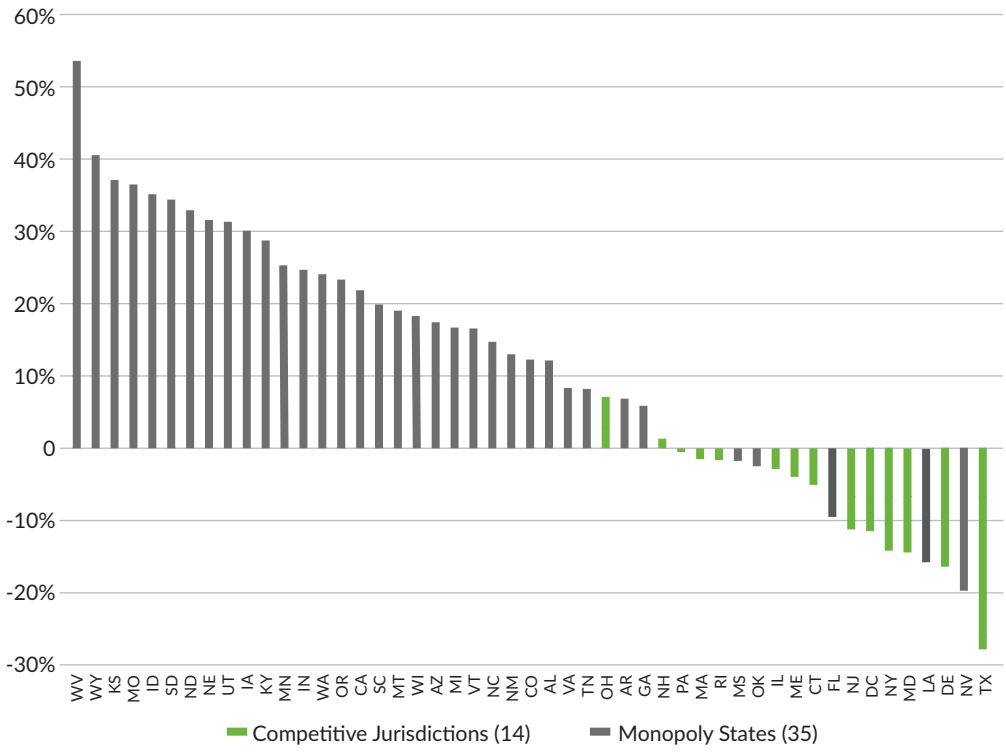


Figure 15: State Ranking — Industrial Price Percentage Change 2008-2016

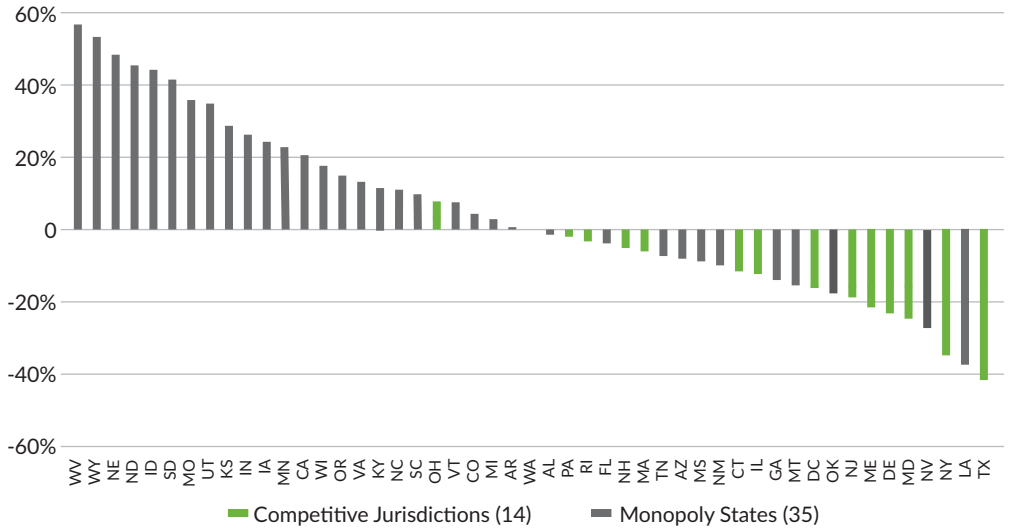
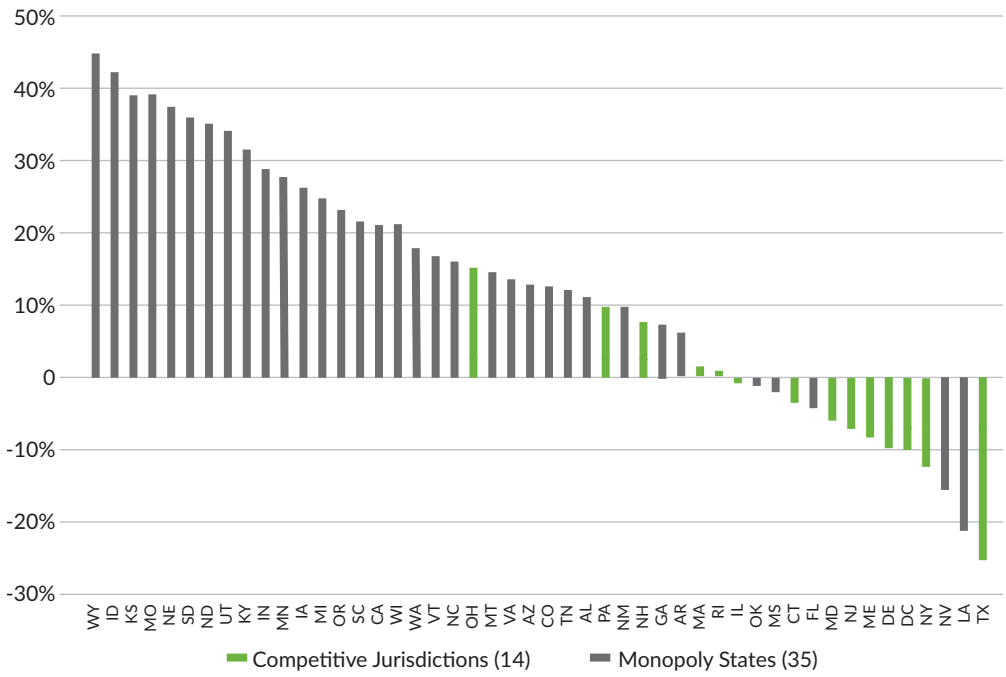


Figure 16: State Ranking – All-Sector Price Percentage Change 2008-2016



Price Volatility

Wholesale electric energy prices can be quite volatile in the course of a 24-hour period, as plants with different fuel costs are brought on line or taken off line in response to rising and falling demand. Seasonal wholesale prices will vary as well. Critics of customer choice who claim that end-use customer prices under competition are more volatile than under traditional monopoly regulation make a basic mistake when they conflate wholesale and retail prices.

Most customers in choice markets, whether C&I or residential, arrange competitive contracts with fixed prices for all or a substantial portion of supply. Unlike monopoly service, a competitive choice customer can enter into multi-year pricing contracts. At the same time, some customers in competitive markets elect to have part of their supply priced in the hourly day-ahead or real-time markets.

Table 5 shows that over the entire competitive era, 1997–2016, the unweighted average residential monthly price volatility was somewhat greater in the competitive jurisdictions compared to the monopoly states. However, when proportional load weighting is taken into account, the competitive jurisdictions show less residential monthly price volatility than do the monopoly states during this time period. When the flat-load era since 2008 is examined, residential prices in competitive jurisdictions have been somewhat less volatile than in the monopoly states from both a weighted and unweighted perspective. The data simply do not support claims of systematically greater retail month-to-month price volatility in competitive markets than occurs in the monopoly states.

TABLE 5: RETAIL PRICE VOLATILITY MATRIX 1997 - 2016

Average Residential Monthly Price Volatility			
Residential		Unweighted	Weighted
1997-2016	Competitive	3.48%	2.91%
	Monopoly	3.18%	3.09%
1997-2007	Competitive	3.92%	3.32%
	Monopoly	3.24%	3.05%
2008-2016	Competitive	3.03%	2.39%
	Monopoly	3.11%	3.14%

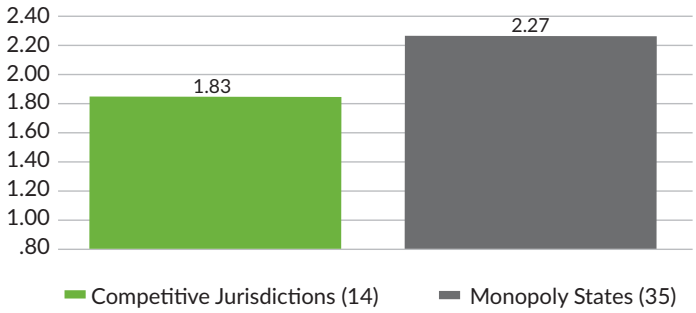
Attracting Capital

Advocates of traditional utility regulation often maintain that traditionally regulated vertical monopoly utilities are required for investors to have adequate assurances. The question then is whether competitive electricity markets have attracted capital for generating capacity.

Generation Effectiveness

"Generation Effectiveness" is the extent to which generating capacity additions have kept pace with consumption, as measured by the ratio of the percentage growth in generating capacity to the percentage change in consumption over the same time period. As shown in Figure 17, both monopoly and competitive states have added capacity since 1997 at nearly double the proportion of the percentage increase in electricity consumption.[18] Figure 17 also shows that both groups of states added capacity at comparable effectiveness ratios of approximately two times the increase in MWh consumption: 1.83 in the Customer Choice Jurisdictions and 2.27 in the Monopoly States.

Figure 17: "Effectiveness" Ratios, 1997-2016 [Summer Capacity (Δ%)]/[Consumption (Δ%)]

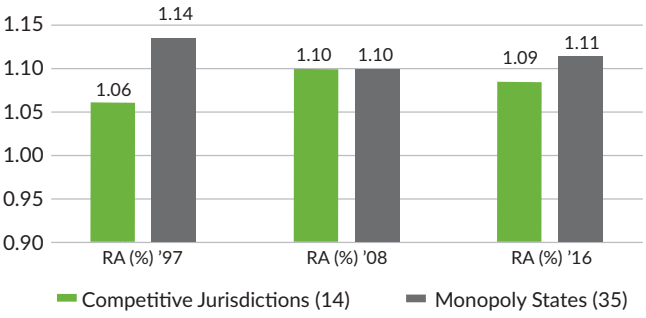


Resource Adequacy

A useful measure of "Resource Adequacy" in an electricity market or collection of markets is whether total annual generation production is equal to about 110% of total annual consumption. The 10% of production above consumption accounts for line losses and other production that does not reach the end-use meter. As shown in Figure 18, at the commencement of the competitive era in 1997, the 14 Customer Choice Jurisdictions, as a group, were net importers, generating 106% of total consumption. Thus, the group of 14 was a net importer. In contrast, the 35 Monopoly States, as a group, were net exporters,

generating 114% of total consumption. As the competitive era progressed, generation and consumption in the two groups of states were both at parity by 2008. In 2016, the resource adequacy ratios of the two groups were comparable, at 109% in the Customer Choice Jurisdictions and 111% in the Monopoly States.

Figure 18: Change in Resource Adequacy Factors, 1997, 2008 and 2016 (Generation Output/Consumption)



Capacity Factors

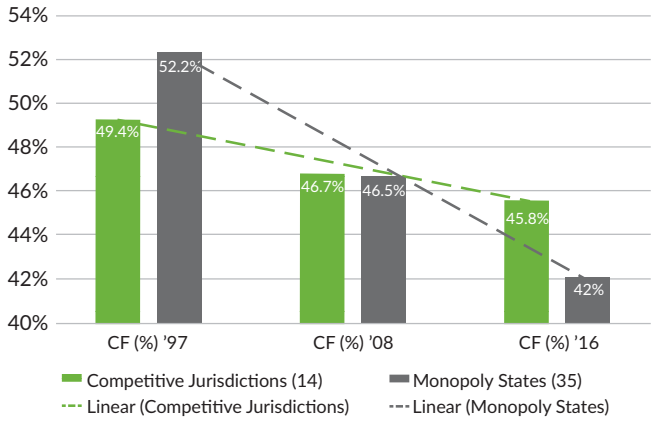
"Capacity Factor," a standard electric industry measure of a generator's operating efficiency, is the ratio of actual output to potential output if a generating unit were to operate at full capacity continuously.

As shown in Figure 19, both the monopoly states and competitive jurisdictions have experienced a decline in overall capacity factor percentages since 1997. This decline in capacity factors across the board is partly attributable to the significant deployment of renewable generation assets across the country which typically exhibit lower capacity factors than do traditional generating resources. Nevertheless, the decline in capacity factors in the monopoly states has been much more pronounced.

Figure 19 shows that in 1997, generation in the Choice Jurisdictions had an average capacity factor of 49.4%, whereas the Monopoly States' average capacity factor was higher at 52.2%. By 2008, however, average capacity factors in the Customer Choice Jurisdictions began to exceed those in the Monopoly States, 46.7% versus 46.5%. In 2016, the Competitive Jurisdictions had an average capacity factor of 45.8% compared to just 42.0% in the Monopoly States. The Customer Choice Jurisdictions have switched capacity factor positions with the Monopoly States since 1997.

Generation units in competitive states are on average newer than in monopoly states and have a greater share of generation comprised of natural gas and high-capacity factor nuclear. Generation in monopoly states is more heavily weighted toward coal. The changing economics of generation have been to the advantage of the types of generation that are more prevalent in the competitive states. Recent scholarly research indicates that competition elicits greater production efficiency compared to monopoly conditions.[19]

Figure 19: Change in Capacity Factors, 1997, 2008 and 2016 (Generation Output/Consumption)

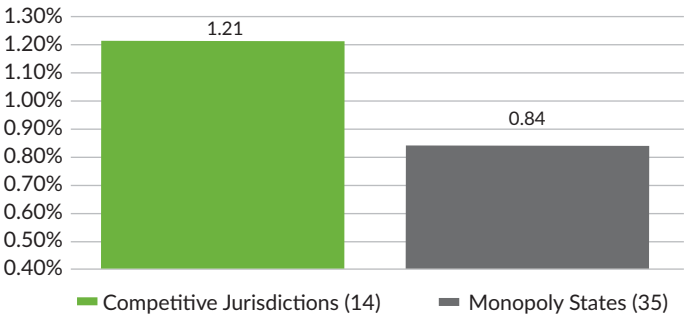


Generation Potency

"Generation Potency" is a measure of how well generating assets meet consumers' electricity usage requirements over time. The Potency ratio compares the percentage change in generation production to the percentage change in consumption over a period of time.

Figure 20 shows that in the Customer Choice Jurisdictions, production has increased at a ratio of 1.21 to the change in consumption, while in Monopoly States, production increased at a pace well below the percentage change in consumption, at a ratio of just 0.84. Thus, generation production in the Customer Choice Jurisdictions outpaced consumption, while in the Monopoly States consumption outpaced generation production.[20]

Figure 20: "Potency" Ratios, 1997-2016 [Generation Output (Δ%)]/[Consumption (Δ%)]



The Results of Customer Choice—As Favorable as Intended

The movement to customer choice and electricity competition had the goal of fostering the reflection of market forces and conditions more promptly and accurately than could traditional monopoly regulation.[21] The data show that:

- Customers embrace electricity choice when given the opportunity;
- As demand has flatlined, competitive retail prices have fallen or flattened, while monopoly prices have risen;
- Retail price volatility is not a distinguishing feature between monopoly and competitive markets;
- Investment in new, expanded competitive generating capacity has been attracted at nearly the same rate as for monopoly generation; and
- Generation assets in competitive states have been outperforming generation assets in monopoly states.

SECTION 4: COMPETITIVE INNOVATION

The Innovative Nature of the Electricity Industry

Innovation has been at the heart of the electricity industry since its birth. Once again, innovation has emerged as a defining characteristic of the sector, driven in no small part by the success of customer choice in supply.

In the late 19th century, the product being sold was light itself. Customers were charged by the lightbulb, rather than by the number of kilowatt-hours (kWh) used. The "war of the currents" over the basic technology of electricity production and delivery—direct versus alternating current—was epic. The names of the combatants are legend and remain in widespread use today—Edison, Westinghouse and Tesla. Electricity was quickly put to a myriad of creative uses, such as powering factory motors and replacing the horses that pulled streetcars. The product being sold had become highly versatile energy, sold by quantity (kWh) and peak demand (kW) as measured by the electromechanical metering technology of the time.

Safety dramatically improved, costs and prices fell, and electrically powered appliances in the workplace and homes proliferated.[22] The symbiotic relationship of rapidly increasing consumer applications and consumption of electricity with rapid scaling up of increasingly efficient central station power plants was a hallmark of the industrial age.

Modern Monopoly Is Inhospitable to Innovation

The critical element in electric industry innovation in the early decades was a competitive spirit as entrepreneurs struggled to be the first and the best. In later times, as the "natural" monopoly model[23] was adopted and the industry matured, regulation naturally elevated central planning over market forces and innovation. Regulatory tariffs, rate-making principles, and cost allocation methods must be general in their application and cannot be tailored to individual customer preferences. Regulated rates will generally be set at average cost for a small number of customer classes as defined by the utilities and regulators.

The inability of traditional monopoly regulation to respond to the increasing complexity of the modern economy and the varied preferences of individual customers stands in contrast to the innovation taking place in customer choice markets. Because customers in competitive markets are not captive to any competitive power supplier, providers

Innovation has emerged as a defining characteristic of the electricity sector, driven in no small part by the success of customer choice in supply. The inability of traditional monopoly regulation to respond to the increasing complexity of the modern economy and the varied preferences of individual customers stands in contrast to the innovation taking place in customer choice markets.

Under the choice model, the customer is at center stage. Customers are dealt with in a far different manner than found in the complex litigation arena before a rate-setting and tariff-approving regulatory agency.

must continually work to build relationships and to develop custom product offerings in order to retain customers and to gain market share. Conversely, a monopoly utility may often be in the unfortunate and highly unusual position for a business of fighting against its customers. Satisfying customers may take a back seat to protecting sunk investment, meeting complex regulatory requirements and resisting change.

Innovation Is Central to Choice Markets

Commercial and industrial businesses as well as residential customers in the 14 choice jurisdictions increasingly have access to pricing, product and service options that are rarely if ever available in the 35 traditional monopoly states. Fundamental to pricing innovation in choice states is that competitive suppliers are able to customize pricing for a customer's usage patterns and preferences. Further, as customer choice has emerged from its transitional period, C&I customers have increasingly focused attention on risk management and the tailoring of pricing to their operational and budgeting needs.

Table 6 summarizes some of the innovative customer options in choice markets.

Monopoly electric utility regulation was predicated over a century ago on conditions that no longer prevail. New dynamics and challenges make clear the inability of the monopoly framework to incrementally adapt. Flat load, radical shifts in generation economics and the digital surge are converging to create an environment to which traditional monopoly regulation is painfully unsuited.

TABLE 6 - INNOVATIVE PRICING, PRODUCTS & SERVICES IN CHOICE MARKETS

Fixed-Price Multi-Year Contracts	In monopoly states, utilities generally decide when to file for rate changes. In choice states, customers can choose multiyear price guarantees that in some markets may be as long as five years. Among other things, a business can lock in a key budget item for a known period of time.
Index Pricing	In choice markets, some customers will choose to buy power supply under various index-pricing arrangements. Options may include pricing on a monthly, daily or even hourly basis. Such deals may or may not include the cost of capacity, transmission or other ancillary cost values depending on the type of program selected by the customer.
Mixed Fixed & Index Pricing	Some customers will choose a mix of fixed and floating or index-based pricing. Some businesses also choose to purchase fixed-price "blocks" similar in shape to those acquired in the wholesale market in order to mitigate risk and achieve cost savings. A business may adjust its operations to control its usage and demand to save money.
Blend & Extend Pricing	Customers who have chosen a fixed-price or a mix of fixed- and index-pricing may choose to extend the duration of a supply contract if market prices move downward or if there is a concern about possible upward movement in price. This gives the customer the opportunity to have a more favorable price going forward under an existing contractual relationship based on their view of the market and their company's unique risk profile.
Real-Time Pricing	Real-time pricing is available for nearly all C&I customers and some residential customers in competitive jurisdictions from competitive suppliers, the local wires utility or the RTO. Some monopoly utilities provide real-time supply options to some C&I and residential customers under highly restricted conditions, including limiting the favorable prices to only a portion of supply or requiring payment of procurement charges or latent capacity fees. In choice markets, customers can simply access the real-time energy price, while not paying for capacity. Customers therefore can choose to bear the unhedged risk of short-term high prices in order to take advantage of both low on-peak and off-peak prices that can lead to overall cost savings on average.
Demand Response (DR)	Retail competitive markets allow customers to contract directly with RTOs, through wires-only utilities and/or through competitive suppliers. Demand reductions during peak periods are compensated on the same basis as supply. DR is less prevalent under monopoly models because participation is controlled by utilities that own generation against which DR competes.[24]
Renewable & Green Supply Blends	Customers in competitive states can usually choose the portion of supply that is produced by renewable (green) resources, rather than being limited to minimum levels mandated by state government policies that may prevail in some monopoly or competitive states.
Market Data, Analytics & Budget Reports	Many C&I customers receive energy market data and additional analytics in order to facilitate purchase decisions and budget planning. Such services operate in tandem with options for customers to blend and extend their contracts, for example. Some suppliers will work with customers to provide ongoing reports that integrate with firm budgeting when electricity is a key business expense.
Energy Efficiency Options & On-Bill Financing	Although many traditional vertical monopoly utilities offer energy efficiency programs, including on-bill financing, there can be inherent conflicts due to ownership of rate-based generation assets. In choice markets, while suppliers sell power, they have incentives to help customers achieve efficient energy use as a means of customer retention and as a business in and of itself. Many competitive suppliers enable efficiency project financing with charges for this service added to competitive supplier's commodity bills or through energy savings.
Distributed Energy Resources (DER)	Customers interested in locating DER on their premises can often work with competitive suppliers to optimize the value of the resources, unhindered by local monopoly tariffs and regulations which may limit customers in selling output into the market.
Integrated Home Solutions	Suppliers are offering residential customers smart thermostats, smart home automation and various applications to facilitate home energy and appliance management in order to optimize the value of market signals.

Another feature of competitive retail markets is that suppliers will vie with one another for ways to attract and keep customers. Suppliers are working with major airlines to offer frequent flyer rewards for customers who select them and with other entities such as cable and Internet providers to offer bundled packages with perks. Some provide free electricity on weekends. Others provide residential customers with digital games and contests that encourage energy efficiency and can educate children about energy usage.

In monopoly markets it is context, not people, that stifles innovation. People working in vertical monopoly utilities and regulatory agencies can be as innovative as any other people. It is the context that limits their creativity. They work in environments that have considerable focus on the defense and preservation of the status quo.

In choice states, the wide array of competing firms, the local wires utility and the regulators all operate in an environment in which customers are not one-dimensional "ratepayers" subject to a take-it-or-leave-it relationship with the electric utility. Under the choice model, the customer is at center stage. Customers are dealt with in a far different manner than found in the complex litigation arena before a rate-setting and tariff-approving regulatory agency. Monopoly regimes have "tariffs" and "rates," while competitive markets have "products" and "prices."

SECTION 5: UNSUSTAINABLE MONOPOLY

New Converging Conditions

Vertical monopoly electric utility regulation was predicated over a century ago on conditions that no longer prevail. Daily, the electricity industry trade press and other energy publications are replete with stories and analyses about the rapidly shifting electricity landscape. The new dynamics and challenges make clear the inability of the monopoly framework to incrementally adapt.

Flat load, radical shifts in generation economics and the digital surge are converging to create an environment to which traditional monopoly regulation is painfully unsuited. Basic changes have accumulated to the point that a combined monopoly over wires as well as generation supply is unsustainable.

1. The Flat-Load Era

Near-zero growth in the consumption of grid-delivered electricity is a new phenomenon. It is rooted in basic changes in the economy that are beyond the control of the electricity industry. The correlation between electricity consumption and economic growth, once strong and seemingly predictable, has weakened.

