



Agenda

- Market Overview
- ☐ Challenges Facing Choice
- **☐** Importance of Retail Choice
- What Could Be Improved?

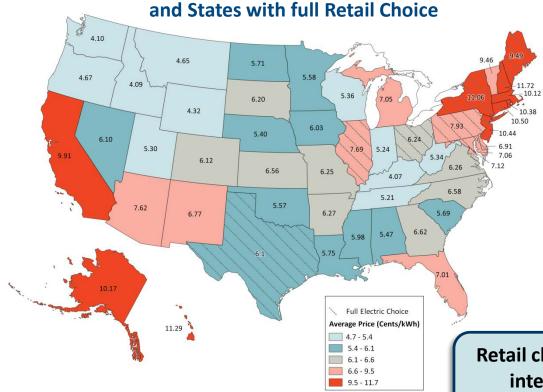
Appendix – terminology and additional references

Market Overview

Inception of Retail Electric Choice

From the mid-1990s through the early 2000s, several states liberalized electric markets to allow for retail electric choice

Average 1995 Retail Prices of Electricity by State (cents/kWh)



- The goal was to reduce consumers' electricity bills and substitute competition for regulation
- Typically states that had highest retail electricity rates in the mid-1990's were the states that implemented retail choice
- States also hoped to foster service innovations, including:
 - Billing options
 - Hedging
 - Access to renewable energy

Retail choice is now facing a resurgence of interest in some states while being criticized and restricted in others.

Sources:

Brattle Analysis.
US Energy Information (EIA), "Detailed State Data,"

https://www.eia.gov/electricity/data/state/.

Market Overview Current Participation

In the 13 states (and D.C.) with retail choice, 10-50% of residential and 65-90% of Commercial and Industrial (C&I) total eligible load are served by Retail Energy Providers (REPs)

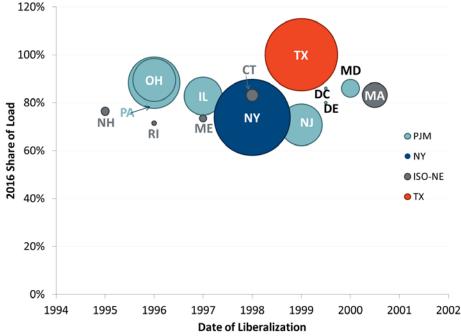
In Texas where there is no Default service, REPs serve 100% of both residential and C&I load

REP Share of Addressable Residential Load 120% 100% TX 80% 2016 Share of Load ISO-NE PJM TX OH 40% PA MA NY 20% ůн **ө** МЕ ŘΙ 0% 1997 1998 2001 1994 1995 1996 1999 2000 2002 Date of Liberalization Notes:

[1]: Partial competition states are not included.

[2]: Diameter of circles reflects number of "addressable" customers in 2016.

REP Share of Addressable C&I Load



Sources:

Brattle Analysis.

US Energy Information (EIA), Form 861,

https://www.eia.gov/electricity/data/eia861/.

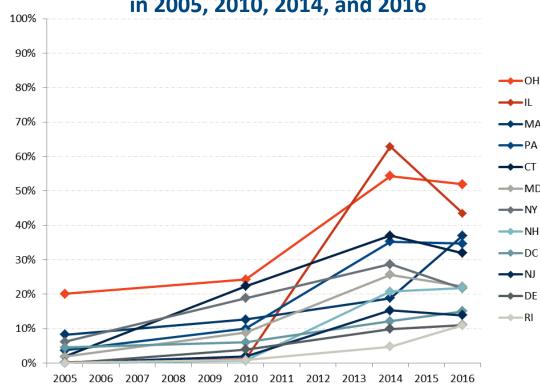
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Market Overview Growth Trends

REPs have increased their market share in all states since 2007

- C&I customers quickly adopted retail choice as it was approved; residential adoption was slower
- Recent increases in OH, IL, and MA are attributable to Community Choice Aggregation programs*
- REP market share slightly declined in several states after the Polar Vortex in 2014

REP Share of Addressable Customers in 2005, 2010, 2014, and 2016



Sources:

Brattle Analysis.

US Energy Information (EIA), Form 861, https://www.eia.gov/electricity/data/eia861/. Notes:

- [1] Based on state rules addressable customers do not include customers on municipal, co-op, or state/federal agency service.
- [2] Texas is excluded from the figure. Texas REPs serve 100% of addressable customers.