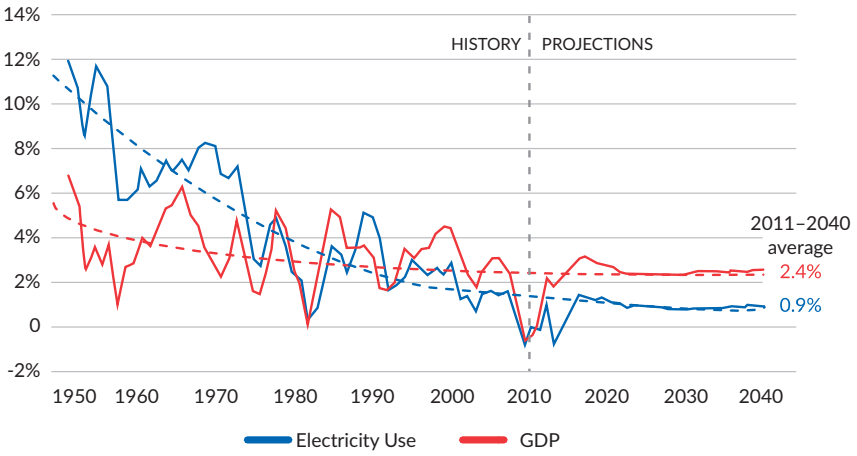
In 2013, the U.S. Energy Information Administration reported on the long-term change in the connection between electricity and Gross Domestic Product (GDP). Figure 21, drawn from that EIA report, shows that until the mid-1970s, electricity consumption generally grew at a considerably higher rate than did GDP. For a time thereafter, electricity and GDP growth rates were similar. In recent times, however, electricity growth has been considerably slower than GDP increase. Since the 2011 end-point of EIA's calculation, load has continued to be flat while GDP has increased. Of course, while EIA projects a continuation of the inverted relationship out to 2040, there can be no certainty about the future. This uncertainty contributes to the desire for flexibility in generation assets ownership.

While aggregate load trends for the 14 choice markets and 35 monopoly states are similar, the price response between the two groups based on form of regulation has been dramatically different. As has already been shown in Figures 7-12, the 14 competitive jurisdictions have significantly outperformed the monopoly markets from a price change perspective for all classes of customers across the country. In the 14 customer choice jurisdictions, all-sector weighted average prices have fallen by 8% since 2008, responding as prices would in any normal, competitive market to slack product demand. Meanwhile, prices in the 35 monopoly states, largely insulated by regulation from the downward price pressure of market forces, all-sector weighted average prices have risen nearly 15%. This 20-point spread in percentage price change between choice and monopoly states since 2008 is illustrated in Figure 11.

Figure 21: The Correlation of GDP & Electricity Consumption Has Weakened

U.S. electricity use and economic growth, 1950–2040

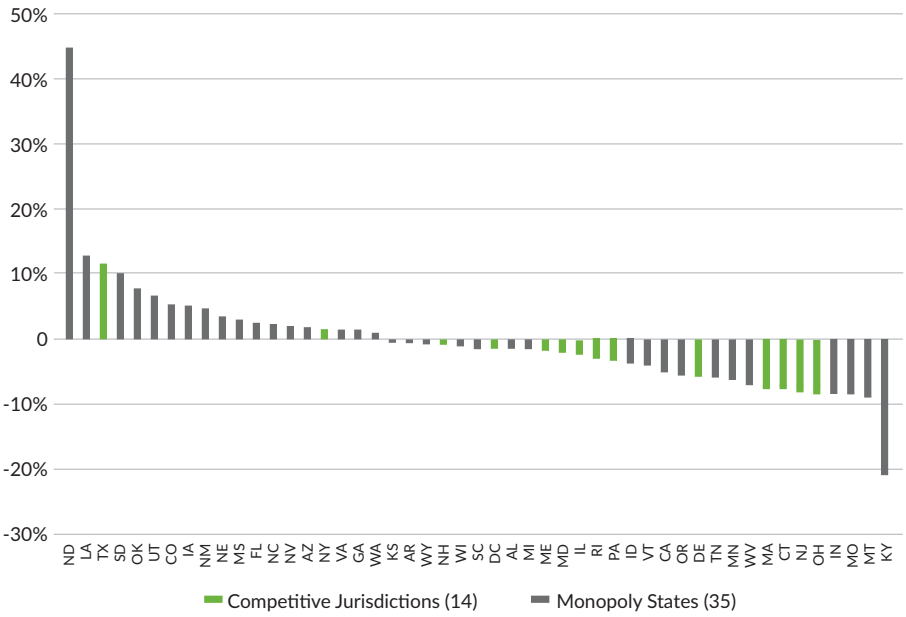
Percent growth (3-year compound annual growth rate) and trend lines



Source: U.S. Energy Information Administration, Annual Energy Outlook 2013 Early Release.

As shown in Figure 22, well more than half of all states lost load over this time period. Developments in the fossil fuel industry may explain why it is that certain states are at the high end of percentage change in consumption or at the low end. Some states with increased load have been beneficiaries of increased domestic oil and gas production. Some of the states with reduced load have suffered from reductions in coal mining.

Figure 22: State Ranking — Consumption Percentage Change 2008-2016



An argument has been advanced that in due course healthy load growth will return, allowing fixed costs to be spread over an expanding sales base and thus bringing down traditionally regulated prices. That argument is not accompanied by a description of the circumstances that will lead to such a consumption surge. Widespread deployment of electric vehicles and an expansion of manufacturing, while positives for electricity consumption, would fall well short of a load increases comparable to general economic growth.[25]

Equipment, lighting and appliances are all increasingly designed with energy efficiency as a central attribute. Further, in a low-growth electricity market, the grid is competing for load with distributed resources on the customer side of the meter.

Public policy has also been playing a role in restraining growth in consumption. State-based energy efficiency and conservation programs, often connected to expectations that decreased energy use will reduce emissions, have played a role in reducing consumption. These programs are often funded through assessments on all classes of utility customers in both competitive and monopoly states. Having an impact as well are federal energy efficiency standards and labeling disclosures for home appliances. National and state energy standards for new buildings and retrofits are prompting greater workplace, school and residence efficiency.

2. Generation "Dys-Economics"

Samuel Insull, a founding father of the 20th century's vertically integrated monopoly electric utility model, saw that success lay in achieving economies of scale across the business—in financing, fuel delivery, plant size, expanding interconnected network, and even in the deployment of home appliances.[26]

Traditional generation economics boils down to a simple rule of thumb: *The larger and more capital intensive the power plant, the cheaper will be the fuel and the more efficient will be the conversion of that fuel into usable energy*. The expectation has been that over the life of a power plant, favorable costs of production would deliver low prices while yielding growing profit. Everybody won. It worked—until it didn't.

In an era of flat load, the shale gas revolution and galloping technological development, the old rule of thumb now translates to "dys-economics." The once reliable idea that larger is better and cheaper has been upended. Certainties about the future have been replaced by a desire for flexibility in a risky world.

Nearly all currently operating coal-fired plants in the United States were built in the heyday of electricity growth over four decades ago. In contrast, the average age of natural gas combined cycle units is only 14 years,[27] with many of the plants brought into operation in competitive states during the choice era.

Since the commencement of the customer choice era, gas has been on track to ultimately overtake coal, both in terms of installed capacity and production. In 1997, coal accounted for 40.5% of summer capacity, while natural gas plants constituted less than 23%. By year-end 2016, coal's share of summer capacity was 25.0% compared to 41.5% for natural gas. Between 1997 and 2016, summer coal capacity had declined by over 44,000 MW of capacity, or 14.2%. In contrast, natural gas summer capacity grew by nearly 270,000 MW or 153%.

Similarly, by 2016 electricity production from coal output had declined by 605 billion kWh, thus falling from 53% of national generation in 1997 to 30.4% in 2016. Meanwhile, gas-fired production nearly tripled, increasing by more than 900 billion kWh. In 2016, gas accounted for 33.9% of national production, compared to less than 14% in 1997.

As the relative shares of electricity production from gas and coal plants flipped, there has been a steady contribution of nuclear[28] and a strong recent upswing in the role of renewables.

Figure 23: Generation Percentages by Energy Type in the 14 Competitive Jurisdictions, 2008 – 2016

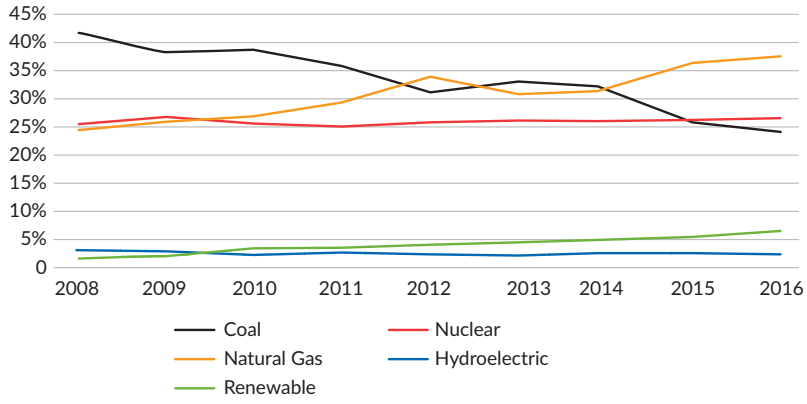


Figure 24: Generation Percentages by Energy Type in the 35 Monopoly States, 1990 – 2016

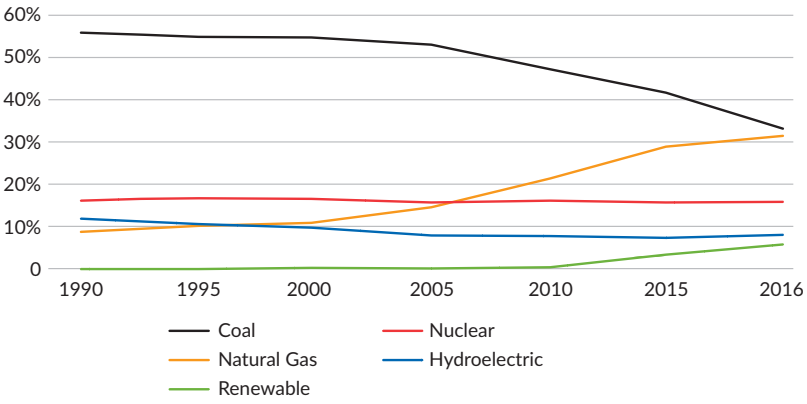
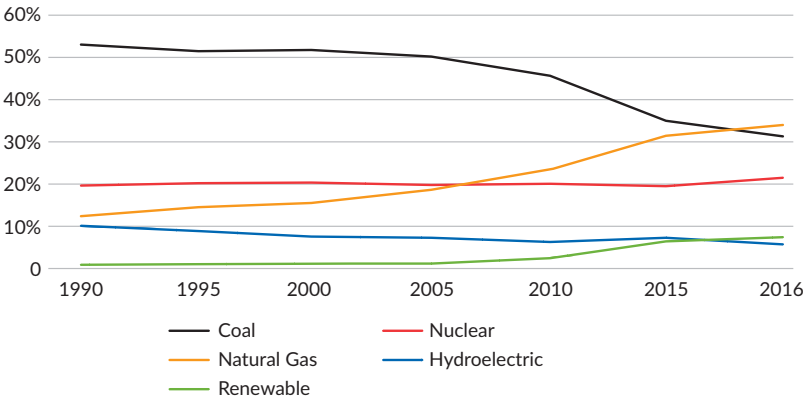


Figure 25: Generation Percentages by Source in the Lower 49 Jurisdictions, 1990-2016



Figures 23 and 24 show the 2008-2016 comparative changes in the market share of electricity production from the major sources in the 14 competitive jurisdictions and the 35 monopoly states respectively. Figure 25 shows that

2016 was the first year in which natural gas-fired electric power production exceeded that produced by coal.

Electricity customers in competitive retail jurisdictions have experienced the benefits of low gas prices more promptly and effectively than have those in monopoly states. There are several reasons:

- A greater share of generating capacity in monopoly states is accounted for by coal than in the customer choice markets where gas and nuclear are more prominent.
- In competitive markets, consumers pay only for the economic value of existing generating capacity, with prices set in open and transparent competitive auctions.[29]
- In the 14 choice markets, generating capacity is installed or taken out of service based on investor perceptions of the competitive economics. In the 35 monopoly states utilities build, contract or retire generating capacity under regulatory protocols that generally require consumers to pay for capacity irrespective of economic efficiency.
- Financial markets have demonstrated a willingness to make billions of dollars in equity investment and low-cost debt available for non-utility generation, contradicting the claim that only regulated monopoly could attract capital at favorable rates.
- Customers, especially commercial and industrial which account for more than 60% of consumption, have the flexibility to adjust contract terms and prices to take advantage of market developments.

3. Digital Customer Sovereignty

Customer empowerment is at the heart of the worldwide digital revolution. More than in any other age, individuals today can compare products, services, prices, quality, and provider reputation. Further, they can express satisfaction or dissatisfaction quickly and with impact.

Advances in communications, information analysis and management, Wi-Fi connected devices, energy controls and decision assistance are facilitating innovations in satisfying electricity customer preferences.

The monopoly model, however, is based on limiting choices. Customer sovereignty is anathema to the monopoly ethos that utility managers and regulators can divine customer needs and that customer preferences are of marginal relevance. Traditional regulation imposes rigid, broad-brush pricing, terms and conditions of service and customer class definitions. Strict limits on consumer options are intrinsic to monopoly.

Customer empowerment is at the heart of the worldwide digital revolution. The monopoly model, however, is based on limiting choices. Customer sovereignty is anathema to the monopoly ethos that utility managers and regulators can divine customer needs and that customer preferences are of marginal relevance.

The most significant digital development is the rapid adoption of Advanced Meter Infrastructure (AMI or smart meters) and other smart grid technology. AMI provides for two-way communication and the accumulation and organization of large amounts of individualized and aggregated electricity service and usage information. Smart grid technology more generally provides real-time information to network managers about grid conditions and operations down to specific geographic locations and individual customers, allowing for prompt and accurate diagnostic, prevention, maintenance and repair. Service restoration can happen more quickly after an outage and outage frequency can be reduced.[30]

Since 2007, the number of smart meters has grown from fewer than 2.5 million across all customer classes to nearly 65 million by year-end 2015. It is likely that by year-end 2017, AMI will have been extended to half of the 150 million meters in the country. Installed smart meters now exceed the number traditional meters.[31]

There are no particular differences in the pace of AMI deployment between delivery-only utilities in competitive markets and vertically integrated utilities in monopoly states. This is not surprising, given the attractiveness of smart meters to utilities for purposes of enhancing operational efficiency and the fact that deployment is a function of state-level regulatory decisions.

However, there are significant differences between competitive and monopoly jurisdictions in the opportunities for consumer value and for improving the efficiency of the broader electricity system.

There are four main value streams flowing from the eventual universal deployment of smart grid and AMI. Only in one—utility delivery operations—can monopoly be regarded as being on equal footing with choice. In the three other value streams, choice markets are in a superior position to exploit digital deployment:

Utility Delivery Operations

The most immediate and direct motivation for AMI and smart grid deployment is the myriad of efficiencies brought to the routine functions of a local utility. These include meter-reading and billing automation, facilitation of service initiation and termination, identification of outage locations, feedback on service restoration, preventive diagnosis and more efficient dispatching of field crews. There are also fast-developing network applications, including voltage optimization and the more precise management of energy flows, all resulting in improved power quality and decreased line losses.[32]

Data Analysis

Careful analysis of the massive volume of data produced from the smart grid and AMI can enable important consumer benefits. The efficacy of energy efficiency programs can be better assessed. Consumption patterns can be analyzed and locales requiring increased delivery capacity can be better understood and more efficiently served. However, rigid tariffs under the monopoly model restrict consumer options and the utilization of data analyses. What little flexibility might be introduced in the monopoly context must be at the behest or sufferance of the local monopoly utility and approved in lengthy regulatory proceedings. In choice markets, customers and other participants will have far more freedom and flexibility in making use of the information and the services offered. Competing providers can test their creativity by offering pricing and products to customers that may be accepted or rejected, withdrawn or imitated and improved. Customers can more profitably adjust their consumption patterns or contract for innovative pricing and products based on individualized data analysis.

Customer Energy Management

Smart meters in a choice environment can be considerably more effective in assisting consumers in managing their energy than in a monopoly market. At the macro level, monopoly customers do not get the full benefit of aggregate load reductions since regulation raises rates to compensate utilities for investment in underutilized generating capacity. Depending on the rate designs of different monopoly utilities, there can be widely varying results from energy management efforts based on AMI-derived data. In choice markets, delivery and supply pricing are separate and costs are not comingled. The incentives and value of effective energy management are clearer and more understandable. Further, under choice consumer consumption changes are not likely to be defeated by the sort of significant mandatory change in rate design or cost recovery that can be effectuated under monopoly regulation. Energy produced on a customer's premises, including home rooftop solar, can be better valued and accommodated in a choice market with AMI since the true economic value of consumer-based supply can be ascertained and then mediated through smart meters.

The converging conditions that are radically altering the electricity world are the result of fundamental developments in the economy and technology. The tide cannot be ordered to recede in order to accommodate the traditional monopoly utility model.

Service Innovation

Knowledge is power. Competitive markets are proving to be learning laboratories for pricing and service innovation. As AMI becomes ubiquitous, the functionality of smart meters will increase as software improves and ideas develop. The value of the data and the associated functionality of data will be limited mainly by the degrees of freedom that customers and market participants will have. There is a world of difference between choice markets with a large number of participants provided wide latitude, and monopoly markets in which participants are highly restricted.

The converging conditions that are radically altering the electricity world are the result of fundamental developments in the economy and technology. The tide cannot be ordered to recede in order to accommodate the traditional monopoly utility model.

SECTION 6: THE PATH TO REFORM AND RESTRUCTURING

The Next Wave of Restructuring Has Begun

The converging conditions of flat load, generation "dys-economics" and digital customer sovereignty compel reform. While they may resemble conditions that emerged in the last quarter of the 20th century, the new conditions are considerably more fundamental. The next wave of competitive restructuring will take its own path and have its own character.

The first wave of restructuring looked to reform in analogous network industries for inspiration. Competitive electricity was unexplored territory in the mid-1990s. The next wave of electricity restructuring now has the benefit of two decades of practical experience in the transition from vertical monopoly to customer choice. In turn, the current competitive markets continue to develop and will be influenced by debate in the monopoly markets as they make the journey toward competition and choice.

There is near-daily evidence of growing interest in electricity choice and restructuring. The examples below, as of early spring 2017, may not all result in action in the near future. They are, however, indications that the monopoly status quo is no longer being accepted as a fact of life:

- In Nevada, 72% of voters in November 2016 endorsed a state constitutional amendment mandating the legislature takes steps to implement full electricity customer choice.[33] Citing the impending restructuring, the Nevada Public Utilities Commission did not approve a request by the state's main utility to acquire a gas-fired power plant from an IPP that would be placed into the utility's regulated rate base.[34]
- In California, where a flawed direct access model was limited over a decade ago in reaction to the California energy "crisis," Community Choice Aggregation (CCA) is now surging. Similar to municipal aggregation competitive supply programs in Illinois, New York, Ohio and several other competitive states, California CCAs have put an emphasis on renewable resource procurement. The growth in CCA programs has led the California Public Utilities Commission and the CA Energy Commission to initiate an in-depth inquiry into an expansion of direct access customer choice and the role that investor-owned utilities should play in a future in which customer-oriented technologies disrupt the traditional top-down electricity service model.
- In Washington State, Microsoft and the Utilities and Transportation Commission (UTC) have agreed on a plan that will allow Microsoft to enter into a special contract with the utility enabling Microsoft to procure supply from alternative suppliers from the wholesale market to including a significant percentage of renewables. In exchange, Microsoft has agreed to continue to fund the utility's energy efficiency and low-income programs and pay a multi-million dollar exit fee. Additionally, the settling parties acknowledge that the UTC Staff will request that the Commission open a docket for the purpose of conducting a broader discussion of alternative supply options for certain large customers sometime after the Microsoft proceeding has been resolved.
- In Michigan, after several years of effort, the state's major vertically integrated utilities failed in 2016 to eliminate the limited 10% choice program in that state. Michigan legislators favoring choice have announced that they are determined to reopen the issue to push for expansion of choice.
- In Arizona, Oregon and Virginia, commercial and industry customers are stepping up their requests to regulators to expand competitive pilot or limited choice programs and to allow access to renewable resources.[35]
- In Minnesota, legislation has been introduced to allow large industrial customers to access market-priced power supplies. The proposed measure is an alternative to such monopoly regulation choices as the 6.5% residential rate increase granted in March 2017 to a major utility to hold it harmless as it reduces rates for large mining and paper companies suffering from stiff competition. Further, market procurement by industrials is an alternative to utility ownership of new gas-fired generation to replace retiring coal-fired stations.[36]
- In Wisconsin, which once had the lowest average prices in the Great Lakes region but now has the highest, industrial customers are complaining that rising electricity prices are forcing consideration of shifting production to lower-priced states.[37]
- In Missouri, legislation has been introduced that would allow larger C&I customers to purchase renewable power supply.[38]

- In Indiana, C&I rates that were once enviably low are now higher than those in neighboring Illinois, a choice state. The state Chamber of Commerce has sponsored discussions about the relative merits of customer choice and monopoly.[39]
- Across the country, flat load and net-metering compensation issues have prompted both vertical monopoly and wires-only utilities to propose non-volumetric pricing more in keeping with cost-causation principles. While the regulatory decisions have been mixed,[40] the trend is nonetheless likely to accelerate. Vertical monopolies will tend to seek fixed charges several multiples greater than do wires-only utilities in order to compensate for uneconomic generation in a flat-load era.[41]
- Bills proposed in the 2017 Nebraska and Kansas legislative sessions that would unbundle rates and initiate a movement toward choice unbundling, while not likely to pass the first time around, indicate a growing awareness of the retail choice option for customers.

As was the case in the first restructuring wave, the politics and important transition details will vary across the states. FERC has substantial experience that was absent two decades ago. Nonetheless, there are five areas with which the next wave of restructuring will certainly deal.

Five Dimensions of the Next Wave of Competitive Restructuring

The first wave of competitive restructuring, while not a detailed roadmap for the next wave given the new converging conditions driving reform, will guide and inform as the next wave of restructuring efforts.

As the incompatibility of the traditional vertical monopoly with flat-load, generation dys-economics and digital customer sovereignty becomes more apparent, attention will be given to more forward-looking reforms. These reforms will build on one another to create a platform for comprehensive competitive restructuring.

Table 7 sets out five categories of reform that will contribute to the next wave of restructuring.

As was the case in the first wave of competitive restructuring in the late 1990s, the question is not so much whether reform will come, but how long it will take to implement the transition to competition and customer choice in current monopoly markets. The faster restructuring polices are adopted, the sooner consumers will reap the value.

TABLE 7: FIVE DIMENSIONS OF RESTRUCTURING

Dimension of Reform	Features of Reform	Rationale & Lessons Learned
Delivery Price Reform and Transparency: Unbundling, Non-Volumetric and Formula Rates	Monopoly utility rates should be unbundled into delivery and supply elements, just as in choice markets. All utilities, including wires-only companies, should be allowed to gradually institute non-volumetric rates for delivery based on such factors as demand and fixed monthly charges. All utilities, including wires-only utilities, should move to formula rate-making for delivery revenue and focus regulatory attention on periodic rate design reviews, as in Illinois.	Rate design has been neglected under monopoly regulation. Bundled rates in traditional monopoly utilities convey false information about the costs of delivery and supply. In choice markets, delivery charges for C&I customers are mainly based on peak demand and for residential customers on energy sales volumn. In the flat-load era, residential delivery charges under choice and bundled rates for all customer classes under monopoly regimes are disconnected from cost causation, thus sending inaccurate price signals.
Normalizing Generation and Supply Risk Allocation: Devolution from Rate-Base	Devolve generation assets from traditional monopoly utility rate-base by sale to other owners or by transfer to utility affiliates so that generation asset values are set in the market. Reallocate generation risk by assuring that customers do not bear the business risk for new generation.	Monopoly regulation imposes fuel, technology and load risk on customers, thereby distorting investment decisions. Devolution of rate-based generation to competitive status resolves the distortions of monopoly risk allocation. If incumbent utilities rate-base new generation in an uncertain world then the problem of customer-borne risk is repeated.
Monopoly Exit Strategy and Stranded Cost Recovery	Give stranded cost compensation to monopoly utilities for a reasonable portion of the regulated book value of devolved generation that is higher than the market value. All choice states did this years ago, using a variety of methods worked out in negotiations for the transition to energy choice.	As defensive measures fail, utilities will need an "exit strategy" from a failing regulatory scheme. The key to resolving utility resistance to retail customer choice and competitive supply will be mechanisms for compensating generation owning utilities for sunk investments in uneconomic generation assets.
Distributed Resources Neutrality and Demand Response	Create a level playing field for distributed energy resources. All resources would pay fair fees for use of the delivery network. RTOs can measure real-time environmental value of each resource. Demand response can be paid a market price.	Wires utility can provide a network platform facilitating utilization and proper pricing of distributed energy resources, including customer-owned assets and demand response.
Optimization of Competitive Service Offerings	Regulators can encourage creative services for all classes of customers by focusing on market rules and assuring that utilities will not use control of delivery for advantage in the provision of competitive services.	The digital revolution and customer empowerment create demand for product and service innovation. Competitive suppliers and wires utilities need opportunities for growth in a flat-load era.

As was the case in the first wave of competitive restructuring in the late 1990s, the question is not so much whether reform will come, but how long it will take to implement the transition to competition and customer choice in current monopoly markets. The wholesale competition and open-access transmission framework, overseen at the federal level, is well-formed and thoroughly tested. A large number of traditional monopoly utilities already participate to one degree or another in the competitive wholesale market.

At the retail level, state regulators and policymakers in monopoly states generally are not familiar with the nearly two decades of customer choice success. There may be a tendency to opt for long glide paths toward restructuring and the introduction of competition and retail choice. However, the record in the 14 jurisdictions that already have deeply embedded customer choice suggests that lengthy transition periods have delayed the full realization of competitive market benefits for some customers past the time necessary for a smooth conversion. This is understandable since there had been no experience in this sphere.

The sooner the debate proceeds and the faster restructuring polices are adopted, the sooner consumers will reap the value.

ABOUT THE AUTHOR

Philip R. O'Connor, Ph.D.

Philip R. O'Connor, Ph.D. is President of PROactive Strategies, a Chicago consulting firm providing advice in the energy and insurance industries. He is recognized as an expert on the transition of regulated industries to competition.

In addition to a lengthy career in the private sector, Phil has had extensive government and political experience, having chaired the Illinois Commerce Commission serving as Director of the Illinois Department of Insurance and as a member of the Illinois State Board of Elections. Six consecutive Illinois Governors have appointed him to various boards, commissions and transition committees.

From March 2007 to March 2008, Phil served in the U.S. Embassy in Baghdad, Iraq with the US Army Corps of Engineers and the U.S. Department of State as an advisor to the Iraqi Ministry of Electricity. A *magna cum laude* graduate of Loyola University of Chicago, Phil received his Masters and Doctorate in Political Science from Northwestern University.

Among his previous writing on electricity competitive restructuring are *Evolution of the Revolution: The Sustained Success of Retail Electricity Competition*, with Erin O'Connell-Diaz (July 2015) and *Customer Choice in Electricity Markets: From Novel to Normal*, (November 2010) both published by COMPETE Coalition; "The Grand Experiment: Has Restructuring Succeeded on Either Continent?" with Terrence L. Barnich, published in *Public Utilities Fortnightly*, February 2007; "Regulation and Relevancy: Assessing the Impact of Electricity Customer Choice," with John L. Domagalski in *ElectricityPolicy.com*, January 2013; "The Electricity Choice Debate: Conjectures and Refutations," with Jonathan A. Lesser, in *The Electricity Journal*, Aug/Sep 2014; and "A Five-Point Plan for the Next Wave of Electricity Restructuring," with Robert Bussa and Wayne Olson, in the May 2016 issue of *Public Utilities Fortnightly*.

Phil.OConnor@PROactive-Strategies.net
312-980-4860

Fadwa Dababneh

Fadwa Dababneh, who conducted the research on comparative retail price volatility for this paper, is a Ph.D. student in the Department of Mechanical and Industrial Engineering, at the University of Illinois at Chicago. She earned her B.S. and M.S. degrees in Industrial Engineering from the University of Illinois at Chicago in 2014 and 2016, respectively. Her research interests are in operations research, sustainable manufacturing, and demand side energy management.

Jared Spilky

Jared Spilky performed the calculations for and prepared many of the illustrations in this paper. Jared is an undergraduate in Industrial Engineering at Bradley University in Peoria, Illinois.

ENDNOTES

[1]DNV GL, the highly regarded international consulting and energy information firm, compiles information from state utility commissions and other sources to estimate a variety of statistics on retail electricity choice provided to subscribers in an annual Retail Energy Outlook Report. The U.S. Energy Information Administration (EIA) of the U.S. Department of Energy, publishes a comprehensive monthly data report, "Electric Power Monthly," that rolls up into annual and historical data sets on the American electricity industry. Figures 1 and 2 in this report are based on data from a variety of authoritative government and industry sources, including EIA, the Department of Labor's Bureau of Labor Statistics (BLS) and various Wall Street indices.

[2]Vito A. Stagliano, *A Policy of Discontent: The Making of a National Energy Strategy* (Tulsa, PennWell, 2001), xiii.

[3]Stagliano, 20 et seq.

[4]Albro Martin, *Railroads Triumphant: The Growth, Rejection & Rebirth of a Vital American Force* (New York, Oxford University Press, 2001), 388.

[5]For a timeline and discussion of financial industry deregulation, see Matthew Sherman, "A Short History of Financial Deregulation in the United States," (Center for Economic and Policy Research, Washington, DC, July 2009, http://cepr.net/documents/publications/dereg-timeline-2009-07.pdf)

[6]Brookings Institution scholars over the years have examined the results of the introduction of competition in regulated network industries. See Robert W. Crandall, "Extending Deregulation: Make the U.S. Economy More Efficient," a position paper prepared for Opportunity 08, a project of the Brookings Institution, February 2008. In addition to his estimates of economic benefits of deregulation of portions of the economy, Crandall opined prior to the flat-load era that "Potentially, the electricity sectors offers the greatest gains from further deregulation, although there is no consensus about the optimal mix of markets and regulation." https://www.brookings.edu/research/extending-deregulation-make-the-u-s-economy-more-efficient/

[7]The electricity regulatory reform trend has been evident outside the United States as well. Several Canadian provinces, Australia, New Zealand and the European Union have all introduced market forces into electricity, including privatization of sectors owned and operated by government, open wholesale markets and retail customer choice. In 2016, Japan and Mexico have also recently adopted retail choice policies.

[8]Academics were key initiators of the electricity competition discussion. The seminal work on the topic was that of MIT scholars Paul L. Joskow and Richard Schmalensee, *Markets for Power: An Analysis of Electrical Utility Deregulation* (Cambridge, MA, The MIT Press, 1983) and the prolific work of Harvard scholar William Hogan.

[9]Opposition to retail electricity customer choice was often justified by the claim that a more robust transmission system and well-ordered wholesale competition were pre-conditions. The actual historical record of retail competition has demonstrated that competitive development at the retail and wholesale levels were mutually supportive and could proceed in tandem, each revealing the need for improvements in the other.

[10]Utility investment was customarily included in rate base and reflect in rates only after the capital asset was operational and "used and useful." The magnitude of investment in new nuclear plants and the delays in construction were such that accumulating carrying costs on debt and equity began to dwarf the rest of the balance sheet. Some utilities borrowed in order to pay dividends to stockholders. In some states, regulators adopted a construction work in progress (CWIP) standard that permitted some of the investment in nuclear plants to be reflected in rates prior to operation. While having the effect of reducing ultimate large one-time rate increases, and even avoiding bankruptcies, the approach was highly controversial.

[11]For a detailed description of the principles, process and implementation of the Illinois competitive electric market, see "Electricity & Natural Gas Customer Choice in Illinois – A Model for Effective Public Policy Solutions (issued by the Illinois Chamber of Commerce, Illinois Manufacturers' Association, Illinois Retail Merchants Association and Illinois Business Roundtable, February 2014) at http://media.mlive.com/business_impact/other/Illinois%20Energy%20Reform%20Feb%202014%20final.pdf

[12]The California Public Utilities Commission failed to heed warnings that the day-ahead requirement for utilities was unwise. Other choice states, while differing from one another in the details, have not mandated day-ahead procurement for utilities charged with providing supply service to residential and small business customer who not choose a competitive supplier. Default service programs, sometimes called provider-of-last-resort service (POLR), differ among the states in a variety of ways. For example, in Illinois block supplies are procured by the Illinois Power Agency, a state government entity through multi-year, layered auctions, with annual reconciliations for energy balancing sales and purchase by utilities. In New York, utilities serve customers at monthly indexed prices. In Texas, competitive providers serve as providers of last resort on an assignment basis in place of wires utilities. The results vary as well, of course. If day-ahead prices are generally declining, then indexed pricing will seem preferable. Hedged prices guard against temporary spikes or periods of general wholesale price increases. In most choice states, residential and small business customers are able to choose competitor suppliers and preferred products rather than to take default service.

[13]Hybrid states are as varied in their approaches to limiting retail customer choice as are the choice states in the details of their market-based programs. In all cases, however, there is strong evidence of considerable customer demand for market access that is permitted to be satisfied under the rules. In Michigan, for example, more than twice as much load than the 10% permitted to access choice is enrolled in choice "queues." Industrial and commercial customers in Arizona, California and Oregon have participated in legislative and regulatory proceedings considering expanded market access. In Nevada, the constitutional amendment adopted by a 72% voter majority in the November 2016 election was originally promoted for the ballot by large customers dissatisfied with utility and regulatory obstacles to electricity retail competition.

[14]For a review of modern utility regulation, see Wayne P. Olson, *The A to Z of Public Utility Regulation*, (Reston, VA, Public Utilities Reports, 2015)

[15]The market share of municipal utilities and rural cooperatives differs significantly across the 14 choice states. They play a smaller roll in New York than in Texas, for example. In Texas, San Antonio and Austin are served by government-owned electric utilities exempt from choice. Rural cooperatives serve large expanses of the state's territory.

[16]A number of state-specific studies in recent years have underscored the benefits of adopting customer choice. In addition to the Illinois study cited in note 10, see"Electricity Customer Choice in Ohio: How Competition Has Outperformed Traditional Monopoly Regulation," Andrew R. Thomas, et al, Cleveland State University at http://engagedscholarship.csuohio.edu/urban_facpub/1416/; and "A Case Study of Electric Competition Results in Pennsylvania," Christine Simeone and John Hanger at http://kleinmanenergy.upenn.edu/paper/electricity-competition.

[17]U.S. Energy Information Agency monthly average prices for the residential customer classes were used in the analysis of differences in price volatility between the 14 choice jurisdictions and the 35 monopoly states. Weighted and unweighted absolute percent change in average prices were considered when building the dataset. The unweighted mean percentage change in average prices was calculated by taking the average absolute price change from one month to another by state. The weighted absolute percentage change was calculated by considering the percentage of sales in each state multiplied by the absolute percentage change. The data were categorized into three time periods for the analysis: (1) the full competitive era 1997-2016; (2) the choice transition period 1999-2007; and (3) the flat load era 2008-2016. A paired t-test was conducted using a 95% confidence threshold. The paired t-test computed the difference within each pair (Competitive vs. Monopoly) of volatility measures by month. Hypothesis tests were used to determine if differences among the means were statistically significant by comparing a Null Hypothesis with the Alternative Hypothesis. The Null Hypothesis suggested that the difference among the absolute percentage changes is equal to zero (i.e. Ho: μcompetitive - μtraditional=0). Meanwhile, the Alternative Hypothesis considers a two tailed, upper tailed, and a lower tailed test (i.e. H1: μcompetitive - μtraditional$\neq$0; μcompetitive - μtraditional>0; μcompetitive - μtraditional<0). If the P-Value is less than α=0.05 we reject the Null Hypothesis (Ho) in favor of the Alternative Hypothesis (H1) with 95% confidence.

[18]The Effectiveness ratio assumes a positive value for consumption growth in a group of states since 1997. Only Kentucky, Maine, Ohio, Oregon and Washington State have seen load decline in 2016 compared to 1997.

[19]Scholarly and academic literature has been accumulating that wholesale and retail electricity consumption is beneficial. For example, see Steve Cicala, "Imperfect Market versus Imperfect Regulation in U.S. Electricity Generation," National Bureau of Economic Research No. 23053, January, 2017; Agustin J. Ros, "An Economic Assessment of Electricity Demand in the United States Using Utility-Specific Panel Data and the Impact of Retail Competition on Prices," *The Energy Journal*, 38(4), 2017 (International Association of Energy Economics); Xuejuan Su, "Have Customers Benefited from Electricity Retail Competition?" *Journal of Regulatory Economics*, 47(2), 146-182, 2015.

[20]Looking forward, despite low electricity prices in PJM, the largest competitive wholesale market, S&P Global Market Intelligence reported in March 2017 that its affiliated S&P Ratings has "…pointed to some 15,000 MW of new gas-fired capacity to come online in PJM Interconnection by 2019…"

[21]For an analysis of the relative performance of choice and monopoly models see Philip R. O'Connor and Erin O'Connell-Diaz, "Evolution of the Revolution The Sustained Success of Retail Electricity Competition," July 2015, COMPETE Coalition, https://www.hks.harvard.edu/hepg/Papers/2015/Massey_Evolution%20of%20Revolution.pdf

[22]Sam Insull was a marketing as well as financial and engineering genius. One of his techniques for building load was to have Chicago Edison trucks go into neighborhoods and distribute free electric irons to homemakers to replace the heavy "sad irons" that had to be heated on stove tops.

[23]The essence of the natural monopoly theory is that in cases in which capital costs are high and incremental operating costs are low, a single supplier may bring cost efficiencies that would not be realized if capital investment were being replicated. Limits on entry avoids the sort of "ruinous competition" that caused so much turmoil in the 19th century railroad industry and contributed to several financial panics.

[24]The contrasting approaches of monopoly regimes and choice markets to elicit demand response commitments from customers can be seen by comparing the adjacent RTOs of PJM and MISO. PJM, in which most customers of its member utilities have choice, has a fully formed demand response program across its large regional footprint that is highly interactive with market prices. MISO, in which only a small percentage of customer have market access, does not have a, RTO-based program, relying instead on traditional interruptible and other demand control programs of individual utilities. Customers in the ComEd area in northern Illinois committed more than 1,000 MW of the 7,800 MW of total demand reduction commitments to PJM for 2016-17. The entire state of Michigan, with load roughly equal to that of ComEd, committed 771 MW in 2016. See "2016 Demand Response Operations Markets Activities Report: March 2017," 5-6 at http://www.pjm.com/~/media/markets-ops/dsr/2016-demand-response-activity-report.ashx and the Michigan Public Service Commission's data on demand response, p12 at http://www.michigan.gov/documents/energy/Michigan_EGEAS_Report__01_31_2017_550217_7.pdf

[25]A thoughtful and provocative report The Brattle Group presents a "counter narrative" to the death-spiral scenario. While largely in accord with the description of the converging conditions in this paper, the report sets out how electricity consumption could double between 2015 and 2050 if the heating and transportation sectors were to go 100% electric and how other transformations in technology and the economy also provide important growth opportunities for utilities. See "Electrification: Emerging Opportunities for Utility Growth," Jügen Weiss, Ryan Hledik, Michael Hagerty and Will Gorman (The Brattle Group, January 2017).

[26]The thrilling stories of the leaders of the electricity revolution a century ago are the story of American modernization, prosperity and improvement in the quality of life. See *Insull: The Rise and Fall of a Billionaire Utility Tycoon* (University of Chicago Press, Chicago, 1962), John F. Wasik, *The Merchant of Power: San Insull, Thomas Edison and the Creation of the Modern Metropolis* (Palgrave MacMillan, New York, 2006), Jill Jones, *Empires of Light: Edison, Tesla, Westinghouse, and the Race to Electrify the World* (Random House, New York, 2003) and Howard L. Platt, *Electric City: Energy and the Growth of the Chicago Area*, 1880-1930 (University of Chicago Press, Chicago, 2003).

[27]USEPA June 2014 Fact Sheet https://www.epa.gov/sites/production/files/2014-06/documents/20140602fs-important-numbers-clean-power-plan.pdf

[28]Although installed nuclear capacity has remained at just about 100,000 MW since the mid-1990, production has increased considerably, from about 673 billion kWh in 1995 to about 800 billion in 2016 due to an increase in capacity factor from 77.4% in 1995 to 92% in 2016. https://www.eia.gov/totalenergy/data/monthly/pdf/sec8_3.pdf

[29]Texas is unique among competitive jurisdictions in not having a capacity auction mechanism. ERCOT operates an energy-only market combined with bilateral wholesale contracts between generators supplier to attract investment in generation and to maintain adequate reserve margins. Adjustments have been made over the years. Customers generally enter into fixed-price power supply contracts.

[30]The U.S. Department of Energy has reported on operation results examined in case reviews of Smart Grid programs funded by federal grants at https://www.smartgrid.gov/files/EAC-Sept-24-2014.pdf

[31]See EIA Electric Monthly Update for February 2015 https://www.eia.gov/electricity/monthly/update/archive/april2015/

[32]For a discussion of voltage optimization and peak load reduction benefits of Smart Grid, see a U.S. Department of Energy report, "Voltage and Power Optimization Saves Energy and Reduces Peak Power" at https://www.smartgrid.gov/files/Voltage-Power-Optimization-Saves-Energy-Reduces-Peak-Power.pdf

[33]Casinos and other large users in Nevada, frustrated by the obstacles to power market access and to renewables and by high exit fees, successfully advocated a customer choice ballot proposition. Constitutional amendments in Nevada must be approved in two consecutive general elections, meaning that the proposition approved by voters in November 2016 will be on the ballot once again in November 2018. In the meantime, however, the legislature could reduce obstacle to customer choice in place under the current competition law. An executive order by the Governor (# 2017-03) designated Nevada's Lieutenant Governor to chair a study group on electricity choice http://gov.nv.gov/News-and-Media/Executive-Orders/2017/EO_-2017-03-Order-Establishing-the-Governor_s-Committee-on-Energy-Choice/

[34]On February 8, 2017, the Nevada PUC decided that "In response to the voters overwhelming support of the Energy Choice Initiative and the move toward a competitive marketplace for energy, the Commission denies NPC's request to acquire South Point…" see paragraph 106 at 59 of the PDF of order at http://pucweb1.state.nv.us/PDF/AxImages/DOCKETS_2015_THRU_PRESENT/2016-7/18652.pdf

[35]Arizona, Oregon and Virginia all enacted competitive restructuring law during the first wave, but aggressive monopoly utility opposition to customer choice has resulted in onerous conditions that frustrate market access.

[36]H.F. No. 2248, if enacted into law, would allow customers in Minnesota taking service at or above 69kV to procure some or all of their supply in market starting in January 2020. The residential rate increase to allow for a discount to retain at-risk industrial load is a classic admission that the regulated monopoly rates are above market and that the business risk falls on captive customers (http://www.startribune.com/minnesota-power-residential-customers-face-6-5-percent-rate-increase/415823804/)

[37]Indicative of discontent among Wisconsin industrial customers is a July 2016 newspaper op-ed by a steel company executive (http://archive.jsonline.com/news/opinion/time-to-restore-competitive-electricity-prices-b99757278z1-385887411.html).

[38]In Missouri, HB 439 would permit C&I customers to purchase renewable power supplies in the market. Companies including Walmart, Target, General Mills and General Motors have written to the Missouri House and Senate leadership in support of HB439 (http://midwestenergynews.com/2017/02/07/wal-mart-other-companies-back-missouri-bill-to-allow-power-purchase-agreements/).

[39]See the agenda for the August 2016 Indiana Chamber Energy Management Conference at http://www.indianachamber.com/index.php/indiana-conference-on-energy-management-conference-materials and the relevant materials at http://www.indianachamber.com/images/media/2016_conferences/energy/materials/5B_O'Connor_Morey.pdf

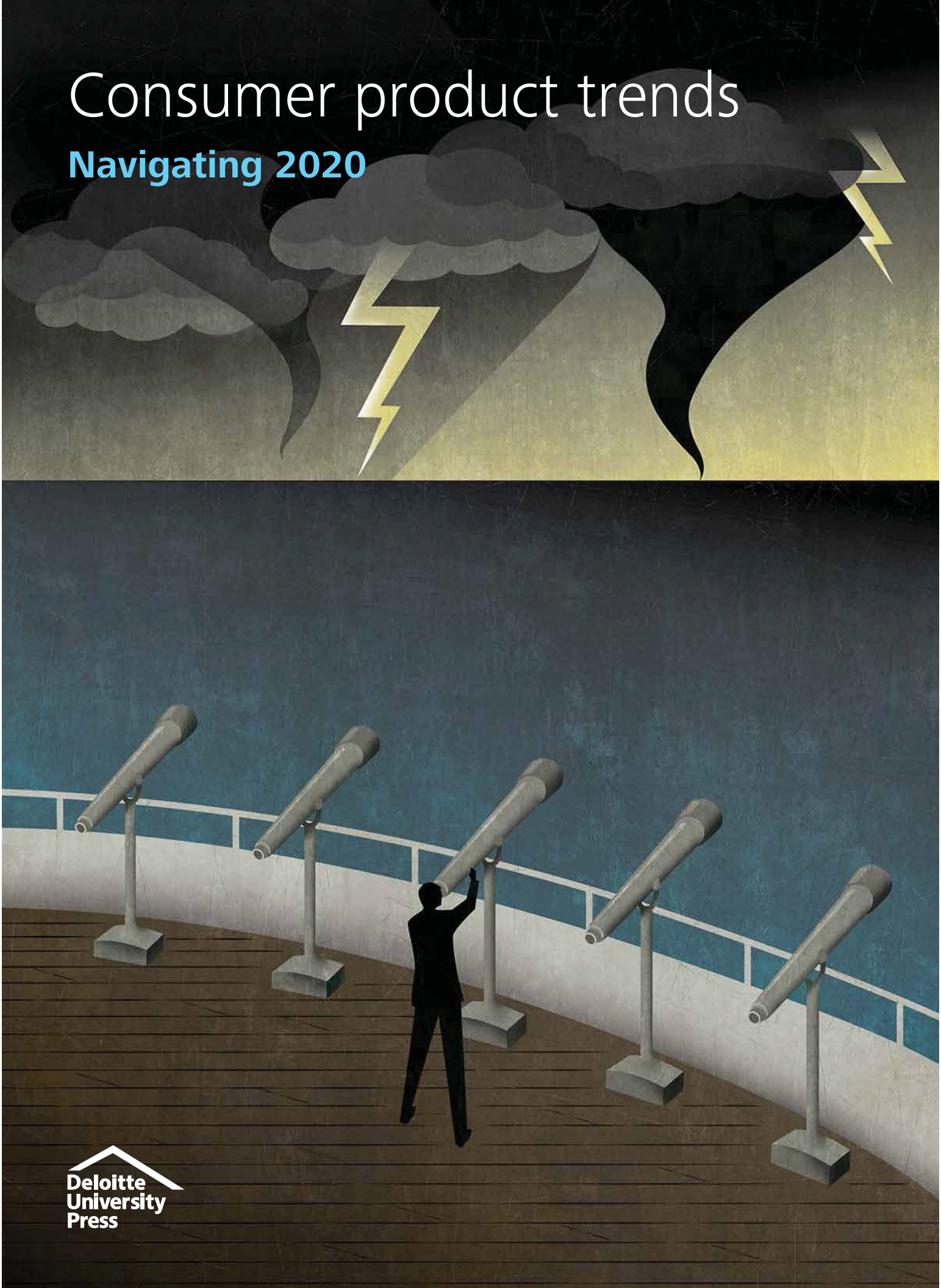
[40]For commentary on the overall results of non-volumetric rate design requests, see https://www.nrdc.org/experts/samantha-williams/theyre-ba-ack-fixed-fee-hikes-still-getting-nixed

[41]Samantha Williams of the Natural Resources Defense Council reported on the mixed results of utility requests for non-volumetric rates at https://www.nrdc.org/experts/samantha-williams/theyre-ba-ack-fixed-fee-hikes-still-getting-nixed, February 2017.

Attachment B

Consumer product trends

Navigating 2020



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About the authors

Pat Conroy, Deloitte Consulting LLP, is a principal with more than 30 years of experience leading domestic and international client engagements. He is an active advisor to many of the consumer packaged goods industry's leading CEOs and C-level management. Conroy's experience ranges from strategic business planning to detailed implementation of operations and technology initiatives. He is one of Deloitte's designated spokespeople on consumer products trends and the author of more than 30 reports.