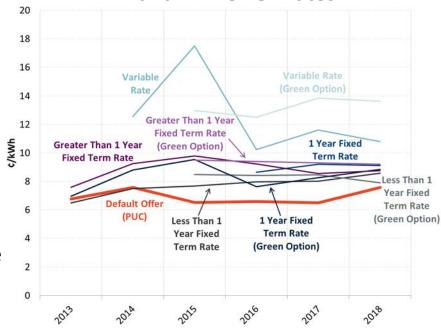
^{*} Source: LEAN Energy, "CCA by State," http://www.leanenergyus.org/cca-by-state/.

Challenges Facing Choice Comparison to Default Service

It is difficult to make an apples-toapples comparison of default service rates and REP rates

- This comparison is a common metric in evaluating whether retail choice is working
 - However, distribution utilities cannot earn a profit on electricity sold through its Default Service
 - This makes the Default Service rate a poor benchmark for whether REP service is fairly priced, as REPs have non-trivial administrative and customer acquisition costs, and necessary profit margins
- While REP offer rates are generally higher than Default Service rates:
 - REPs can offer products beyond Default
 Service offers, like price-smoothing which comes with a risk premium
 - Customers may also be willing to pay premiums for green power

Summary of Maine Default Service and REP Offer Rates



Source:
Maine Office of the Public Advocate, "Electric Supply,"
http://www.maine.gov/meopa/utilities/electric/supply.html.

Any comparison of customer costs/savings from REPs vs Default needs to account for difference in timing and terms of contract complementary services, signing bonuses, exit fees, etc.

Challenges Facing Choice Increased Scrutiny from State Regulators

A few state attorneys general have taken the position that retail choice is harming residential customers and have recommended ending REP service to these customers

Massachusetts

In March 2018, the AG published a report criticizing retail choice and recommending the elimination of REP service to all residential customers.

New York

The retail choice market has been under review since 2012.

REPS were restricted from serving low income customers in December 2016. The AG has an ongoing case looking to restrict REP service to all residential customers.

Sources: See appendix. 6 | brattle.com

Challenges Facing Choice

for deceptive

marketing

Enforcement against Deceptive Practices

Several additional state attorneys general have taken enforcement action against specific REPs for deceptive marketing practices and misleading customers



REP settled for \$2.1 million for allegations made by AG in 2015 for malicious

marketing practices

Maine

Customers filed a

in 2017 for colluding

to raise rates

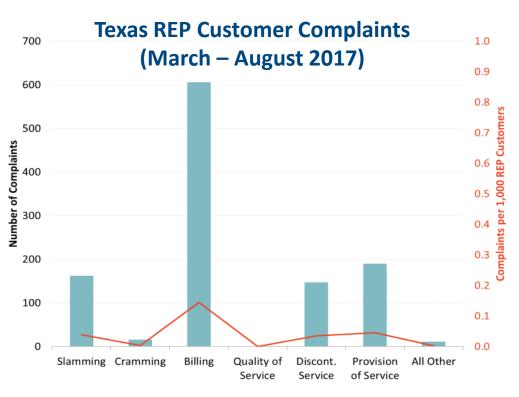
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lawsuit against REPs

Sources: See appendix.

Challenges Facing Choice Deciphering Substance of Complaints

Based on reporting by the few states that track complaints, the majority of customer complaints center on billing issues



- Complexity and ambiguity in in contract terms and pricing may be difficult to understand and lead to confusion about rate expectations
- Market complexity also makes evaluating performance and identifying the root cause of complaints difficult

Sources:

Public Utility Commission of Texas, "Customer Complaint Statistics, https://www.puc.texas.gov/consumer/electricity/CustomerComplaintStats.aspx.

Public Utility Commission of Texas, "June 2017 Report Card on Retail Competition and Summary of Market Share Data,"

https://www.puc.texas.gov/consumer/electricity/CustomerComplaintStats.aspx.