Kim Porter, Deloitte Consulting LLP, is the organization's US consulting sector leader for consumer products. She has spent nearly 20 years advising leading manufacturers on how to analyze their customer profitability, optimize their trade strategy/pricing, and synchronize supply chain operations to sense and flexibly respond to demand. Her extensive global experience includes implementing transformation programs in 17 countries. Her clients span the food and beverage, personal care/household goods, agriculture, and white goods segments.

Rich Nanda, Deloitte Consulting LLP, is the practice leader for the organization's US consumer products corporate strategy and growth area and a principal within the US Strategy service line Monitor Deloitte. His work focuses on helping clients win with retail customers and the consumer. His experience spans pricing and profitability management, customer and channel strategy, sales effectiveness, and enterprise analytics. Nanda researches and writes studies on consumer and retail trends and their impact on the consumer products landscape.

Barb Renner, Deloitte LLP, is a vice chairman and US consumer products leader for Deloitte LLP. She has more than 25 years of professional experience serving large multinational clients. Renner works directly with consumer and industrial product clients, focusing on their regulatory environment, supply chain, technology and processes, and other issues and opportunities. She has also served in key leadership roles with Deloitte's Women's Initiative and with Junior Achievement.

Anupam Narula, Deloitte Services LP, is the research team leader for Deloitte's consumer and industrial products industry practice. He is the research lead and co-author of multiple articles and reports on consumer attitudes and behaviors toward brand loyalty, marketing strategies, and store brands. Narula's published research includes *Digital commerce in the supermarket aisle*, *Dollar store strategies for national brands*, *I have not yet begun to shop . . . or have I?*, *A crisis of the similar*, and *The battle for brands in a world of private labels*.

Contents

Executive summary: Rough seas likely ahead

CONSUMER product companies and retailers face a confluence of rapidly evolving technologies, consumer demographic shifts, changing consumer preferences, and economic uncertainty. These dynamics have the potential to undermine not only historical sources of profitable growth but also historical sources of competitive advantage, and render traditional operating models obsolete.

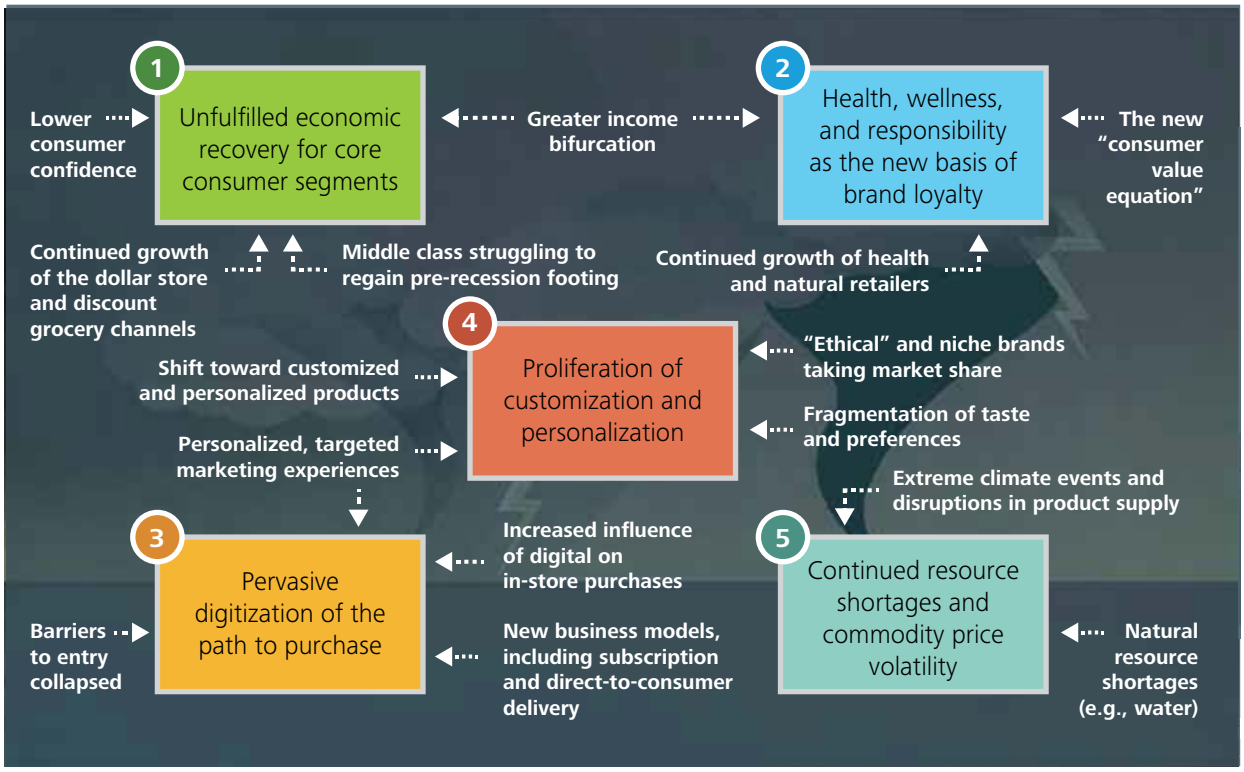
In this rapidly evolving, low-growth, and margin-compressed environment, clear strategic direction and coordinated efforts are not all that should be pursued. Speed of execution and completeness of action are just as important, if not more important, to consider.

Because no one knows exactly how marketplace dynamics will eventually play out over the next five years, consumer product companies should be prepared to operate amid uncertainty. Yet preparing for an uncertain future in 2020 is particularly difficult. The undercurrents in play place stress on the consumer product company's traditional sources of competitive advantage—scale, brand loyalty, and retail relationships—and the operating model that many of these companies are built on. Agreeing on strategic actions while not being able to agree on what the consumer product landscape will likely look like in five years is challenging in itself; concurrently moving rapidly with thoroughgoing actions is even more difficult.

The historical profitability of the consumer products industry indicates headwinds impeding performance in a difficult environment. Measured by return on assets (ROA), the consumer product industry's median profitability has trended downward over the past 30 years (from 5.8 percent in 1980 versus 3.7 percent in 2013).[1] While the bottom quartile of consumer product companies has suffered the most (1.9 percent ROA to a negative ROA of -5.6 percent), top performers are also slightly less profitable than they were before: Top-quartile ROA performers' ROA fell from 9.2 percent to 8.1 percent.[2] In other words: Collectively, the industry has lost steam.

Furthermore, the US consumer packaged goods market is unlikely to grow beyond the rate of population growth, and small players may be better positioned to take market share from traditional industry leaders. Perhaps the slowdown in return on assets is partially because many companies are neither bold enough in their plans, nor fast enough in their actions. To help consumer product executives prepare for change and uncertainty, this article presents five potential "undercurrents" that may impact the consumer product industry in 2020—marketplace undercurrents whose exact direction and pace, while still unknown, can be broadly identified today—that companies should keep in mind as they try to chart a clear path to 2020 and beyond.

Figure 1. Rough seas ahead: Five undercurrents in the consumer products industry



Graphic: Deloitte University Press | DUPress.com

Undercurrent 1: Unfulfilled economic recovery for core consumer segments

The economy will likely continue to stagnate, and may give rise to increased income bifurcation, middling level of consumer confidence, and a struggling middle class.

The likely consequence: Core consumer segment(s) will experience minimal income growth at best.

Challenge to current model: Channel strategy and product portfolio shift to meet new price points.

Undercurrent 2: Health, wellness, and responsibility as the new basis of brand loyalty

Emotional ties to national brands will likely decline due to growing consumer discontent with large companies' perceived values, coupled with increased consumer focus on personal health, the environment, and social impact.

The likely consequence: Companies will experience greater pressure to better align offerings and activities with consumer interests and values.

Challenge to current model: Tremendous shifts are likely in brand portfolio, innovation strategy and capabilities, and ecosystem partners as companies move toward a health and wellness platform.

Undercurrent 3: Pervasive digitization of the path to purchase

Concurrently new marketing channels to reach consumers, the convergence of sales and marketing environments, and the growth of disruptive retail models emerge. Traditional brick-and-mortar business models may be dismantled as consumers fully embrace digital.

The likely consequence: The lion's share of consumer spend and activity—promotion, search, and procurement—will take place over digital channels.

Challenge to current model: Traditional marketing and channel economies of scale dissipate, with many more paths to the consumer and many more convenient options for consumers to make initial and recurring purchases.

Undercurrent 4: Proliferation of customization and personalization

Consumer spending will likely shift toward customized products and experiences across a broad range of consumer products.

The likely consequence: Customization of both the product and the end-to-end shopping experience will be critical to capturing value.

Challenge to current model: The value of mass-production economies of scale is undercut by new business models based on customization and delivery of individual units.

Undercurrent 5: Continued resource shortages and commodity price volatility

The cost and cost volatility of key packaged goods inputs will likely continue to increase.

The likely consequence: More frequent shortages of natural resources, including water, will cause more supply chain disruptions.

Challenge to current model: Traditional commodity management strategies are increasingly insufficient to guarantee supply, harness innovation, and align with social responsibility.

These potential undercurrents are not mutually exclusive. Rather, companies should consider being prepared to steer a winning course even if two or more of these concurrently occur. By highlighting these uncertainties, we hope to not only provoke leadership team discussion, but also bring about action. Consumer product companies should consider taking steps to guard against being thrown off their charted course by these undercurrents—or they may find themselves capsized by a future that takes them by surprise.

Adrift in uncharted territory

DON'T mistake the momentum of a collection of loosely coordinated projects as strategic progress. In this rapidly evolving environment, strategic transformation may require concurrently retooling many aspects of the operating model. No one wants to set sail in a storm with a nearsighted, narrowly focused, and overly optimistic captain at the wheel—and consumer product executives should consider taking care to avoid becoming exactly that.

A confluence of marketplace changes (figure 2) means that, for consumer product companies, the traditional levers for building loyalty are likely becoming less and less effective. Consumer product companies are complex, and nearly every organizational and process area is impacted by these rapidly changing industry dynamics. Brand and product portfolios designed for traditional economies of scale may no longer seem relevant. The shift toward new, as-yet-unproven digital marketing vehicles—by consumers and companies alike—could heighten the need to discover how to develop a better end-to-end consumer experience. The downward trend in profitability for both big and small players suggests the need to revisit the relevance of traditional R&D and innovation models. Traditional consumer insight collection techniques, analytical models, and decision-making models may not be dynamic and granular enough to rapidly make pricing and trade promotion decisions with more precision. Furthermore, consumers and retailers could demand greater variety and customization in both product offerings and purchase channels.

The rapid pace of change necessitates companies to move quickly and completely in a coordinated way. Many consumer product companies risk being outpaced by these uncertainties because they are merely piloting projects as a proof of concept, and not rapidly moving the entire organization forward. Our hope is to not only provide you with a guidebook to help you set your course, but also to bring about action on these challenges. If changes are not made in the near term to enhance and fully scale up the capabilities of both your organization and your people, you may reach a point where both your ship and your crew will be irrelevant—precluding the possibility of smooth sailing into 2020 and beyond.

Figure 2. Continuum of marketplace changes and considerations

	Current environment	Likely future environment	Considerations
Channels	Grocery, mass, and club, with a few emerging formats; relatively homogeneous set of product portfolio offerings across channels	Dozens of formats, all with an element of digital commerce. More precise portfolio deployment by channel due to greater understanding of purchase and consumption occasions	Need for greater variety and customization tailored to channel dynamics
Pricing	Cost-plus pricing	Value-based pricing and dynamic, personalized promotions	Need to understand and shape consumer willingness to pay
Promotions	Weekly promotions based on static annual plan	Hourly promotions based on dynamic customer signals	Need for faster and more granular trade promotion management capabilities
Basis of consumer loyalty	Value	Authenticity and value	Imperative to align offerings with consumers' interests and values as traditional levers for building loyalty become increasingly ineffective
Product portfolio within brand family	Homogeneous	Broad variety	Shift away from traditional, scale-based sources of volume toward scope-based portfolios
Innovation focus	New products, primarily line extensions	Encompasses product offering, business configuration, and customer experience	Innovation should focus not just on products, but also customer experience, channels, delivery, customization, and revenue models
Consumer insights capability	Manual, self-reported, backward-looking	Real-time, forward-looking, predictive	Need to develop new sources of consumer insight and new analytical capabilities
Consumer engagement model	One-way, static push communication	Two-way, dynamic collaborative conversation	Need to discover how to develop an end-to-end consumer experience and ongoing consumer relationship
Brand-building vehicle	Mass advertising	Personalized messaging	Major shift to new, unproven marketing vehicles
Ecosystem	Consolidated set of large retailers, consumer product manufacturers, and traditional suppliers	Retailers and manufacturers coupled with a complex mix of nimble startups and digital technologists; broadening of the ecosystem to players that haven't traditionally been part of the CP landscape	Growth now requires effective external management of relationships, including co-opetition (collaborating with competitors) with a variety of players
Manufacturing	Long runs of limited SKU assortment	Flexible short runs with greater variety/customization	Need to variabilize or reconfigure manufacturing assets
Distribution	Full-truckload shipments of full pallets; majority of volume through traditional channel partners	Full pallets to retailers and eaches (individual units) to consumers; sales via subscription and direct-to-consumer	Need to variabilize or reconfigure distribution assets
Suppliers	Transactional partners; focus on commodity acquisition	Integrated partners managing scarce resources. Focus on commodity preservation, agricultural innovation, and social impact	Sourcing shifts from resource procurement to resource preservation
Talent	Stable workforce with a mix of high potentials and solid citizens	High-turnover workforce with reliance on scarce, in-demand skills	Potential need to incorporate non-traditional employees into resource model; need to develop new talent recruitment and retention models

Preparing for the journey: What might be expected along the way

THROUGH our research and analysis of the current and anticipated future landscape, informed by case studies, executive interviews, prior research, and research conducted specifically for this report (see sidebar, "About this study") we have identified five "undercurrents"—uncertainties which could move in directions contrary to the normal course of action—that may have the potential to capsize unprepared companies.

Undercurrent 1: Unfulfilled economic recovery for core consumer segments

"We used to be able to be successful serving just core consumers in grocers and mass merchandisers, but now we need to be present and deliberate in fragmented consumer segments and more channels."—Packaged goods sales executive

Our first uncertainty for 2020 relates to the economic environment in the United States—specifically, whether the continuing recovery uniformly helps consumers at all income levels. If the 2020 economy is sluggish, with greater income bifurcation between the most and least affluent consumers, the middle class may struggle to regain its pre-recession footing, consumer confidence may decline, and income growth may be muted among lower-income and middle-class consumers.[4] Fewer consumers self-identify as middle class (44 percent in 2014 versus 53 percent in 2008), and more identify as lower class (40 percent in 2014 versus 25 percent in 2008).[5] These dynamics likely shaped the recessionary mind-set we observed in the 2015 American Pantry Study.[6] Fifty-eight percent of surveyed consumers believed that the US economy was currently in a recession in January 2015, and 94 percent said that even if the economy improved, they would remain cautious and keep spending at current levels. This finding is of particular concern to many packaged goods companies, which traditionally target a consumer base composed primarily of lower-income and middle-class consumers.

Undercurrent 2: Health, wellness, and responsibility as the new basis of brand loyalty

"To build brands in the future requires more than the basics. You need additional differentiation: good for you, good for the environment, and supporting a shared social cause."
—Packaged goods sales executive

"Health and wellness can clearly differentiate our brands and drive brand loyalty."—Packaged goods marketing executive

The second uncertainty envisions a decline in emotional ties to national brands, growing discontent with the perceived values of large

ABOUT THIS STUDY

The research described in this article is based on 14 case studies conducted between June and December 2014, an executive survey conducted in August–September 2013, consumer surveys conducted in January 2014 and January 2015, and seven executive interviews conducted between July and November 2014.[3] The executive survey polled 205 US executives and senior managers; the consumer surveys, over 4,000 adult US consumers.

Eighty-five of the 205 executives and senior managers surveyed from August–September 2013 worked in retail, consumer product manufacturing, or food and beverage. Of these 85 respondents, 38 percent worked at retail companies, 36 percent at consumer product manufacturing companies, and the remaining 26 percent at food and beverage companies. The remaining 120 executives worked in other consumer-focused industries, including commercial banking, travel, hospitality, automotive, and consumer electronics.

Executive and senior manager respondents' roles and titles reflected a broad range of experience in operations, finance, sales, information technology, marketing, and general management. A majority of the 205 executives and senior managers surveyed (56 percent) worked for companies with annual revenue greater than $10 billion.

The consumers surveyed in January 2014 and January 2015 were screened to target consumers who did at least half of their household's shopping and food preparation. Most of the consumer respondents (58 percent) were female. Fifty-five percent reported an annual household income of less than $50,000, 27 percent earned between $50,000 and $99,999, and 18 percent earned $100,000 or more.

The seven executives interviewed had experience in marketing, sales, operations, and/or information technology at consumer product companies. The interviews covered four topics: trends in consumer demographics, behaviors, and attitudes; retailer and channel dynamics in consumer products; the impact of technology on consumer engagement, the shopping process, and business models; and commodity supply management.

In addition to the surveys and interviews described above, this report draws on data from a May 2014 survey of 2,004 consumers surveyed as part of the Deloitte Food Safety Survey. Respondents were screened to target consumers who did at least half of their household's shopping and food preparation. The report also uses information collected by the Deloitte Social Media Study. Conducted in July 2014, the Deloitte Social Media Study analyzed social media posts from the United States on the topics of "food safety" and "health and wellness."

companies, and a shift in consumer focus toward personal health, environmental sustainability, and social impact.

This uncertainty reflects an awakening of consumer consciousness along many dimensions. Almost half of US consumers have stronger preferences for brands and products aligned with the shifting value drivers of health and wellness, safety, corporate citizenship, and transparency, and the data suggest that this preference is not isolated to Millennials and high-income segments.[7] Some consumers are becoming increasingly aware of corporate values and placing more emphasis on the role of the company within the community. Other consumers are placing greater emphasis on a product's impact on health, the absence of all things artificial in a product, or a product's cradle-to-grave environmental footprint. Still other consumers are focusing on the well-being of their community and on their community's values—which, more and more, include concepts like "green," "local," and "back to nature." Today, a sizable portion of consumers describe themselves as health-conscious shoppers (47 percent). Additionally, 35 percent of consumers described themselves as "ingredient sensitive" in 2015, up from 29 percent in

2010. The majority of consumers (74 percent) are paying close attention to the nutritional content of the foods they purchase and try to avoid preservatives and chemicals. Being able to cater to today's definition of healthy products can potentially help reap rewards in terms of commanding a price premium. For instance, 16 percent of consumers are willing to pay more than a 10 percent premium for healthier versions of products, while 55 percent are willing to pay up to 10 percent more.[8]

In this uncertainty, the basis upon which brand loyalty is formed is weighted toward characteristics beyond product taste, performance, or price. Of course, not every consumer will necessarily embrace personal health, environmental sustainability, and social impact, but a growing portion of consumers is likely to increasingly consider these attributes when making buying decisions. Under this uncertainty, national brands that do not reinvent themselves and reformulate their products along these attributes risk losing brand loyalty. Companies may undergo a major shift in their brand management approaches, their relationships with suppliers and retailers, and their business practices along the entire value chain. For some companies, this may entail reshaping their brand portfolio through innovation, acquisition of new brands, and/or divestiture of traditionally strong brands.

Undercurrent 3: Pervasive digitization of the path to purchase

"We can't ignore structural changes in advertising and marketing. Digital marketing is an imperative to be successful. We need to move beyond experimenting with direct-to-consumer storefronts, and develop a working online business model to drive growth."—Packaged goods marketing executive

Our third uncertainty posits an environment in which consumers completely immerse themselves within a digital world, and the traditional brick-and-mortar business model becomes less viable—or perhaps even irrelevant.

A decade or more after online shopping became mainstream, e-commerce for consumer packaged goods is finally arriving. While e-commerce is a small proportion of US retail sales (6.4 percent of sales between January and September 2014, according to the Retail Indicators Branch, US Census Bureau), online retail growth is outpacing overall growth. According to the Retail Indicator Branch, e-commerce sales across all retail channels (including non-CPG retail) grew by 18.7 percent annually between 2000 and 2013, while overall sales only grew by an average of 3.2 percent annually.

Growing hand in hand with digital commerce is last-mile delivery of consumer products to the home. A few examples of organizations providing last-mile delivery services are Instacart, FreshDirect, and Peapod. Instacart is a grocery delivery service that provides consumers with a third-party personal shopper that picks up and delivers groceries to them.[9] Instacart shoppers pick up groceries at national retailers, as well as at local retailers, in 16 metro areas across the United States. Other last-mile delivery services are also emerging in the grocery and general retail space.[10] Of note to consumer product companies is that some retailers have reported incremental sales through the online delivery channel.[11]

Preparing for this undercurrent is important: Recent research suggests that many packaged goods companies may be less prepared to capitalize on digital commerce than they should be—or than many consumer product executives would like to be.[12] In a 2013 study comparing consumers' and CPG executives' views on e-commerce, 92 percent of CPG executive respondents agreed with the statement, "The e-commerce channel is a strategic sales channel for CPG companies." Yet only 43 percent of these same executives thought that their company had a clear, well-understood digital commerce strategy, indicating a substantial gap between e-commerce's perceived

importance and consumer product companies' readiness to execute.

Undercurrent 4: Proliferation of customization and personalization

"Manufacturing flexibility is vitally important to create products across all price tiers efficiently and profitably."—Packaged goods sales executive

The fourth uncertainty is about consumer spending shifting toward customized products across a broad range of "commodity" consumer products.[13] Forty-two percent of consumers are interested in technology to customize products, and 19 percent indicate a willingness to pay a 10 percent price premium to customize or personalize products they purchase.[14] This state of affairs might be particularly challenging for consumer product companies because it runs counter to the dominant packaged goods market approach of offering a few high-volume SKUs through large traditional retailers. In a world where customized products and personalized, targeted marketing experiences win companies market share, technologies like digital commerce, additive manufacturing, and artificial intelligence can give a company an edge by allowing it to create customized product offerings.

Undercurrent 5: Increased resource shortages and commodity price volatility

"The ad-hoc and relatively uncoordinated commodity strategies of the past have left us underprepared for the higher uncertainty we face."—Packaged goods finance executive

The fifth uncertainty posits commodity cost increases and higher cost volatility for key food and beverage inputs. Increased supply disruptions and natural resource shortages, such as water shortages, may put the business economics of consumer product companies under stress. Under this uncertainty, agricultural innovations are likely to emerge that have the potential to change the economics of food and beverage ingredients. There are many drivers fueling this volatility, including rising food demand, constrained food supply, volatile energy costs, and global economic uncertainty. Many of the drivers appear to be enduring, while others appear temporary or episodic in nature. Crop commodities in categories such as food (wheat, corn, rice, soybeans), beverages (coffee, cocoa), and cotton have trended upward over the past decade.[15] The International Monetary Fund (IMF) Food Commodity Index has risen 44 percent over the past decade, and the IMF Beverage Commodity Index has increased 56 percent. These commodity indices represent the price paid by consumer product companies to farmers for crop commodities. Furthermore, many food and beverage companies are increasingly subject to product supply disruption due to extreme climate events. Since 1980, there have been 178 weather and climate disasters in the United States. Disaster events—where overall damages reached or exceeded $1 billion (including CPI adjustment to 2014)—resulted in a total cost of over $1 trillion between 1980 and 2014. In 2014 alone, there were eight weather and climate disaster events across the United States.[16]

Charting the course: Navigating through the storms

To help executives plan and act amid these undercurrents, we have developed five sets of specific steps that may help address each of the five potential uncertainties described on page 5 (figure 2). The risk for many packaged goods companies is that they may be slowly proceeding to address two or three of these areas, and their approaches may be incomplete. The risk for executives is that they may be unknowingly incrementally falling behind such that by 2020 there could be a vast performance gap.

Navigation aid No. 1: Revisit product portfolio, pricing, promotions, and merchandising

Consumer product companies should consider understanding and targeting lower-income and middle-class consumers' preferences in what they consider affordable in terms of price point and what they consider desirable in terms of channel. One example of how this can be achieved is offered by the food company Kraft. In an effort to display commitment to the lower-income US shopper,[17] Kraft developed products along "good-better-best" price points in many categories to give value-conscious consumers lower-priced access to national brands. For example, it offered tiered pricing in the cheese aisle, offering Velveeta Singles and Kraft Singles for the low- to mid-income consumer while selling Kraft Deli Select cheese slices at a higher price point. According to Tony Vernon, former CEO of Kraft Foods, "Families in the middle [are] in fear of moving lower. We have an obligation to financially strapped low- and middle-income families that drive America's grocery sales."[18]

Kraft has also recognized the steady growth in popularity of dollar stores and drugstores among lower-income consumers as part of their overall grocery shopping routine.[19] The company has partnered with a dollar retailer in a promotional partnership to improve signage around and placement of the Kraft brand, and it has designed products—such as more affordable snack packs—specifically for the dollar and convenience channels.[20]

Navigation aid No. 2: Align offerings and engagement strategies around consumer interests and values

For many consumers, perceptions of health and wellness seem to be increasingly important influencers of buying decisions at the shelf. Across food and beverage categories, we expect companies to continue acquiring brands perceived as healthier and experimenting with reformulating products with ingredients that are perceived as healthier, such as low-calorie natural sweeteners. For example, SlantShack Jerky makes handcrafted artisanal beef jerky sourced from sustainably raised, grass-fed cattle.[21] Rising consumer interest in protein-rich food has driven increased sales of products

such as jerky and other meat snacks in recent years. SlantShack Jerky allows consumers to "Build-a-Jerky" online.[22] The company initially allowed consumers to select either 100 percent grass-fed or USDA Choice beef.[23] However, the company now offers only 100 percent grass-fed beef, and it includes customization options and subscription options for its products.[24]

Navigation aid No. 3: Create seamless experiences via technology and collaborations

We expect the importance of digital commerce to be amplified by the rapid pace of technological change. Digital technology has already permeated the path to purchase, as today's consumers use websites, social media, and mobile apps not only to research products, compare prices, and make purchases, but also to provide feedback to peers and even companies.

Consumer product companies can use digital media to become a part of the consumer's pre-store planning process by offering features such as online product comparison tools. During in-store shopping, technology can enhance the in-store product experience and deepen the brand conversation to help consumers save time and make better decisions. Technology can also allow consumer product companies to pursue greater collaboration with retailers, shopping-related application providers, and payment companies. And during post-purchase, companies can take advantage of technology to extend the product experience as well as to build a life cycle view of consumers through sophisticated data analysis.

Navigation aid No. 4: Develop processes and business models to allow for customization and consumer interaction

Savvy companies are already increasingly tapping into consumers for ideas on new products and product variants. Crowdsourcing has emerged as one popular method for doing this: Several successful campaigns, including PepsiCo's FritoLay "Do Us a Flavor" campaign, have been built around seeking consumer input by crowdsourcing ideas on social media.[25] In this campaign, consumers suggest new product flavors, and the winning flavors are developed and launched.

Nestlé Purina's ability to offer customized dog food provides an example of a company embracing both customization and customer interaction. Nestlé Purina observed the intense emotional bond that exists between pets and their owners, with pets often treated as members of the family. Consequently, attitudes toward packaged foods such as an "increasing desire for real food" and "using food as a way to attain and maintain good health" are highly relevant for the pet food category.[26] In March 2014, Nestlé Purina introduced "Just Right by Purina," a brand that allows US consumers to create a customized blend of dog food online and have it home-delivered.[27] To evaluate the nutritional needs of the pet, Nestlé Purina's website asks consumers to input details such as breed, gender, age, weight, activity level, and coat condition. The website also considers dietary preferences (for example, inclusion of chicken, lamb, salmon, grains, or soy) and allows consumers to personalize the package with the pet's name and picture.[28] The website uses automated reminders so that consumers can conveniently reorder the customized blend before they run out of dog food.[29]

"Just Right by Purina" launched across the United States in October 2014, after an initial testing phase that began in March 2014. According to Brian Lester, director of Marketing for Just Right by Purina: "So far, people have responded well to it . . . As you look at the many other categories that consumers are in, there are more and more customized features that are being offered every day."[30] The company is currently working to enhance the product's personalization possibilities (for example, package sizes, flavors) and ordering features (for example, automatic replenishment); it is also testing a similar solution for cat food.[31]

Navigation aid No. 5: View commodity decisions with resource preservation and social impact in mind

Forward-looking companies are thinking about not only the economic bottom line as they make commodity sourcing and procurement (for example, vertical integration) decisions, but also about their double (social) and triple (environmental) bottom lines as well. In particular, they are moving away from a "resource procurement" approach to sourcing to a "resource preservation" approach, which means thinking about each resource used and ways to develop or replenish future supply. For instance, a focus on resource preservation can mean partnering with local farmers to deploy improved farming techniques, or it can mean supporting conservation projects such as water-related initiatives.

PepsiCo's commodity procurement strategy provides an example of how a company can reframe commodity sourcing from a resource procurement decision to a resource preservation decision. The resource in question is water. For the World Economic Forum community, water crises ranked as the third-highest concern among 31 global risks in 2014.[32] According to the Global Agenda Council on Water Security, "[P]oor water quality or shortages are often blamed on business operations even when businesses comply fully with regulatory requirements."[33] Beverage companies have faced accusations that their operations are depleting groundwater on several occasions and in several countries over the years.[34]

PepsiCo, recognizing the importance of water scarcity as a business risk, established several specific goals around water stewardship in 2007. For instance, in 2012, the company met its goal to improve operational water use efficiency by more than 20 percent per unit of production over 2006 levels. The company has also, through various partnerships on projects aimed at water conservation, distribution, purification, and hygiene, provided access to safe water to more than 3 million people; it is now working to provide safe water access to 6 million people by the end of 2015.[35] PepsiCo's focus is on achieving a "positive water balance" in its operations, especially in water-distressed areas. In India, for instance, the company achieved such a balance in 2010 and 2011; in 2011, PepsiCo restored 14.7 billion liters to the environment in India, more than the 6.3 billion liters of water that it used in its Indian operations.[36]

As the worldwide population grows, there has been increasing interest in food and agricultural innovation. One way to address commodity price volatility, higher commodity costs, and resource shortage is the application of food technology. Venture capitalists and other investor groups have been increasingly investing in start-ups that focus on new ways of developing food, often seeking to produce healthy food more sustainably and efficiently. For example, Vinod Khosla of Khosla Ventures has invested in Hampton Creek, which develops products with plant-based proteins, such as egg-free Just Mayo.[37] Food technology start-ups are important to investors like Khosla because "we must invest in humane foods that avoid the industrial food chain, like Hampton Creek, which can achieve five times greater improvement in efficiency through innovation without compromising taste."[38]

Together, these undercurrents and navigation aids may require new ways of working and a higher level of enterprise-wise coordination. It means considering moving from reactive, beyond responsive, to an intuitive enterprise that is continually sensing and shaping markets to redefine the frontiers.[39] In many cases, consumer product executives know what to do, but their speed of execution and completeness of action may be insufficient (see figure 3).

Figure 3. Speed of execution and completeness of action may be insufficient in the face of the five undercurrents

Undercurrent	Recommendations (potential strategic actions)	Awareness*	Speed of execution*	Completeness of actions*
Unfulfilled economic recovery for core consumer segments	1. Rethink and reset the product portfolio to meet low-income, middle-class, and affluent consumers where they are, not where you wish they were 2. Use shelf-back pricing, promotions, and merchandising as a strategic lever to meet increasingly divergent consumer price-point needs	High	Medium	Low
Health, wellness, and responsibility as the new basis of brand loyalty	1. Develop, extend, or elevate brands using both product and non-product innovation to emphasize health, wellness, and responsibility 2. Engage consumers on their terms (using digital, social, and mobile) to rebuild trust and loyalty 3. Build a forward-looking predictive insights capability to reduce blind spots and identify long-term market and consumer shifts	High	Low	Low
Pervasive digitization of the path to purchase and last-mile delivery	1. Craft a seamless multichannel consumer experience across traditional and emerging channels, embracing the digitally enhanced path to purchase 2. Form partnerships to expand presence, capability, and reach in the new technology-enabled consumer products ecosystem	High	Medium	Low
Proliferation of customization and personalization	1. Create an innovation engine that allows for the creation of customized products, using consumer experiences and direct consumer feedback as inputs 2. Reconfigure sales, marketing, and distribution to profitably deliver a greater variety of lower-volume SKUs to customers and consumers	Medium	Low	Low
Increased resource shortages and commodity price volatility	1. Lock in local supply sources of strategic commodities to de-risk operations and form local ecosystems 2. Extend commodity sourcing from resource procurement to resource preservation and responsibility 3. Invest in food, agricultural, and resource innovation to change the economics of packaged goods ingredients	Low	Low	Low

Note: Awareness, speed of execution, and completeness of actions are based on Deloitte experiences and observations across the consumer packaged goods industry.

All hands on deck now

A NUMBER of organizations have already made strides in preparing for and addressing these major changes in the consumer product landscape. However, even these companies should realize that a good compass—that is, setting a clear direction—is necessary but not sufficient. Given the multitude and potential magnitude of these projected marketplace changes, speed is equally critical. The shifts are occurring quickly: We observe many environmental factors today that increase not only the probability of change, but also the speed at which we may see each of the undercurrents come to fruition.

Figure 4. Factors suggesting rapid change

Undercurrent	Drivers	Confidence	Time horizon
Unfulfilled economic recovery for core consumer segments	• The job market and income prospects among lower-income and middle-class consumers remain depressed, with low labor market participation rates, high unemployment rates, and low annual household income growth. • The continued growth of the dollar store and discount grocery channels is being fueled by cost-conscious lower-income and middle-class consumers. • Traditional packaged goods companies are continuing to target a primarily lower-income and middle-class consumer base.	Medium	1 to 3 years
Health, wellness, and responsibility as the new basis of brand loyalty	• Consumers are becoming increasingly skeptical of large companies' values, and they link parent company values with individual brands within the portfolio. • Consumers increasingly look at the lifetime impact products have on them, their family, and their community. • Store brands and niche brands are taking market share from traditional national brands based on health, environmental, and social impact attributes. • The continued growth of health and natural retailers is taking share from traditional grocery channels. • Packaged food is increasingly viewed as a mechanism to promote nutrition as part of a healthy lifestyle. Traditional retailers are increasingly including health care outlets.	High	3 to 5 years
Digitization of shopping and pervasive last-mile delivery	• Viable last-mile services in urban, suburban, and rural areas offering delivery at lower price points are proliferating. • Competitors are emerging with new business models, including subscription and direct-to-consumer delivery. • Consumers are growing more trusting of companies with their personal data, and they are embracing the value of context-driven marketing and recommendations. • Consumers are using new, convenient payment options (for example, mobile payments) that enable the promotion or delivery of value-added services based on purchase history and location.	High	1 to 3 years
Proliferation of product customization and personalization	• Consumers are expecting more variety, and are increasingly willing to pay more for customized products. • Preferences and tastes are fragmenting due to diversity along several demographic attributes (for example, ethnicity/race, age, income). • Competitors are emerging with new business models that embrace product customization. • Advances in manufacturing technologies (such as flexible manufacturing, additive manufacturing, and 3D printing) are enabling customization at lower costs.	Medium	3 to 5 years
Commodity price volatility and resource shortages	• Companies are becoming more exposed to risks driven by extreme climate events or disruptions in product supply. • The availability of and access to clean water has become a greater constraint globally. • Companies struggle to maintain margins when input costs increase, and product costs are highly influenced by commodity prices. • Companies are seeking more vertical integration, including locking in local supply sources within countries and regions. • Consumers are increasingly concerned about products' supply chain impact and environmental footprint.	Medium	3 to 5 years

Note: Confidence and time horizon are based on Deloitte experiences and observations across the consumer packaged goods industry.

Parting thoughts

JUST as sailors can't infallibly predict the weather, no one knows for certain what the future holds. But, as any good sailor knows, forethought and preparation are critical to a safe and successful journey. *In this rapidly evolving, low-growth, and margin-compressed environment, clear strategic direction and coordinated efforts are not all that should be pursued. Speed of execution and completeness of action are just as important, if not more important, to consider.* Decisive action along the lines we have discussed could be key to helping your organization meet the challenges it may face in the journey to 2020 and beyond.

Appendix A: The executive and senior manager perspective on consumer trends

We surveyed 205 executives and senior managers in consumer-facing industries to ask: "What are the five most important areas where you would like to know more about US consumer behaviors and attitudes?" Across all surveyed industries, brand loyalty (47 percent) topped the list, followed by consumer willingness to pay higher prices (41 percent). The impact of the current economic situation on the consumer (38 percent), the impact of social influence on loyalty (37 percent), and the impact of technology on shopping and the changing digital landscape (37 percent) round out the top areas.[40]

When comparing the responses of consumer product, food and beverage, and retail executives and senior managers, we observed many significant trends (see figure 5). Note: The remaining 120 executives worked in other consumer-focused industries including commercial banking, travel, hospitality, automotive, and consumer electronics. First, driving greater brand loyalty is very important to each of the three groups of executives—revealing the ongoing tension between both consumer product brands and retailers. Second, retailers seemed more focused on technology-related areas, such as social influence and digital marketing, than the consumer product respondents were. As a result, the latter could be overlooking the potential of technology. Third, understanding consumer preferences was considered more important by consumer product and food and beverage executives than by retailers. Fourth, consumer product manufacturers and retailers were more interested in better understanding retail channel preferences than were food and beverage executives, revealing areas where consumer product companies can help retailers with their consumer and cross-channel experience. And finally, economic impact was the most important to consumer product manufacturers of the three groups. While some differences in perspective are to be expected among these groups of executives, these differences reveal potential blind spots. For example, packaged goods executives seem to be lagging retailer executives in technology, and retailers may not be fully appreciating the impact of the changes in consumer preferences and demographics.

Figure 5. Executive and senior management perspective on the top five areas on consumer behaviors and attitudes that they would like to know more about

Consumer product manufacturing executives (n = 31)	Food and beverage executives (n = 22)	Retail executives (n = 32)
1. Brand loyalty (What makes consumers loyal and why?) (55%)	1. When and where are consumers willing to pay a higher price? (55%)	1. Brand loyalty (What makes consumers loyal and why?) (53%)
2. When and where are consumers willing to a pay a higher price? (45%)	2. The role and importance of traditional advertising (45%)	2. How to build loyalty with the changing technology landscape (41%)
3. Retail channel preferences and how they are evolving (39%)	3. Brand loyalty (What makes consumers loyal and why?) (45%)	3. The impact of social influence on loyalty (41%)
4. Impact of social influence on loyalty (39%)	4. Importance of health and wellness to consumers (41%)	4. The impact of technology on shopping and the changing digital landscape (41%)
5. The impact of the current economic situation on the consumer (35%)	5. Demographic differences between generations (41%)	5. Digital marketing ROI (34%) *tied* with Retail channel preferences and how they are evolving (34%)

Legend for color coding:
Brand loyalty
Consumer preferences
The impact of the economy on consumers
All things technology
Retail channel preferences

Source: Deloitte Executive survey for insight on the consumer (n = 85), September 2013.

Appendix B: Expanded definition of food and product safety

CONSUMERS have expanded the definition of food and product safety to include attributes typically associated with health and wellness.[41] Elisabeth Hagen, senior advisor on food safety, Deloitte & Touche LLP (former undersecretary for food safety at the US Department of Agriculture), recently presented findings from consumer and social media listening research on food safety. When it comes to food safety and food companies, a majority of consumers were concerned about aspects such as safe packaging (75 percent) and accurate labeling (66 percent).[42] Not surprisingly, a substantial consumer segment also associated characteristics such as natural (33 percent) and organic (31 percent) with food safety. The consumer segments that were more likely to associate natural and organic with food safety include individuals or households with allergies, families with children, and 21–29-year-olds. A substantial majority of consumers were very concerned about what they are buying and eating, as well as where their food is coming from. For example, for 87 percent of consumers, clear labeling was a very important purchase driver for a given food product. Furthermore, almost 70 percent were more likely to buy brands that were actively communicating their commitment to food safety in a broader sense. Also, 50 percent of consumers were willing to pay more for a brand if it communicates its commitment and efforts to improve food safety. And a majority wanted to learn more about ingredients, production processes, and where the food comes from.

Additionally, recent social media listening research indicated that when consumers talk about food safety in the United States, only 14 percent of the discussion is about basic food safety, while the rest is about a broader set of topics, such as health and wellness.[43] Within the health and wellness and food safety discussions, a significant number of posts were about transparency (8 million posts) and sustainability (2 million posts). Through social media listening, key issues identified within transparency were genetically modified foods (49 percent of total discussions), clear labeling in general (22 percent), and greater transparency about food additives (21 percent). Moreover, in our analysis of sample brands across industries on positive versus neutral versus negative sentiments for brands, the general discussions about brands across industries was 90 percent positive or neutral and only 10 percent negative. However, when it comes to food brands on the topic of food safety, almost 34 percent of the discussion was negative. The analysis of social media conversations further highlights the importance of the expanded definition of food safety to consumers as well as sheer negativity around it when it comes to food brands.

Endnotes

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Contacts

Pat Conroy
Principal
Deloitte Consulting LLP
+1 317 656 2400
pconroy@deloitte.com

Rich Nanda
Principal
Deloitte Consulting LLP
+ 1 312 486 2761
rnanda@deloitte.com

Kim Porter
Principal
Deloitte Consulting LLP
+1 312 486 4481
kporter@deloitte.com

Barb Renner
Vice chairman, US Consumer Products leader
Deloitte LLP
+1 612 397 4705
brenner@deloitte.com

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ATTACHMENT C

JOINT PETITION OF METROPOLITAN EDISON COMPANY, PENNSYLVANIA ELECTRIC COMPANY, PENNSYLVANIA POWER COMPANY, WEST PENN POWER COMPANY FOR APPROVAL OF THEIR DEFAULT SERVICE PROGRAMS
Docket Nos. P-2017-2637855, P-2017-2637857, P-2017-2637858, P-2017-2637866

RETAIL ENERGY SUPPLY ASSOCIATION Set I, No. 12

"Please reference the website for the First Energy SmartMart: https://www.smart-mart.com/smartmart/en/for_home/home_product_details.

a. Do any of First Energy EDCs currently bill for any of the products listed on this website?
b. If so, please list all products that the EDCs will allow to be included on the utility's bill."

RESPONSE:

a. Yes.
b. In Pennsylvania, the utilities offer and bill for the following products: the Surge Assist Program, Surge Suppression Plan (West Penn Power Company only), Security Lighting, Disaster Protection Plan, Landscape Lighting, Post Lamps, Electrical Services, Professional Tree Services, and the Protection and Repair Plans.

JOINT PETITION OF METROPOLITAN EDISON COMPANY, PENNSYLVANIA ELECTRIC COMPANY, PENNSYLVANIA POWER COMPANY, WEST PENN POWER COMPANY FOR APPROVAL OF THEIR DEFAULT SERVICE PROGRAMS
Docket Nos. P-2017-2637855, P-2017-2637857, P-2017-2637858, P-2017-2637866

RETAIL ENERGY SUPPLY ASSOCIATION Set I, No. 13

"Please reference the website for the First Energy SmartMart: https://www.smart-mart.com/smartmart/en/for_home/home_product_details.

a. Do any of the First Energy EDCs currently provide marketing, information materials, referral information, consumer education materials or any information to consumers regarding any of the products listed on the SmartMart website?
b. If so, please identify all methods by which such information is provided to consumers, including but not limited to through the EDC's website, call center, in-field serve personnel, local customer service centers, EDC bill inserts, customer welcome packets, etc. Please provide copies of all such materials."

RESPONSE:

a. Yes.
b. The Smart-Mart.com website is intended for customers of the various FirstEnergy EDCs including MetEd, Penelec, Penn Power and West Penn Power. The EDCs also market the products through the EDC websites, EDC bill inserts, and EDC in-field personnel. See ME/PN/PP/WP Response to RESA Interrogatory Set I, No. 13, Attachment A.

SURGES HAPPEN. PROTECT YOUR STUFF.

The cost to repair damaged home appliances and devices can add up quickly after an electrical surge. Our Surge Assist Program is an affordable way to make sure you're covered.

IF A SURGE HAPPENS, GET SOME PEACE OF MIND WITH A PROGRAM THAT CAN REPAIR OR REPLACE APPLIANCES AND DEVICES AFFECTED BY A SURGE OR REIMBURSE YOUR SURGE-RELATED EXPENSES.

- Several coverage levels that fit your individual needs – **starting at $5.49 per month!**
- No hidden fees or deductibles
- Convenient invoicing on your monthly electric bill (if available)
- 30-day, money-back guarantee

Protecting all of your home's electronics can be expensive. Our Surge Assist Program is a low-cost way to protect you from the cost if damage occurs. For more information, or to enroll today, visit **www.SMART-MART.COM/SHOP/SURGEASSIST**, call **1-800-505-SAVE** or return the completed form on the back of this insert!

YES! Please enroll me in the Surge Assist Program.

To enroll, simply fill out and return this form with your electric bill payment.

Include the $5.49* charge on my monthly electric bill (if available).
I understand that I will be protected for up to $1,000 per incident/ $2,000 annually in repairs or replacement, and that I'll receive the complete terms and conditions of the plan by mail within two weeks after the program commencement date.

☐ **Double my protection for only $1.50 more!**

By checking this box, I opt to increase my protection level to a total of $2,000 per incident/$4,000 annually in repairs or replacement for only **$1.50 per month additional!** (Please call if you desire higher levels of protection.)

Name: _____
(Please print)

Account Number: (Located on your electric bill)

_ _ _ _ _ _ _ _ _ _ _ _ _

Address: _____

City, State, ZIP: _____

Phone: _____

Email: _____

Signature: _____
(Required for enrollment)

*Enrollment eligibility may be contingent on our ability to add the program charge to the monthly electric utility bill. There is an initial 30-day waiting period to make a claim, giving you 11 months of protection during the first year of the program. This prevents service calls on pre-existing conditions and helps keep the program affordable.

These programs can be withdrawn anytime without prior notice. FirstEnergy Corp. or its affiliated companies, including the electric utility that provides your electric distribution service (hereafter referred to, collectively, as "FirstEnergy Companies") do not provide any warranty on the services performed and are not liable for damages or injuries that may arise as a result of the services provided. The customer is not required to purchase the good or service from FirstEnergy Companies, and the good or service may be obtained from other suppliers. A customer's decision to receive or not receive the good or service from FirstEnergy Companies will not influence the delivery of competitive or non-competitive retail electric service to that customer by the FirstEnergy Companies.

FirstEnergy

Met-Ed • Penelec • Penn Power • West Penn Power

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As a homeowner, you are responsible for the costs associated with repairing your home's heating system.

REPAIRS to the blower motors and wheels, belts, and gas valves damaged due to normal wear and tear are typically not covered by basic homeowners insurance and may cost hundreds of dollars.

PLEASE RESPOND WITHIN 30 DAYS TO ACCEPT THIS *OPTIONAL* PLAN

Important Plan Information: Eligibility: A residential homeowner with sole responsibility for the natural gas or propane, central forced-air, or circulating hot water central heating system may be eligible for the Plan. Residences not affixed to a permanent foundation, recreational vehicles and properties used for commercial purposes are not eligible for the Plan. If you live in a development community with a condominium, co-op or homeowners association, your heating system may not be an individual homeowner's responsibility, so please check with your association before accepting this Plan. If you own a residential property that has multiple heating systems, you must purchase a service agreement for each individual heating system for any one heating system to be eligible. Benefit Details: The Plan provides, up to the benefit amount, for the covered cost to repair the following natural gas or propane, central forced-air or circulating hot water central heating system parts: air scoops, aquastat, barometric damper, belts and pulleys, blower motors and assembly, circuit boards, circulators, ECO safeties, fan and limit controls, fusible links, gas valves, ignition controls, induced draft motor, blower, low water cutoff, main and pilot burners, pilots and thermocouples, pressure switch, regulator valves, relays, spill switches and transformers that are damaged due to normal wear and tear, not accident or negligence. Not covered: Furnaces or boilers rated at inputs of 400,000 BTU/HR or more; rooftop, through-the-wall and hanging units; space heaters, heat pumps, combination ambient heat/domestic hot water heating and oil units; air ducts, registers, air filters, zoning components and electronics, electronic air cleaners, humidifiers, thermostats, air balancing, chimney maintenance or repairs, heating jacket, asbestos or other insulation; heat exchangers, leaking boilers, boiler distribution piping, radiators; accidents and damage or negligence caused by you or others. Additional exclusions apply. Making a Service Call: Your Plan starts the day your form is processed, and there is an initial 30-day waiting period before you can make a service call, giving you 11 months of protection during the first year. This prevents service calls on pre-existing conditions and helps keep the protection affordable. Cancellation: You may cancel within 30 days of your start date for a full refund; cancellations after the first 30 days will result in a pro rata refund less any claims paid (where applicable). Most basic homeowners insurance policies do not cover repair due to normal wear and tear of this system. If you find you have similar protection, you can contact HomeServe to cancel and you will receive a refund of your service agreement fee, less any claims paid (where applicable). Renewal: Your Plan is based on an annual contract and is billed on a monthly basis through your utility bill. Your service agreement will be automatically renewed annually at the then-current renewal price.