Notes:

Importance of Retail Choice Market Innovations by REPs

Although adoption has been slow, REPs are innovating the market for electricity in the following ways:

Green Power:

- In 2015, 20% of green power sold to electricity customers was a result of retail choice
- REPs offer other eco-conscious products to green customers (energy audits, home protection, carbon offsets, demand response programs)

Non-Traditional Price Structures:

- Price risk management, flat monthly billing, free night usage, and various promotions and discounts are utilized by REPs
- 4Change Energy and Gexa Energy allocate a portion of profits to charitable organizations

Bundled Services:

- Several REPs offer home automation devices in conjunction with home automation devices
- In Texas, Reliant Energy sells home security along with its energy offerings
- NRG partnered with Comcast in pilot bundling energy and broadcast service in Pennsylvania

"Retail environments are encouraging energy players and other consumer-facing customers to get creative." - Katherine Tweed, Senior Writer at Greentech Media

"Leading utilities are looking at how to make money from self-consumption service offerings, not just the sale of more electrons"- Greentech Media*

"I come from the electric industry and there is a common wisdom there that people don't really care about energy, they only care about cheap energy and being there when they need it. I now understand this assumption is wrong."

Scott Kessler, Director of Business
 Development at LO3 Energy*

Importance of Retail Choice Future of Distributed Energy Resources

A part of the vision for the Distributed Energy Resources (DER) revolution is allowing electricity transactions between third-parties

Retail choice may provide a foundation -- REPs can become agents offering DER improvements that enhance pricing flexibility or require pricing innovations

- Potential offerings tied to energy pricing, include:
 - DERs that cause load flattening or peak shifting for better terms of energy prices or reducing capacity requirements
 - Facilitating customer-to-customer or customer-to-generator transactions via REPhosted DER aggregation and use-scheduling
- The necessary customization of these offerings will require sophisticated REPs who are able to credibly describe and appropriately account for upfront costs versus long-term savings to customers

Additional rules and regulations for these REPs and DER packages may be required until the mass market becomes familiar with these innovations

What Could Be Improved? Recap Slide of the Issues

The initial goal of Retail Choice was to reduce consumers' electricity bills and substitute competition for regulation. While there is generally agreement that Retail Choice is working for C&I customers, there is controversy around the success of mass market services

- Much of this controversy is based on political discussion, rather than empirical economic analysis
 - Most market performance analyses are either informal, anecdotal, or rely on imprecise metrics
- The wide variety of frameworks for retail choice in each state make these performance analyses very difficult. Including:
 - Definition of Default Service
 - Procurement process for Default Service
 - Term length of REP Offers and Default Service
 - Quality of available customer information
 - REP versus utility relationship with the customer

There needs to be new studies to thoroughly evaluate the performance of mass market Retail Choice program through both statistical and behavioral analysis.

Conditions for Successful Markets

It is useful to review what economists agree is required for a successful market vs. what may be happening in retail choice for mass market customers:

- Significant number of distinct suppliers
 - Most states have many REPs per service territory, but a few are somewhat concentrated
- Accurate, available low-cost information about the alternatives
 - Power To Choose websites quite variable in quality
 - Often not possible for customers to estimate future electricity prices in the market (e.g. if variable pricing from REP) or for Default Service
 - Non-commodity charges very complex to collapse into a summary metric (e.g., customer charges, exit fees, time differentiation, ...)
 - Products sometimes not standardized or regulated as to allowable terms or changes
- No asymmetry in bargaining power between buyers and sellers
 - Likely a seller advantage in understanding the market
 - But customers expensive to acquire

It is possible that excesses by a small number of REPs are harming the credibility of the entire sector in states where choice is under fire.

Design Elements to Reconsider

Design of Default Service

- High-cost fallback only, or competitive alternative?
- LMP-only to allow risk management by REPs?
- May require metrics for monitoring quality of REP competition none in place today

Customer Relation

Should REPs hold customer relation rather than utilities (billing, receivables' risk,...)?

Customer protection

- Better contract comparison tools/info (beyond Power to Choose websites)?
- Standardized REP contracts (c.f., ARM mortgages with stated indices and caps on movement)?
- Requirements to guarantee benefits or demonstrate innovation?

Community Choice Aggregation (CCA)

- How can stranded costs be assigned?
- Obligation to serve?
- Can communities return later?

Choice in non-RTO regions

Much more difficult to administer because an RTO administers capacity obligation and dynamic allocation of transmission
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Design of Default Service

States must decide the Purpose of Default Service

Option 1: No Standard Offer, All Customers use a REP

("Texas Model")

Considerations:

- How should customers be transitioned?
- What should the bridge price be?
- What type of protections need to be built in for vulnerable customers? (And who qualifies as a vulnerable customer?)
- Should REPs be required to directly pass through transmission and distribution charges?