To see full Terms and Conditions with complete protection and exclusion details prior to enrolling go to www.FirstEnergyPlans.com/HS. HomeServe is an independent company, separate from your local FirstEnergy Company, providing emergency home repair services and protection solutions to homeowners across the U.S.

This insert offers a brief description of the Heating System Repair Plan and is not a contract. The complete list outlining what the Heating System Repair Plan covers, and all of the Plan's limitations and exclusions, are set forth in the Heating System Repair Plan Terms and Conditions. To receive copies before enrollment, go to www.FirstEnergyPlans.com/HS. Customers have thirty (30) days following enrollment to review the Terms and Conditions without obligation. Customers can cancel this Plan at any time without prior notice. All services are performed by an independent technician. AMT Warranty Corp. is the company responsible for providing the Heating System Repair Plan to you and the delivery of your service benefits is managed by HomeServe USA Repair Management Corp. ("HomeServe") on behalf of AMT Warranty Corp.

The FirstEnergy Companies do not provide any warranty on the services performed and are not liable for damages or injuries that may arise as a result of the services provided. The Public Utilities Commission of Ohio does not regulate this optional service and has no authority to investigate complaints about this optional service. You are not required to buy the service plan in order to receive the same quality service from your electric utility. Your decision to receive or not receive the services under this program will not influence the delivery of competitive or non-competitive retail electric service to you by the FirstEnergy Companies.

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IMPORTANT INFORMATION

REGARDING YOUR HEATING SYSTEM

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FirstEnergy®

It's easy to avoid the high cost and worry of unexpected repairs with the Heating System Repair Plan from **HomeServe**.*

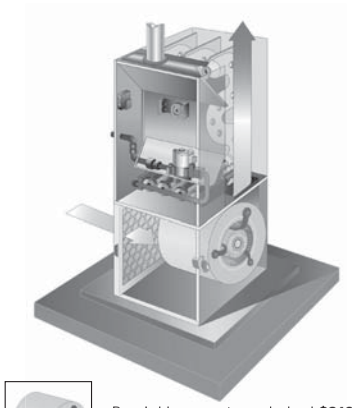
FirstEnergy selected HomeServe to offer this protection. For only $6.49 per month for the first year—a savings of 50 percent off the renewal price, eligible homeowners receive:

Up to $1,750 in annual protection (30-day wait period with a money-back guarantee)—you have no bills to pay for covered repairs

Multiple service calls per year—up to your annual benefit amount

24-Hour Repair Hotline—you have someone to call nights, weekends and holidays

Access to local, licensed and insured technicians—so you can count on quality work



Repair blower motor and wheel **$619**
PLAN MEMBERS: NO CHARGE‡

Repair fan/limit control switch **$279**
PLAN MEMBERS: NO CHARGE‡

Repair gas valve **$467**
PLAN MEMBERS: NO CHARGE‡

‡Costs shown are estimates only. Actual repair costs could be more or less than stated cost. HomeServe national average repair costs as of January 2016. No charge for covered repairs up to your annual benefit amount.

Visit www.FirstEnergyPlans.com/HS, call toll free 1-888-658-3800
or mail the completed form with your monthly statement

*HomeServe USA Repair Management Corp. ("HomeServe"), with corporate offices located at 601 Merritt 7, 6th Floor, Norwalk, CT 06851, is an *independent company separate from FirstEnergy Corp.*, its operating companies, subsidiaries and affiliates, including the electric utility that provides your electric distribution service (hereafter referred to, collectively, as "FirstEnergy Companies"). HomeServe offers this *optional* service plan as an authorized representative of the contract issuer, AMT Warranty Corp., 59 Maiden lane, 43rd Floor, New York, NY 10038. Your choice of whether to participate in this service plan will not affect the price, availability or terms of service from the FirstEnergy Companies.

ACCEPTANCE FORM

Please mail this completed acceptance form with your monthly statement.

YES, I want the optional Heating System Repair Plan from HomeServe for only $6.49 per month. (1711BFOA581AOHZ-9999)

Name

Account Number **(required)**

Address

City State ZIP

Phone

Email

Please sign me up for the Heating System Repair Plan from HomeServe and include the $6.49 monthly charge, plus any applicable taxes, on my electric bill (if available). I understand that this optional Plan is billed on a monthly basis and based on an annual contract that will be *automatically renewed annually* at the then-current renewal price (currently $12.99 per month). I grant permission for my utility company to share my customer information, including account number, with HomeServe only as needed to process my enrollment and bill me. I have the option to cancel this contract at any time without additional cost to me by calling 1-888-658-3800. I confirm that I am the homeowner and have read the information in this package and meet the eligibility requirements for this Plan.

Signature (required)

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COMM8614-11-17-HS-S3M

IMPORTANT INFORMATION

REGARDING YOUR HEATING SYSTEM

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Penn Power®
West Penn Power®

FirstEnergy Companies

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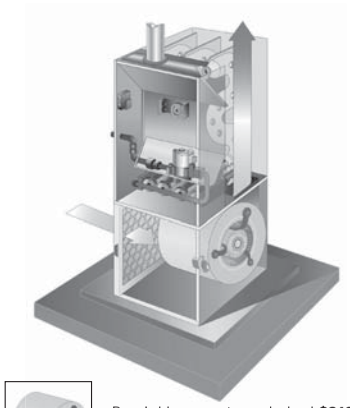

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Name

Account Number **(required)**

Address

City State ZIP

Phone

Email

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Signature (required)

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As a homeowner, you are responsible for the costs associated with repairing your home's heating system.

REPAIRS to the blower motors and wheels, belts, and gas valves damaged due to normal wear and tear are typically not covered by basic homeowners insurance and may cost hundreds of dollars.

PLEASE RESPOND WITHIN 30 DAYS TO ACCEPT THIS *OPTIONAL* PLAN

Important Plan Information: Eligibility: A residential homeowner with sole responsibility for the natural gas or propane, central forced-air, or circulating hot water central heating system may be eligible for the Plan. Residences not affixed to a permanent foundation, recreational vehicles and properties used for commercial purposes are not eligible for the Plan. If you live in a development community with a condominium, co-op or homeowners association, your heating system may not be an individual homeowner's responsibility, so please check with your association before accepting this Plan. If you own a residential property that has multiple heating systems, you must purchase a service agreement for each individual heating system for any one heating system to be eligible. Benefit Details: The Plan provides, up to the benefit amount, for the covered cost to repair the following natural gas or propane, central forced-air or circulating hot water central heating system parts: air scoops, aquastat, barometric damper, belts and pulleys, blower motors and assembly, circuit boards, circulators, ECO safeties, fan and limit controls, fusible links, gas valves, ignition controls, induced draft motor, blower, low water cutoff, main and pilot burners, pilots and thermocouples, pressure switch, regulator valves, relays, spill switches and transformers that are damaged due to normal wear and tear, not accident or negligence. Not covered: Furnaces or boilers rated at inputs of 400,000 BTU/HR or more; rooftop, through-the-wall and hanging units; space heaters, heat pumps, combination ambient heat/domestic hot water heating and oil units; air ducts, registers, air filters, zoning components and electronics, electronic air cleaners, humidifiers, thermostats, air balancing, chimney maintenance or repairs, heating jacket, asbestos or other insulation; heat exchangers, leaking boilers, boiler distribution piping, radiators; accidents and damage or negligence caused by you or others. Additional exclusions apply. Making a Service Call: Your Plan starts the day your form is processed, and there is an initial 30-day waiting period before you can make a service call, giving you 11 months of protection during the first year. This prevents service calls on pre-existing conditions and helps keep the protection affordable. Cancellation: You may cancel within 30 days of your start date for a full refund; cancellations after the first 30 days will result in a pro rata refund less any claims paid (where applicable). Most basic homeowners insurance policies do not cover repair due to normal wear and tear of this system. If you find you have similar protection, you can contact HomeServe to cancel and you will receive a refund of your service agreement fee, less any claims paid (where applicable). Renewal: Your Plan is based on an annual contract and is billed on a monthly basis through your utility bill. Your service agreement will be automatically renewed annually at the then-current renewal price.

To see full Terms and Conditions with complete protection and exclusion details prior to enrolling go to www.FirstEnergyPlans.com/HS. HomeServe is an independent company, separate from your local FirstEnergy Company, providing emergency home repair services and protection solutions to homeowners across the U.S.

This insert offers a brief description of the Heating System Repair Plan and is not a contract. The complete list outlining what the Heating System Repair Plan covers, and all of the Plan's limitations and exclusions, are set forth in the Heating System Repair Plan Terms and Conditions. To receive copies before enrollment, go to www.FirstEnergyPlans.com/HS. Customers have thirty (30) days following enrollment to review the Terms and Conditions without obligation. Customers can cancel this Plan at any time without prior notice. All services are performed by an independent technician. AMT Warranty Corp. is the company responsible for providing the Heating System Repair Plan to you and the delivery of your service benefits is managed by HomeServe USA Repair Management Corp. ("HomeServe") on behalf of AMT Warranty Corp.

The FirstEnergy Companies do not provide any warranty on the services performed and are not liable for damages or injuries that may arise as a result of the services provided. You are not required to buy the service plan in order to receive the same quality service from your electric utility. Your decision to receive or not receive the services under this program will not influence the delivery of competitive or non-competitive retail electric service to you by the FirstEnergy Companies.

COMM8611-11-17-HS-S3M

IMPORTANT INFORMATION

REGARDING YOUR HEATING SYSTEM

FirstEnergy®

Mon Power • Potomac Edison

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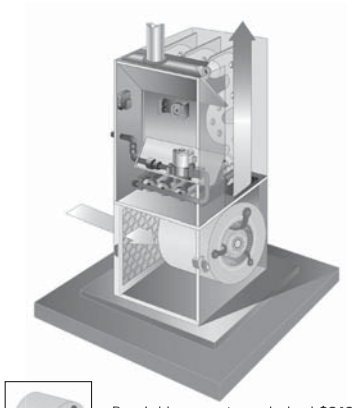
6.5"

FirstEnergy®

It's easy to avoid the high cost and worry of unexpected repairs with the Heating System Repair Plan from **HomeServe**.*

FirstEnergy selected HomeServe to offer this protection. For only $6.49 per month for the first year—a savings of 50 percent off the renewal price, eligible homeowners receive:

- Up to $1,750 in annual protection (30-day wait period with a money-back guarantee)—you have no bills to pay for covered repairs
- Multiple service calls per year—up to your annual benefit amount
- 24-Hour Repair Hotline—you have someone to call nights, weekends and holidays
- Access to local, licensed and insured technicians—so you can count on quality work



Repair blower motor and wheel **$619**
PLAN MEMBERS: NO CHARGE‡

Repair fan/limit control switch **$279**
PLAN MEMBERS: NO CHARGE‡

Repair gas valve **$467**
PLAN MEMBERS: NO CHARGE‡

‡Costs shown are estimates only. Actual repair costs could be more or less than stated cost. HomeServe national average repair costs as of January 2016. No charge for covered repairs up to your annual benefit amount.

Visit www.FirstEnergyPlans.com/HS, call toll free 1-888-658-3800
or mail the completed form with your monthly statement

*HomeServe USA Repair Management Corp. ("HomeServe"), with corporate offices located at 601 Merritt 7, 6th Floor, Norwalk, CT 06851, is an *independent company separate from FirstEnergy Corp.*, its operating companies, subsidiaries and affiliates, including the electric utility that provides your electric distribution service (hereafter referred to, collectively, as "FirstEnergy Companies"). HomeServe offers this *optional* service plan as an authorized representative of the contract issuer, AMT Warranty Corp., 59 Maiden lane, 43rd Floor, New York, NY 10038. Your choice of whether to participate in this service plan will not affect the price, availability or terms of service from the FirstEnergy Companies.

ACCEPTANCE FORM

Please mail this completed acceptance form with your monthly statement.

YES, I want the optional Heating System Repair Plan from HomeServe for only $6.49 per month. (1711BFWA581AWVZ-9999)

Name _____

Account Number **(required)** _____

Address _____

City _____ State _____ ZIP _____

Phone _____

Email _____

Please sign me up for the Heating System Repair Plan from HomeServe and include the $6.49 monthly charge, plus any applicable taxes, on my electric bill (if available). I understand that this optional Plan is billed on a monthly basis and based on an annual contract that will be *automatically renewed annually* at the then-current renewal price (currently $12.99 per month). I grant permission for my utility company to share my customer information, including account number, with HomeServe only as needed to process my enrollment and bill me. I have the option to cancel this contract at any time without additional cost to me by calling 1-888-658-3800. I confirm that I am the homeowner and have read the information in this package and meet the eligibility requirements for this Plan.

Signature (required) _____

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Exhibit RESA RJH-14

Let us handle your next electrical project. We make it easy!

Our services include:

- Interior and exterior repairs and upgrades
- Home safety inspections
- Wiring work, plug and switch installation
- Interior and exterior lighting
- Circuit breakers, fuses and meters
- Whole-house surge protection installation

To schedule your free estimate:

Call us at: **1-800-505-7283** **(weekdays, 8 a.m. – 5 p.m.)**

For more home services and products, log onto **Smart-mart.com** by FirstEnergy.

We offer a convenient payment plan with no money down and low monthly payments on your electric bill.*

SMARTMART™ by FirstEnergy

*For up to 36 months with approved credit.

These programs can be withdrawn anytime without prior notice. FirstEnergy coordinates all service with its network of recommended, registered independent contractors, providing contract and other administrative support services. FirstEnergy is not a registered contractor and does not perform the service. All services are performed by an independent contractor. A postcard containing the recommended contractor's name and registration number will be provided to the customer at the time that a request for an estimate is made. FirstEnergy Corp. or its affiliated companies, including the electric utility that provides your electric distribution service (hereafter referred to, collectively, as "FirstEnergy Companies") do not provide any warranty on the services performed and are not liable for damages or injuries that may arise as a result of the services provided. The customer is not required to purchase the good or service from FirstEnergy Companies, and the good or service may be obtained from other suppliers. A customer's decision to receive or not receive the good or service from FirstEnergy Companies will not influence the delivery of competitive or non-competitive retail electric service to that customer by the FirstEnergy Companies.

Met-Ed®
Penelec®
Penn Power®
West Penn Power®

FirstEnergy Companies

COMM8631-12-17-AI-S3M

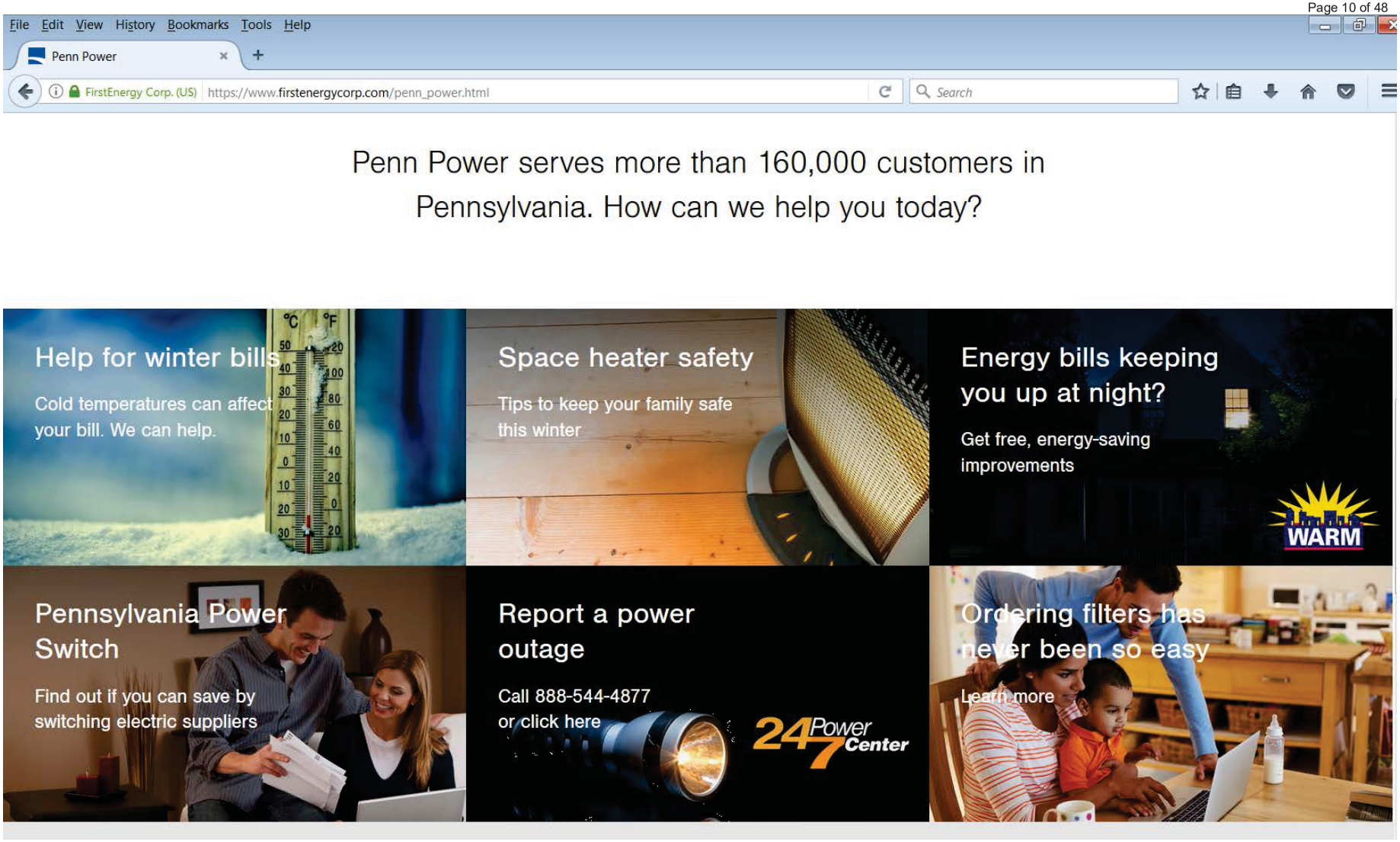
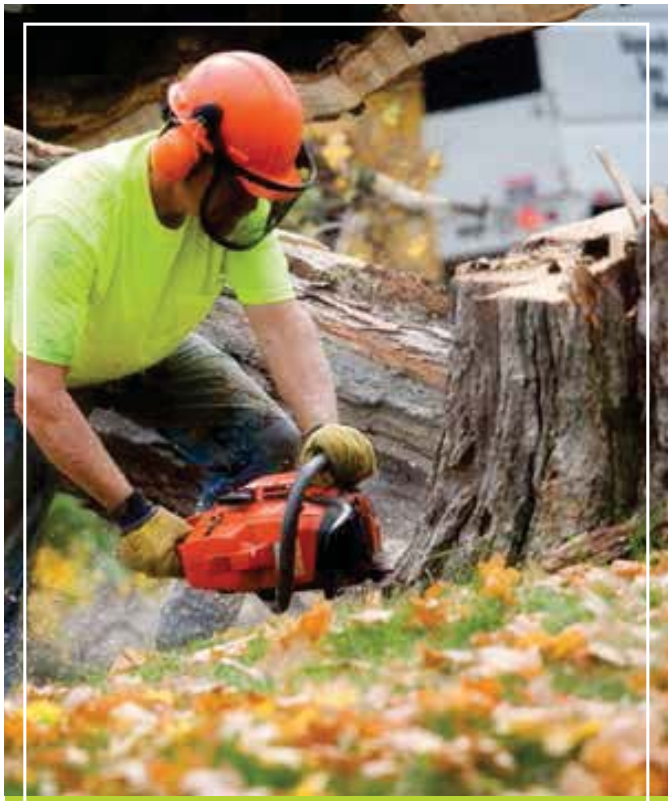


Exhibit RESA RJH-14



PROFESSIONAL TREE SERVICES

Free estimates.
Competitively priced.
Insured.

Met-Ed®
Penelec®
Penn Power®
West Penn Power®

FirstEnergy Companies

Trees do a lot more than just lend character to your property. According to the Council of Tree and Landscape Appraisers, a sound, mature tree can add between $1,000 and $10,000 to the value of your home.

Unfortunately, nature can wreak havoc on trees if they're not well-maintained. FirstEnergy's Tree Services can protect your trees and help you avoid unwanted problems by identifying areas that are susceptible to damage and addressing them. If your trees do suffer damage, our trusted professionals can provide a variety of emergency services, such as removing dangling limbs or the entire tree.

Tree Care Checklist

- ☑ Tree pruning
- ☑ Tree and stump removal
- ☑ Emergency tree care
- ☑ Tree health maintenance

Don't worry about the cost. Our estimates are FREE and there is no money down for the services. We can even add the cost to your electric bill as a LOW MONTHLY PAYMENT.*

Call 1-800-505-SAVE (1-800-505-7283)
for a free estimate weekdays, 8 a.m. to 5 p.m.

For more information, visit
www.firstenergycorp.com/products.

*For up to 36 months with approved credit. This program can be withdrawn at any time without prior notice. All services are performed by an independent contractor that is neither an affiliate nor agent of FirstEnergy Corp. or its affiliated companies, including the electric utility that provides your electric distribution service (hereafter referred to, collectively, as "FirstEnergy Companies"). The FirstEnergy Companies do not provide any warranty on the services performed and are not liable for damages or injuries that may arise as a result of the services provided. The customer is not required to purchase goods or services from the FirstEnergy Companies, and the good or service offered here may be obtained from other suppliers. A customer's decision to receive or not receive the good or service under this program will not influence the delivery of competitive or non-competitive retail electric service to that customer by the FirstEnergy Companies.

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West Penn Power®

FirstEnergy Companies

COMM8559-10-17-AI-HP

As a homeowner, you are responsible for the costs associated with repairing your home's heating system.

REPAIRS to the blower motors and wheels, belts, and gas valves damaged due to normal wear and tear are typically not covered by basic homeowners insurance and may cost hundreds of dollars.

PLEASE RESPOND WITHIN 30 DAYS TO ACCEPT THIS *OPTIONAL* PLAN

Important Plan Information: Eligibility: A residential homeowner with sole responsibility for the natural gas or propane, central forced-air, or circulating hot water central heating system may be eligible for the Plan. Residences not affixed to a permanent foundation, recreational vehicles and properties used for commercial purposes are not eligible for the Plan. If you live in a development community with a condominium, co-op or homeowners association, your heating system may not be an individual homeowner's responsibility, so please check with your association before accepting this Plan. If you own a residential property that has multiple heating systems, you must purchase a service agreement for each individual heating system for any one heating system to be eligible. Benefit Details: The Plan provides, up to the benefit amount, for the covered cost to repair the following natural gas or propane, central forced-air or circulating hot water central heating system parts: air scoops, aquastat, barometric damper, belts and pulleys, blower motors and assembly, circuit boards, circulators, ECO safeties, fan and limit controls, fusible links, gas valves, ignition controls, induced draft motor, blower, low water cutoff, main and pilot burners, pilots and thermocouples, pressure switch, regulator valves, relays, spill switches and transformers that are damaged due to normal wear and tear, not accident or negligence. Not covered: Furnaces or boilers rated at inputs of 400,000 BTU/HR or more; rooftop, through-the-wall and hanging units; space heaters, heat pumps, combination ambient heat/domestic hot water heating and oil units; air ducts, registers, air filters, zoning components and electronics, electronic air cleaners, humidifiers, thermostats, air balancing, chimney maintenance or repairs, heating jacket, asbestos or other insulation; heat exchangers, leaking boilers, boiler distribution piping, radiators; accidents and damage or negligence caused by you or others. Additional exclusions apply. Making a Service Call: Your Plan starts the day your form is processed, and there is an initial 30-day waiting period before you can make a service call, giving you 11 months of protection during the first year. This prevents service calls on pre-existing conditions and helps keep the protection affordable. Cancellation: You may cancel within 30 days of your start date for a full refund; cancellations after the first 30 days will result in a pro rata refund less any claims paid (where applicable). Most basic homeowners insurance policies do not cover repair due to normal wear and tear of this system. If you find you have similar protection, you can contact HomeServe to cancel and you will receive a refund of your service agreement fee, less any claims paid (where applicable). Renewal: Your Plan is based on an annual contract and is billed on a monthly basis through your utility bill. Your service agreement will be automatically renewed annually at the then-current renewal price.

To see full Terms and Conditions with complete protection and exclusion details prior to enrolling go to www.FirstEnergyPlans.com/HS. HomeServe is an independent company, separate from your local FirstEnergy Company, providing emergency home repair services and protection solutions to homeowners across the U.S.

This insert offers a brief description of the Heating System Repair Plan and is not a contract. The complete list outlining what the Heating System Repair Plan covers, and all of the Plan's limitations and exclusions, are set forth in the Heating System Repair Plan Terms and Conditions. To receive copies before enrollment, go to www.FirstEnergyPlans.com/HS. Customers have thirty (30) days following enrollment to review the Terms and Conditions without obligation. Customers can cancel this Plan at any time without prior notice. All services are performed by an independent technician. AMT Warranty Corp. is the company responsible for providing the Heating System Repair Plan to you and the delivery of your service benefits is managed by HomeServe USA Repair Management Corp. ("HomeServe") on behalf of AMT Warranty Corp.

The FirstEnergy Companies do not provide any warranty on the services performed and are not liable for damages or injuries that may arise as a result of the services provided. You are not required to buy the service plan in order to receive the same quality service from your electric utility. Your decision to receive or not receive the services under this program will not influence the delivery of competitive or non-competitive retail electric service to you by the FirstEnergy Companies.

COMM8614-11-17-HS-S3M

IMPORTANT INFORMATION

REGARDING YOUR HEATING SYSTEM

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Penelec®
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West Penn Power®

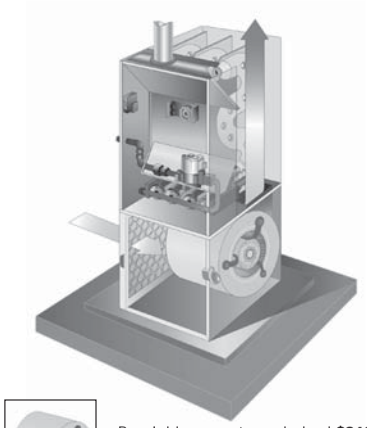
FirstEnergy Companies

Exhibit RESA RJH-14

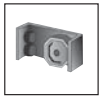
It's easy to avoid the high cost and worry of unexpected repairs with the Heating System Repair Plan from **HomeServe**.*

FirstEnergy selected HomeServe to offer this protection. For only $6.49 per month for the first year—a savings of 50 percent off the renewal price, eligible homeowners receive:

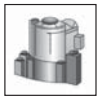
- Up to $1,750 in annual protection (30-day wait period with a money-back guarantee)—you have no bills to pay for covered repairs
- Multiple service calls per year—up to your annual benefit amount
- 24-Hour Repair Hotline—you have someone to call nights, weekends and holidays
- Access to local, licensed and insured technicians—so you can count on quality work



Repair blower motor and wheel **$619**
PLAN MEMBERS: NO CHARGE‡



Repair fan/limit control switch **$279**
PLAN MEMBERS: NO CHARGE‡



Repair gas valve **$467**
PLAN MEMBERS: NO CHARGE‡

‡Costs shown are estimates only. Actual repair costs could be more or less than stated cost. HomeServe national average repair costs as of January 2016. No charge for covered repairs up to your annual benefit amount.

Visit www.FirstEnergyPlans.com/HS, call toll free 1-888-658-3800
or mail the completed form with your monthly statement

*HomeServe USA Repair Management Corp. ("HomeServe"), PA registration #053636, with corporate offices located at 601 Merritt 7, 6th Floor, Norwalk, CT 06851, is an *independent company separate from FirstEnergy Corp.*, its operating companies, subsidiaries and affiliates, including the electric utility that provides your electric distribution service (hereafter referred to, collectively, as "FirstEnergy Companies"). HomeServe offers this *optional* service plan as an authorized representative of the contract issuer, AMT Warranty Corp., 59 Maiden lane, 43rd Floor, New York, NY 10038. Your choice of whether to participate in this service plan will not affect the price, availability or terms of service from the FirstEnergy Companies.

ACCEPTANCE FORM

Please mail this completed acceptance form with your monthly statement.

YES, I want the optional Heating System Repair Plan from HomeServe for only $6.49 per month. (1711BFPA581APAZ-9999)

Name _____

Account Number **(required)** _____

Address _____

City _____ State _____ ZIP _____

Phone _____

Email _____

Please sign me up for the Heating System Repair Plan from HomeServe and include the $6.49 monthly charge, plus any applicable taxes, on my electric bill (if available). I understand that this optional Plan is billed on a monthly basis and based on an annual contract that will be *automatically renewed annually* at the then-current renewal price (currently $12.99 per month). I grant permission for my utility company to share my customer information, including account number, with HomeServe only as needed to process my enrollment and bill me. I have the option to cancel this contract at any time without additional cost to me by calling 1-888-658-3800. I confirm that I am the homeowner and have read the information in this package and meet the eligibility requirements for this Plan.

Signature (required) _____

Exhibit RESA RJH-14

Let us handle your next electrical project. We make it easy!

Our services include:

- Interior and exterior repairs and upgrades
- Home safety inspections
- Wiring work, plug and switch installation
- Interior and exterior lighting
- Circuit breakers, fuses and meters
- Whole-house surge protection installation

To schedule your free estimate:

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SMARTMART™ by FirstEnergy

*For up to 36 months with approved credit.

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West Penn Power®

FirstEnergy Companies

COMM8631-12-17-AI-S3M

Exhibit RESA RJH-14

Exhibit RESA RJH-14

SURGES HAPPEN. PROTECT YOUR STUFF.

The cost to repair damaged home appliances and devices can add up quickly after an electrical surge. Our Surge Assist Program is an affordable way to make sure you're covered.

IF A SURGE HAPPENS, GET SOME PEACE OF MIND WITH A PROGRAM THAT CAN REPAIR OR REPLACE APPLIANCES AND DEVICES AFFECTED BY A SURGE OR REIMBURSE YOUR SURGE-RELATED EXPENSES.

- Several coverage levels that fit your individual needs – **starting at $5.49 per month!**
- No hidden fees or deductibles
- Convenient invoicing on your monthly electric bill (if available)
- 30-day, money-back guarantee

Protecting all of your home's electronics can be expensive. Our Surge Assist Program is a low-cost way to protect you from the cost if damage occurs. For more information, or to enroll today, visit **www.SMART-MART.COM/SHOP/SURGEASSIST**, call **1-800-505-SAVE** or return the completed form on the back of this insert!

YES! Please enroll me in the Surge Assist Program.

To enroll, simply fill out and return this form with your electric bill payment.

Include the $5.49* charge on my monthly electric bill (if available).
I understand that I will be protected for up to $1,000 per incident/ $2,000 annually in repairs or replacement, and that I'll receive the complete terms and conditions of the plan by mail within two weeks after the program commencement date.

☐ **Double my protection for only $1.50 more!**

By checking this box, I opt to increase my protection level to a total of $2,000 per incident/$4,000 annually in repairs or replacement for only **$1.50 per month additional!** (Please call if you desire higher levels of protection.)

Name: _____
(Please print)

Account Number: (Located on your electric bill)

___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___

Address: _____

City, State, ZIP: _____

Phone: _____

Email: _____

Signature: _____
(Required for enrollment)

*Enrollment eligibility may be contingent on our ability to add the program charge to the monthly electric utility bill. There is an initial 30-day waiting period to make a claim, giving you 11 months of protection during the first year of the program. This prevents service calls on pre-existing conditions and helps keep the program affordable.

These programs can be withdrawn anytime without prior notice. FirstEnergy Corp. or its affiliated companies, including the electric utility that provides your electric distribution service (hereafter referred to, collectively, as "FirstEnergy Companies") do not provide any warranty on the services performed and are not liable for damages or injuries that may arise as a result of the services provided. The customer is not required to purchase the good or service from FirstEnergy Companies, and the good or service may be obtained from other suppliers. A customer's decision to receive or not receive the good or service from FirstEnergy Companies will not influence the delivery of competitive or non-competitive retail electric service to that customer by the FirstEnergy Companies.

FirstEnergy

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COMM8653-01-18-MT-S3M

Exhibit RESA RJH-14

Understand Your Responsibility

Many homeowners aren't aware that they own components of the exterior electrical system on their property.

Some components, including the weatherhead, riser, insulator, meter base and service entrance conductor, on your property belong to you. You are financially responsible for these components and the full repair costs. Your exterior electrical system may weaken and break over time due to damage caused by normal wear and tear, including aging and ground shifting. Because these components on your property are typically not inspected, a failure is almost impossible to predict. In addition, the materials used, region and date of installation can affect the rate of breakdown for these components.

PLEASE RESPOND WITHIN 30 DAYS TO ACCEPT THIS *OPTIONAL* PLAN

Important Plan Information: Eligibility: A residential homeowner with sole responsibility for overhead or underground exterior electrical line components may be eligible for the Plan. Residences with electrical service entrances rated at less than 80 amps, residences not affixed to a permanent foundation, recreational vehicles and properties used for commercial purposes are not eligible for the Plan. If you live in a development community with a condominium, co-op or homeowners association, your exterior electrical system may not be an individual homeowner's responsibility, so please check with your association before accepting this Plan. Benefit Details: The Plan provides, up to the benefit amount, for the covered cost to repair or replace the weatherhead, insulator, riser, meter base, service entrance conductor; and permanent wiring to detached garages and to fixtures such as light posts and pool heaters that are damaged due to normal wear and tear, not accident or negligence. The Plan also provides reimbursement of up to $100 for fixture installation if required in conjunction with a covered repair, and fees charged by your local FirstEnergy Company to disconnect or reconnect your electricity to make a covered repair. Not covered: Homes with electrical service entrances rated less than 80 amps, repairs to damage arising from the disconnection or interruption to the main electrical supply, transformers, repair of low voltage wiring, accidents and damage or negligence caused by you or others. The meter that measures the amount of electricity used is not covered under this Plan, but it is covered by your local FirstEnergy Company. Additional exclusions apply. Making a Service Call: Your Plan starts the day your form is processed, and there is an initial 30-day waiting period before you can make a service call, giving you 11 months of protection during the first year. This prevents service calls on pre-existing conditions and helps keep the Plan affordable. Cancellation: You may cancel within 30 days of your start date for a full refund; cancellations after the first 30 days will result in a pro rata refund less any claims paid (where applicable). Most basic homeowners insurance policies do not cover repair or replacement due to normal wear and tear of these components. If you find you have similar protection, you can contact HomeServe to cancel and you will receive a refund of your service agreement fee, less any claims paid (where applicable). Renewal: This Plan is based on an annual contract and is billed on a monthly basis through your utility bill. Your service agreement will be automatically renewed annually at the then-current renewal price.

To see full Terms and Conditions with complete protection and exclusion details prior to enrolling go to www.FirstEnergyPlans.com/EEW. HomeServe is an independent company, separate from your local FirstEnergy Company, providing emergency home repair services and protection solutions to homeowners across the U.S.

This insert offers a brief description of the Exterior Electrical Line Protection Plan and is not a contract. The complete list outlining what the Exterior Electrical Line Protection Plan covers, and all of the Plan's limitations and exclusions, are set forth in the Exterior Electrical Line Protection Plan Terms and Conditions. For a copy of the Exterior Electrical Line Protection Plan Terms and Conditions before enrollment, go to www.FirstEnergyPlans.com/EEW. Customers have thirty (30) days following enrollment to review the Terms and Conditions without obligation. Customers can cancel this Plan at any time without prior notice. All services are performed by an independent technician. AMT Warranty Corp. is the company responsible for providing the Exterior Electrical Line Protection Plan to you and the delivery of your service benefits is managed by HomeServe USA Repair Management Corp. ("HomeServe") on behalf of AMT Warranty Corp.

The FirstEnergy Companies do not provide any warranty on the services performed and are not liable for damages or injuries that may arise as a result of the services provided. You are not required to buy the service plan in order to receive the same quality service from your electric utility. Your decision to receive or not receive the services under this program will not influence the delivery of competitive or non-competitive retail electric service to you by the FirstEnergy Companies.

COMM8673-02-18-HS-S3M

Exterior Electrical Line

Responsibility Review

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Penelec®
Penn Power®
West Penn Power®

FirstEnergy Companies

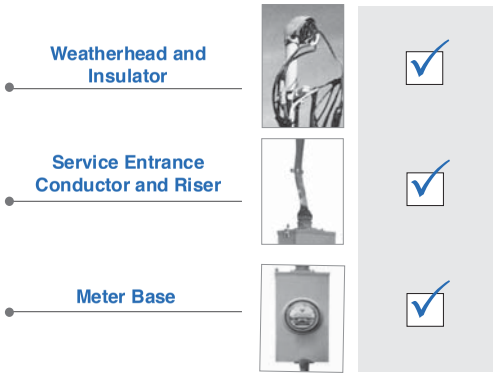
Without the Exterior Electrical Line Protection Plan from HomeServe* you may be faced with hundreds of dollars in bills to repair certain exterior electrical components on your property in the event of a breakdown.

That's why FirstEnergy partnered with HomeServe to offer this *optional* protection. For only $2.99 per month—a savings of 50% off the first year†, eligible homeowners get valuable peace of mind. Protection provides:

- -Up to $3,000 in annual protection (30-day waiting period with a money-back guarantee)
- -Multiple service calls per year up to your annual benefit amount
- -24-Hour Repair Hotline available nights, weekends and holidays
- -Access to local, licensed and insured technicians
- -One year guarantee on covered repairs

Please Respond within 30 Days. As a plan member there are no repair bills to pay, up to the benefit amount, or deductible to meet.

COVERED EXTERIOR ELECTRICAL COMPONENTS



The meter that measures the amount of electricity used is not covered under this Plan, but it is covered by your local FirstEnergy Company.

Visit www.FirstEnergyPlans.com/EEW, call toll free 1-888-658-3800
or mail the completed form with your monthly statement

†Savings compared to renewal price.

*HomeServe USA Repair Management Corp. ("HomeServe"), PA registration #053636, with corporate offices located at 601 Merritt 7, 6th Floor, Norwalk, CT 06851, is an *independent company separate from FirstEnergy Corp.*, its operating companies, subsidiaries and affiliates, including the electric utility that provides your electric distribution service (hereafter referred to, collectively, as "FirstEnergy Companies"). HomeServe offers this *optional* service plan as an authorized representative of the contract issuer, AMT Warranty Corp., 59 Maiden lane, 43rd Floor, New York, NY 10038. Your choice of whether to participate in this service plan will not affect the price, availability or terms of service from the FirstEnergy Companies.

ACCEPTANCE FORM

Please mail this completed acceptance form back with your monthly statement.

YES, I want the optional Exterior Electrical Line Protection Plan from HomeServe for only $2.99 per month. (1802BFPA564APAZ-9999)

Name

Account Number **(required)**

Address

City State ZIP

Phone

Email

Please sign me up for the Exterior Electrical Line Protection Plan from HomeServe and include the $2.99 monthly charge, plus any applicable taxes, on my electric bill (if available). I understand that this optional Plan is billed on a monthly basis and based on an annual contract that will be *automatically renewed annually* at the then-current renewal price (currently $5.99 per month). I grant permission for my utility company to share my customer information, including account number, with HomeServe only as needed to process my enrollment and bill me. I have the option to cancel this contract at any time without additional cost to me by calling 1-888-658-3800. I confirm that I am the homeowner and have read the information in this package and meet the eligibility requirements for this Plan.

Signature (required)

Need electrical services for the holidays? We can help! Trouble viewing? View in browser.

Penelec®
A FirstEnergy Company

The holidays are coming. Are you ready?

When it comes to keeping your family safe this holiday season, don't leave your electrical system to chance. Faulty wiring and electrical components can cause fire hazards and power outages. An electrician can quickly rewire faulty sections and repair switches, outlets and control panels. Call us and a local, fully insured electrical professional will take care of that project before your guests arrive. You can count on us for professional, high-quality work at an affordable price. We can provide solutions quickly and safely with no money down and low monthly payments on your electric bill for up to 36 months with approved credit. We make it easy with:

- **Interior or exterior repairs and upgrades**
- **Wiring work, outlet and switch installation**
- **Interior and exterior lighting**
- **Circuit breakers, fuses and meter bases**

Contact us today for a no-obligation, no-cost estimate. We can discuss your next big electrical project.

COMPLIMENTARY ESTIMATE FOR ELECTRICAL SERVICES

DID YOU KNOW?

You should never connect more than three strings of standard holiday lights. Doing so could blow a fuse.

Roughly 3,300 home fires originate in extension cords each year. Extension cords can overheat and cause fires when used improperly. Consider adding an outlet.

Sources: www.esfi.org

SMARTMART™ by FirstEnergy

For more home services and products, log onto Smart-mart.com by FirstEnergy.

Protect yourself from unexpected repair costs! Trouble viewing? View in browser.

Penelec®
A FirstEnergy Company

Are you prepared for costly home repairs?

Paying for home repairs has never been this easy....and, you could get 50% off* the first year of your plan! Protect against the cost and inconvenience of covered repairs to systems throughout your home with HomeServe. We make it easy with:

- **Affordable Protection Plans – billed monthly right on your electric bill (if available)**
- **Zero deductible, zero worry – no bills to pay for covered repairs up to the annual benefit amount**
- **24/7/365 Emergency Repair Hotline – priority response from a local, licensed and insured contractor**

Act now and get **50% OFF*** your first year's plan.

Visit FirstEnergyPlans.com or click "Pick a Plan" below to make sure you are covered if the unexpected happens.

Get Protected, Pick a Plan

DID YOU KNOW?

- **You own and are responsible for repairing certain parts of your exterior electrical system and would need to coordinate and pay for repairs.**
- **Most basic homeowners insurance policies do NOT cover exterior electrical line failures due to normal wear and tear.**

SMARTMART™ by FirstEnergy

For more home services and products, log onto Smart-mart.com by FirstEnergy.

*Savings as compared to the renewal price.

Plans subject to eligibility restrictions, exclusions, 30-day waiting period and other limitations. To see full Terms and Conditions with complete protection and exclusion details prior to enrolling visit www.FirstEnergyPlans.com

The FirstEnergy Companies do not provide any warranty on the services performed and are not liable for damages or injuries that may arise as a result of the services provided. You are not required to buy the service plan in order to receive the same quality service from your electric utility. Your decision to receive or not receive the services under this program will not influence the delivery of competitive or noncompetitive retail electric service to you by the FirstEnergy Companies.

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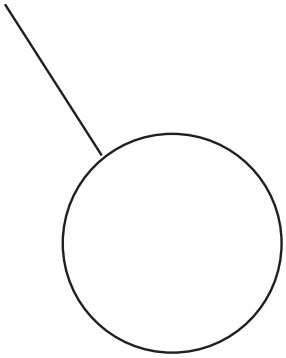
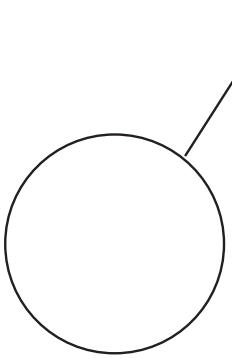
Email sent by: FirstEnergy Companies
76 South Main St. Akron, OH 44308



Two-sided printing



Your electric service connection –

what are YOU responsible for?

As a homeowner, you are responsible for the maintenance and repair of:

- attachment hardware
- riser
- meter base
- electrical wiring from the meter base to the electric panel
- wiring throughout the home
- and, in some circumstances, the underground service wire

If you're ALREADY enrolled in the Interior and Exterior Electrical Line Protection Plan(s) from HomeServe and your FirstEnergy electric utility company, you may be covered. Call 1-888-878-9700 for an explanation of your plan benefits and what repairs are included.

If you're NOT enrolled, you can find electrical contractors online or listed in the phone book. Or, if you prefer, we can connect you with a local, insured electrical technician (independent contractor) who will provide a free estimate for needed repairs. Call 1-800-505-SAVE, Monday through Friday from 8 a.m. to 5 p.m.

To protect yourself from future electrical repair costs through the Interior or Exterior Electrical Line Protection Plan, call HomeServe at 1-888-658-3800 (Mon-Fri 8 a.m. - 5 p.m.), or visit www.firstenergycorp.com/products and click on "Protect Your Home."

COMM8489-06-17-CV-AP

FirstEnergy®

We offer a variety of products and services to our customers. For more information visit www.firstenergycorp.com/products.

Your electric service connection – what are YOU responsible for?

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- attachment hardware
- riser
- meter base
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- wiring throughout the home
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FirstEnergy®

Exhibit RESA RJH-14

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COMM8488-06-17-CV-AP

Exhibit RESA RJH-14

Your home is one of your biggest investments. Enhance its brilliance after sunset with high-quality outdoor lighting from FirstEnergy. Our unique landscape and deck lighting packages not only boost the warmth and beauty of your property, they also add value and discourage vandalism.

DURABLE, HIGH-QUALITY FIXTURES

You can choose from a variety of modern fixtures manufactured in the USA from top-grade materials – with UL-Listed transformers for added protection. Our weather-resistant products withstand this region's extreme temperatures. The efficient, low-voltage bulbs automatically turn off if they become overheated or overloaded.

EXPERTLY DESIGNED

Skilled, local contractors will help you design a layout tailored to your home's unique features. The results will reflect your intentions – whether it's creating a warm ambiance for a night-time meal or highlighting the features of your home's facade. Ask about our free home demonstration.

PROFESSIONAL INSTALLATION

Once you decide on a suitable layout, just sit back and relax while your safe, durable fixtures are professionally installed. Our contractors have years of experience to get the job done quickly and efficiently with little or no disturbance to you and your property.

PAYMENT OPTIONS

Take advantage of our easy payment plan – no money down and low monthly payments (three to 48 months with approved credit) on your monthly electric bill.

Exhibit RESA RJH-14

Dramatically enhance your home's appeal after dark with outdoor lighting that's professionally designed and installed. You can choose from two complete landscape lighting packages. Both offer flexible designs to enhance your home and property.

	TOWN AND COUNTRY PACKAGE	ESTAGE PACKAGE
HOME SIZE	• two-story less than 2,400 square feet • ranch homes less than 1,400 square feet	• two-story homes larger than 2,400 square feet • ranch homes larger than 1,400 square feet
DESIGN CONSULTATION	yes	yes
NUMBER OF GOLD LEVEL FIXTURES*	6	10
FEET OF UNDERGROUND WIRING	150 feet	250 feet
TRANSFORMER	300-watt with capacity for up to 6 more fixtures	600-watt with capacity for up to 16 more fixtures
IN-USE COVERS	yes	yes

*Actual fixtures at any level may vary slightly from fixtures shown depending on availability in your area.

GOLD LEVEL
ACCENT LIGHTING

MINI WELL (INGROUND)

MICRO ACCENT

EYEBROW ACCENT SHROUD

BULLYTE LONG

WELL LIGHT

1-800-505-SAVE (1-800-505-7283) **weekdays, 8 a.m. to 5 p.m.**

GOLD LEVEL
PATH LIGHTING

CHINA HAT 6”

CAST ALUMINUM

BRASS ADJUSTABLE

TEXTURED SIDE MOUNT

MUSHROOM

HORIZON

PLATINUM LEVEL
PATH LIGHTING

Choose from these Platinum Level fixtures to upgrade either package (for an additional fee).

BRASS CONE

MARINE LANTERN

HAMMERED ROOF

Prolong daylight and accentuate your deck, patio, gazebo or pool with deck lighting. Choose from two complete packages.

	SUNSET PACKAGE	TWILIGHT PACKAGE
DECK SIZE	150 square feet or less	150 to 300 square feet
DESIGN CONSULTATION	yes	yes
NUMBER OF FIXTURES*	6	8
FEET OF HIDDEN WIRING	150 feet	200 feet
TRANSFORMER	150-watt with capacity for up to 2 more fixtures	300-watt with capacity for up to 5 more fixtures
IN-USE COVERS	yes	yes

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GOLD LEVEL
DECK LIGHTING

CAST MINI WEDGE

LOUVERED DOWNLIGHT

CAST ROUND

TRIANGLE

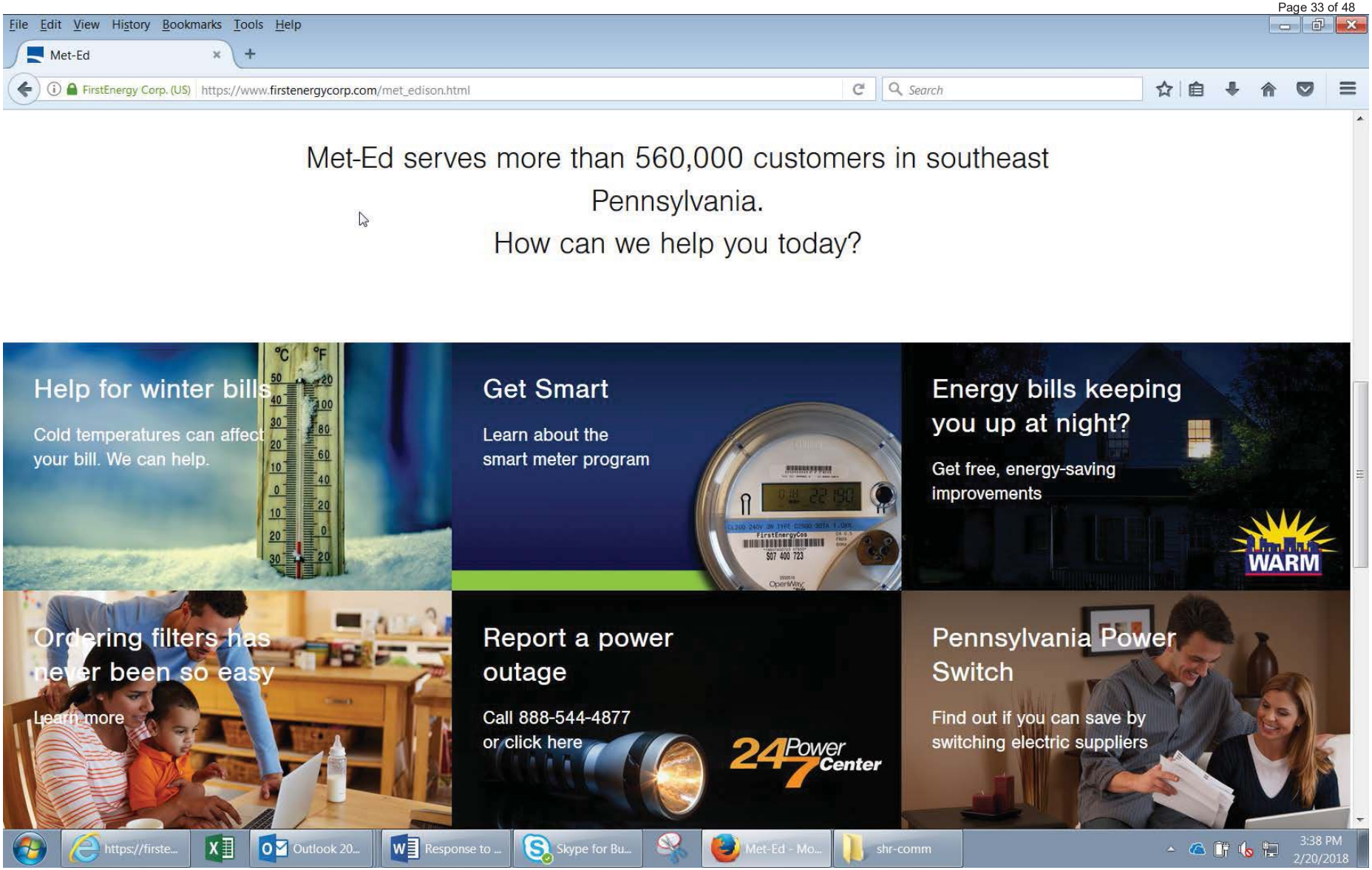
1-800-505-SAVE
(1-800-505-7283)
weekdays 8 a.m. to 5 p.m.

FirstEnergy

WWW.FIRSTENERGYCORP.COM

This program can be withdrawn anytime without prior notice. All services are performed by an independent contractor. FirstEnergy and the FirstEnergy operating companies do not provide any warranty on the services performed and are not liable for damages or injuries that may arise as a result of the services provided. The customer is not required to purchase the good or service from FirstEnergy or the FirstEnergy operating company, and the good or service may be obtained from other suppliers. A customer's decision to receive or not receive the good or service from FirstEnergy or the FirstEnergy operating company will not influence the delivery of competitive or non-competitive retail electric service to that customer by the FirstEnergy operating company.

COMM8621-10-17-AI-AP


File Edit View History Bookmarks Tools Help
Met-Ed
FirstEnergy Corp. (US)
https://www.firstenergycorp.com/met_edison.html
Search
Met-Ed serves more than 560,000 customers in southeast Pennsylvania.
How can we help you today?
Help for winter bills
Cold temperatures can affect your bill. We can help.
Get Smart
Learn about the smart meter program
Energy bills keeping you up at night?
Get free, energy-saving improvements
WARM
Ordering filters has never been so easy
Learn more
Report a power outage
Call 888-544-4877 or click here
24/7 Power Center
Pennsylvania Power Switch
Find out if you can save by switching electric suppliers
https://firste...
Outlook 20...
Response to ...
Skype for Bu...
Met-Ed - Mo...
shr-comm
3:38 PM
2/20/2018

Brubaker-Schaub, Cheryl A

From: Met-Ed <info@info-firstenergycorp.com>
Sent: Wednesday, November 15, 2017 9:52 AM
To: Straight, Jeffrey W
Subject: *EXTERNAL* Are you ready for the holidays?

Need electrical services for the holidays? We can help! Trouble viewing? View in browser.

Met-Ed
A FirstEnergy Company

The holidays are coming. Are you ready?

When it comes to keeping your family safe this holiday season, don't leave your electrical system to chance. Faulty wiring and electrical components can cause fire hazards and power outages. An electrician can quickly rewire faulty sections and repair switches, outlets and control panels. Call us and a local, fully insured electrical professional will take care of that project before your guests arrive. You can count on us for professional, high-quality work at an affordable price. We can provide solutions quickly and safely with no money down and low monthly payments on your electric bill for up to 36 months with approved credit. We make it easy with:

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Sources: www.esfi.org

For more home services and products, log onto
Smart-mart.com by FirstEnergy.

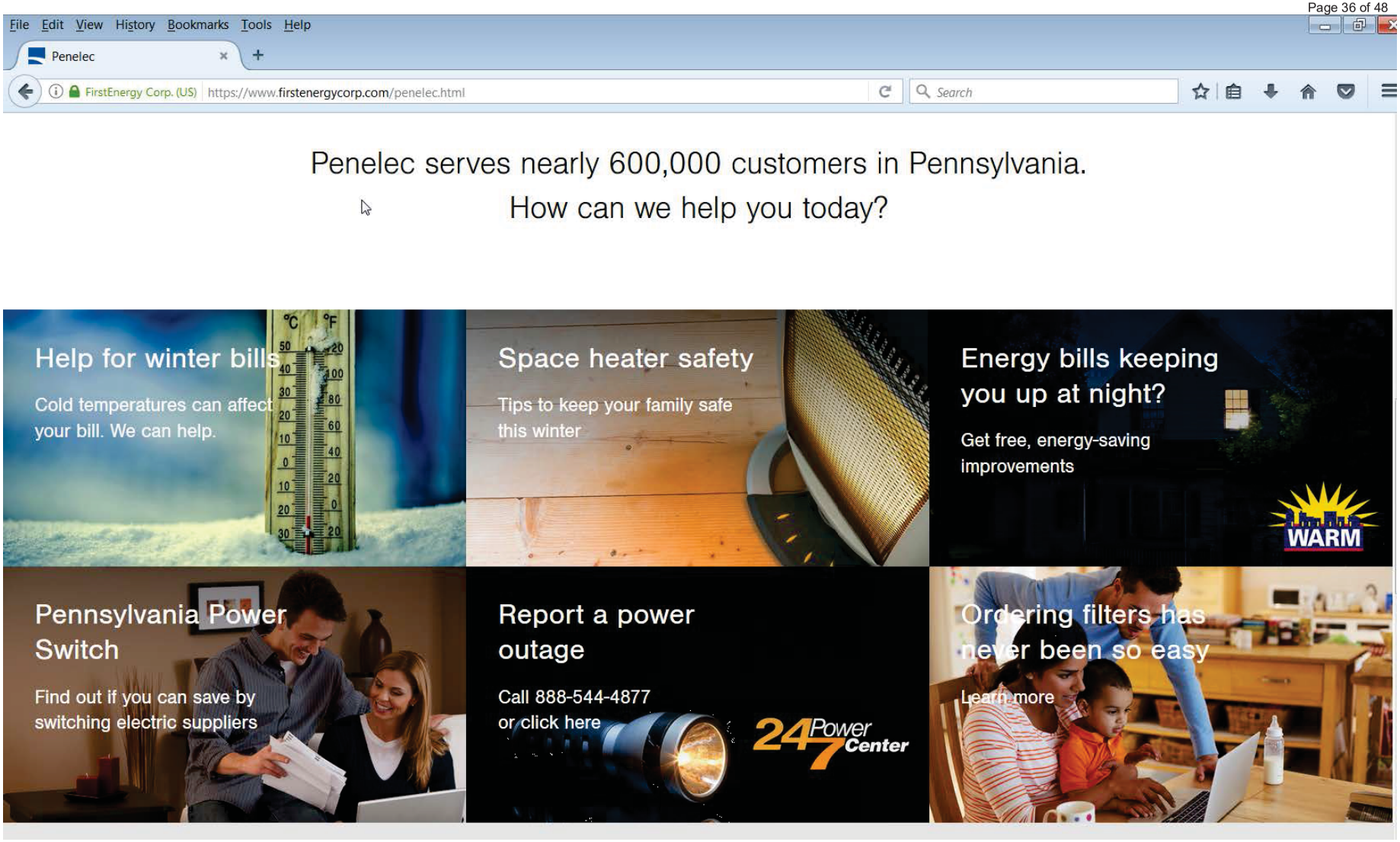

Exhibit RESA RJH-14

Brubaker-Schaub, Cheryl A

From: Penelec <info@info-firstenergycorp.com>
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To: Straight, Jeffrey W
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Smart-mart.com by FirstEnergy.

Exhibit RESA RJH-14

For as little as $25 per month* and no money down, adding a touch of style to your home has never been this affordable or *looked so good.*

LUMINAIRE COLLECTION

- Package prices start as low as $27.50/month for 36 months on your utility bill*. Low-voltage installation available at a lower cost.
- Includes standard installation and the fixture.**
- Other sizes and styles available.

1.800.505.7283
www.smart-mart.com/p/FEP-S0000231B

PL125-13
11" x 16.75"
100 W MEDIUM-BASE BULB

PLW017-13
9" x 12"
100 W MEDIUM-BASE BULB

Oil-Rubbed Bronze
Etched Opal Glass

PL125-14
10" x 20.25"
100 W MEDIUM-BASE BULB

PLW017-14
8" x 12.25"
100 W MEDIUM-BASE BULB

Oil-Rubbed Bronze, Old Penny or Black
Clear Seeded Glass

PL125-16
11" x 20.5"
100 W MEDIUM-BASE BULB

PLW017-16
7" x 11.5"
100 W MEDIUM-BASE BULB

Oil-Rubbed Bronze
Clear Seeded Glass

PL125-17
10" x 25"
3-60 W CANDELABRA BULB

PLW017-17
7.75" x 21"
2-60 W CANDELABRA BULB

Vintage Rust or Black
Clear Glass

RADIANCE COLLECTION

- Package prices start as low as $25/month for 36 months on your utility bill*. Low-voltage installation available at a lower cost.
- Includes standard installation and the fixture.**
- Other sizes and styles available.

1.800.505.7283
www.smart-mart.com/p/FEP-S0000231B

PL123-02
9.25" x 24.5"
100 W MEDIUM-BASE BULB

PLW017-02
7" x 15.5"
100 W MEDIUM-BASE BULB

Black or Tannery Bronze
Clear Beveled Glass

PL123-03
11" x 18.5"
3-60 W CANDELABRA BULB

PLW017-03
7" x 13"
100 W MEDIUM-BASE BULB

Sienna
Seeded Glass

PL123-05
8" x 18"
100 W MEDIUM-BASE BULB

PLW017-05
7" x 13.75"
100 W MEDIUM-BASE BULB

Bronze
Bronze Seeded/Wilshire Glass

PL123-06
8" x 16.25"
100 W MEDIUM-BASE BULB

PLW017-06
8" x 14.5"
100 W MEDIUM-BASE BULB

Black
Clear Seeded Glass or Etched Seeded Glass

PL123-07
12" x 23"
3-60 W CANDELABRA BULB

PLW017-07
9" x 14"
150 W MEDIUM-BASE BULB

Pewter, Antique Brass, Aged Copper,
Medici Bronze or Mystic Black
Clear Beveled Glass

PL123-09
10.25" x 23.75"
200 W MEDIUM-BASE BULB

PLW017-09
8.25" x 17.75"
150 W MEDIUM-BASE BULB

Textured Black
Clear Seeded Glass

PL123-10
10" x 24"
3-60 W CANDELABRA BULB

PLW017-10
8" x 16.25"
100 W MEDIUM-BASE BULB

Corona Bronze
Clear Hammered Glass

PL123-11
9.5" x 23.75"
2-60 W CANDELABRA BULB

PLW017-11
7.75" x 17.5"
100 W MEDIUM-BASE BULB

Vintage Rust or Black
Clear Hammered Glass

PL123-12
12" x 16"
3-60 W CANDELABRA BULB

PLW017-12
8" x 13"
100 W MEDIUM-BASE BULB

Oil-Rubbed Bronze
Seeded Glass

Exhibit RESA RJH-14

INSTALLING A POST LAMP

can add beauty and a touch of style that sets your home apart from the rest. The warm glow of an electric post lamp is also an affordable way to make your home more inviting, and it provides a brighter, safer environment.

TIMELESS DESIGN OPTIONS

Whether you're looking for classic or contemporary, simple or sophisticated, we have a variety of styles to reflect the quality and beauty of your home. Complete the look with a coordinating wall-mounted fixture.

DURABLE, HEAVY GAUGE CONSTRUCTION

The well-crafted heads and posts are made of cast aluminum, providing light and beauty to your yard for many years to come. Plus, the post is buried in concrete for sturdiness, even in harsh weather. Coordinating posts are offered in a variety of colors and styles.

MONTHLY PAYMENT PLAN

Take advantage of our easy payment plan – no money down and low monthly payments (three to 36 months with approved credit) on your monthly electric bill, if available.

VERSATILE AND PRACTICAL

All of the fixtures can be installed with LEDs, CFLs, incandescent or low-voltage bulbs.

Call us at
1-800-505-SAVE
(1-800-505-7283)
weekdays, 8 a.m. – 5 p.m.
for additional information about
these or other lighting options.
www.smart-mart.com/p/FEP-S0000231B

*For 36 months with approved credit.

**Actual fixtures may vary slightly from fixtures shown, depending on availability in your area.

Post lamp installations are custom projects and may require additional wiring, trenching beneath concrete, removal of old post lamp or installation of a suitable (GFI) outlet. Prices may vary depending on the installation, local codes and site requirements.

FirstEnergy®

COMM8620-10-17-AI -AP

Brubaker-Schaub, Cheryl A

From: Penn Power <info@info-firstenergycorp.com>
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To: Straight, Jeffrey W
Subject: *EXTERNAL* Are you ready for the holidays?

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Sources: www.esfi.org

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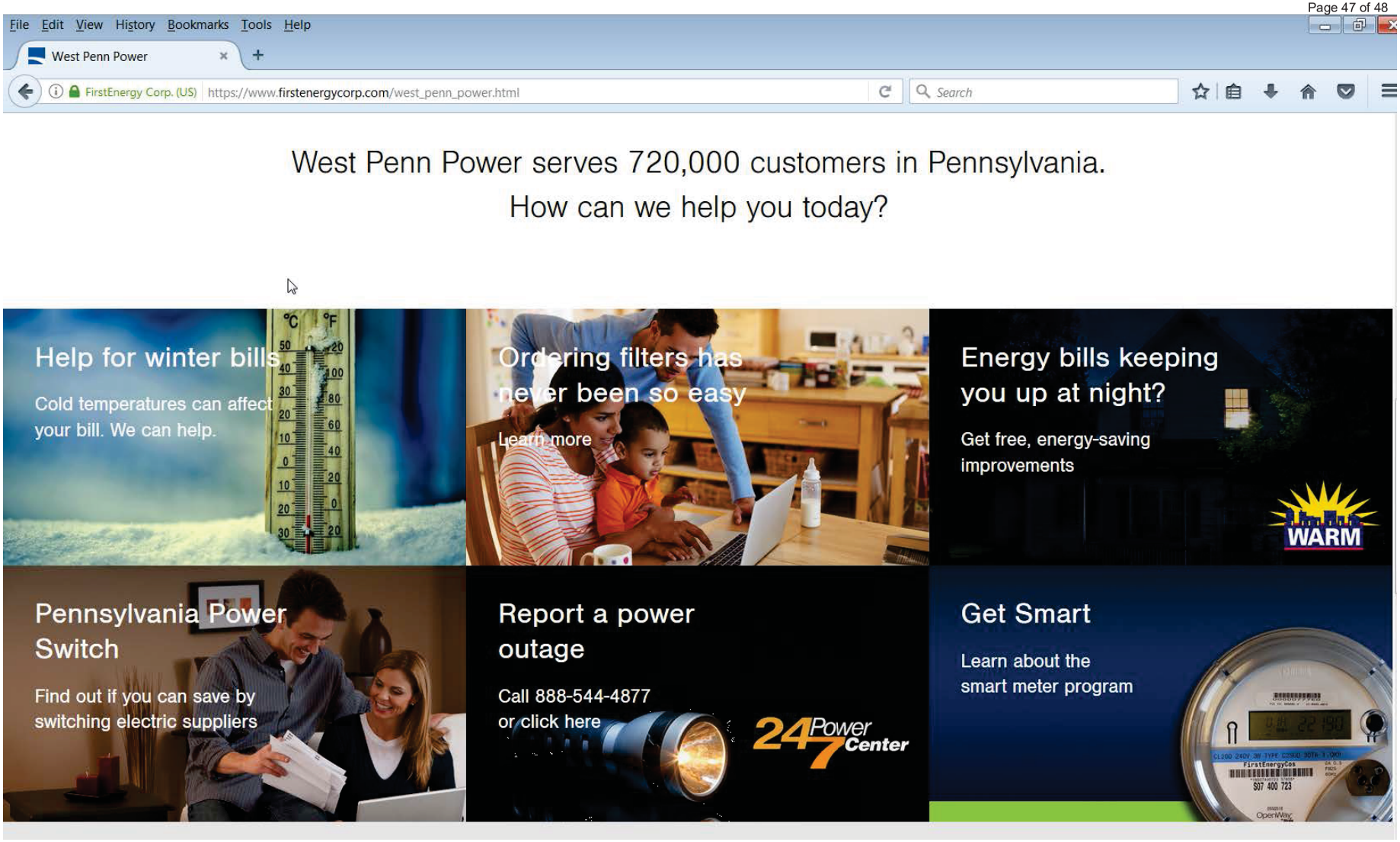


Exhibit RESA RJH-14

FirstEnergy
Forestry Services
"Clearing the Way"

A MESSAGE FROM FIRSTENERGY FORESTRY SERVICES

To _____

We were here today ____/____/____ to check the tree condition near the power lines.

The tree condition:

- ☐ Needs immediate attention and will be taken care of within the next _____ days.
- ☐ Does not need immediate attention. We schedule tree trimming or tree removals by geographical area. After completion of all requests and normal maintenance in an area, the workers proceed to the next scheduled area. Your request has been recorded and will be handled as expediently as possible when your area is next scheduled for maintenance. We estimate this will be during _____.
- ☐ Does not involve your electric wires. Please contact either your telephone or cable television supplier for assistance.
- ☐ Is the tree owners responsibility. However, to permit safe tree work by yourself or a contractor you wish to employ, FirstEnergy offers a Temporary Disconnect Service at your request for a fee. To request a temporary disconnect, contact your FirstEnergy electric operating company at _____. Please be sure to contact us several business days in advance
- ☐ See comments on back.

Call _____ if you have any questions.

Signed _____

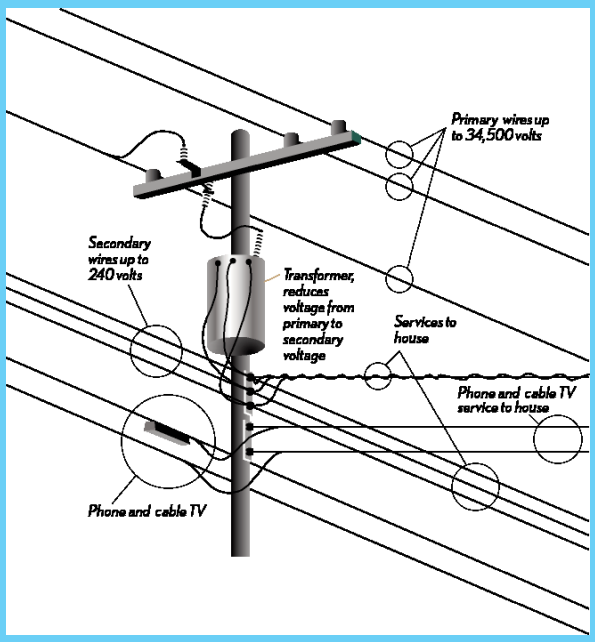
FirstEnergy may provide a free estimate for work that is beyond FirstEnergy's responsibility to provide electric service.

FirstEnergy

Ohio Edison • The Illuminating Company • Toledo Edison
Met-Ed • Penelec • Penn Power • Jersey Central Power & Light
West Penn Power • Mon Power • Potomac Edison

For more information about tree work performed by FirstEnergy, visit our Website at www.firstenergycorp.com

FORM 438 (REV. 04-14)
ID NO. 58059453



IDENTIFYING UTILITY LINES

Identifying power, telephone and cable television lines on a utility pole can be confusing. As a general rule of thumb, electric lines are usually located at the top of the pole, furthest from the ground

- ☐ The tree work you requested involves your service conductor which has sufficient clearance at this time. Your request has been recorded and the work will be performed during normal routine maintenance.
- ☐ Is your responsibility. See comments.

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- ☐ **Call 1-800-505-SAVE (7283) for a free estimate.**

JOINT PETITION OF METROPOLITAN EDISON COMPANY, PENNSYLVANIA ELECTRIC COMPANY, PENNSYLVANIA POWER COMPANY, WEST PENN POWER COMPANY FOR APPROVAL OF THEIR DEFAULT SERVICE PROGRAMS
Docket Nos. P-2017-2637855, P-2017-2637857, P-2017-2637858, P-2017-2637866

RETAIL ENERGY SUPPLY ASSOCIATION Set I, No. 15

"Have any of the EDCs included any information in any EDC customer bill inserts regarding any of the following types of products and/or services.

a. Electric vehicle charging systems
b. Connected or smart home products
c. Lighting products or installation
d. Home warranty products
e. HVAC service plans, equipment upgrades, or similar products and services
f. Utility line protection plans
g. Surge protection products or services
h. Insurance products or services
i. Disaster recovery products or services
j. Home security products or services
k. Any other "Non-Commodity" product (i.e. products or services beyond the energy commodity or "basic service") not listed in the prior sections.
l. If yes, detail which EDCs permit such billing and identify the products/services that have been billed using such methodology."

RESPONSE:

From the start of 2017 to present, the EDCs have included information regarding their product offerings, including: (c) – Lighting products or installation; (e) – HVAC service plans; (f) – Utility line protection plans; (g) – Surge protection products or services, and (j) – Home security products or services. The EDCs have also offered and included information regarding discount filters, electrical contractor services, and tree services.