Option 2: Provide a Long-Term Default

(Rest of U.S. Choice States)

Considerations:

- How do you to design the Default Service so that it doesn't distort outcomes in the market?
- Should it be a competitive protection alternative or just a reliable backstop?
- Should rates be set through:
 - Hedged Multi-Year Procurements?
 - Based fully on flow through of wholesale spot market prices?
 - Hybrid of hedged and market prices?
- Should special customer classes be eligible for different types of default service?
- Who should hold the primary customer relationship (if a customer chooses a REP)?

What Could Be Improved? Customer Protection

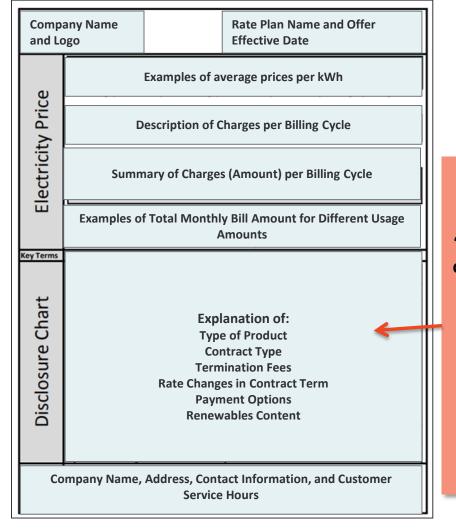
Provide better contract comparison tools and information

"Power to Choose" and "Shopping websites" for retail choice often lack forward default rates, historical default rates, bill calculator comparisons, easy filtering of options, and data on complaints

Standardize REP disclosure forms

 Standardizing fact sheets and terms of service for each REP would help consumers compare offerings

Example of Standardized Offer Info Texas "Power to Choose"



Terms and
Conditions
Explained:
"Can my price
change during
my contract
period? If so,
how will it
change?"
&"What
happens
when my
contract
ends?"

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Financial and Capability Requirements

To help protect customers, encourage REPs to provide good service, and weed out "bad apples", states should establish strong entry requirements for REPs. Current requirements vary by state but often include:

- Filing the application with the State
- Obtaining PUC & Utility Bonds
- Completing EDI testing
- Registering with FERC
- Obtaining financing
- Developing the technical requirements

Stringency of requirements varies widely by state

Comparison of Requirements

| | Illinois (IL) | New York (NY) |
|-------------------------|---|---|
| Requirements | | |
| Financial | Minimum credit rating for commercial paper and long-term debt, credit line of \$1 million, or 10% of revenues with the RTO | "A TDU [Transmission and Distribution Utility] may require an REP to provide and maintain security in the full amount of the TDU's credit risk if the REP is not rated" |
| Technical | Staff with at least four years' experience in wholesale market or earned a certification as Energy Procurement Professional | N/A |
| Managerial | Three or more management staff with four or more years' experience with financial analysis and in wholesale markets | N/A |
| Describing for Destants | | |

Penalties for Bad Acts

REPs can be suspended, mandated to cease and desist service, required to correct violations, and fined up to \$10,000 per occurrence or \$30,000 per day of violation

REPs can be suspended from service territories, barred from enrolling new customers, mandated to record telemarketing presentations, required to reimburse customers, or have certificates to operate revoked

Sources:

Illinois Administrative Code, Title 83 (Public Utilities), Chapter I (Illinois Commerce Commission), subchapter c (Electric Utilities), Part 451.320 (Financial Qualifications Under Subpart D).

State of New York Public Service Commission, Uniform Business Practices Case 98-M-1343, February 2016, accessed November 21, 2017.

Conclusions

Retail Choice has had mixed success – Attractive to C&I customers who have the sophistication to evaluate and utilize it, while sometimes vulnerable to abuse for mass market customers

- A few "bad apples" may be spoiling the barrel via slamming, obscure contracts, unreasonable fly-up pricing, etc.
- There are few empirical studies evaluating retail choice that fully correct for design differences across areas or that capture the value or fair cost of all REP services
- Default Service, though protective for customers, can also be part of the problem; its design has not been fully harmonized with fostering competitive retail markets
- REPs may be needed as key players in facilitating DER adoption and future improvements in retail energy usage

It is likely there are new positions on Default Service design, product disclosure, and consumer protection that can make retail choice better.

Standardizing Some Terminology

Retail Electric Provider ("REP") = ESCO, ARES, Retail Supplier, etc. who procure power from wholesale market for resale to end-use customers choosing a competitive supplier

Default Service ("Default") = Standard Offer, Provider of Last Resort (POLR), Price to Beat, PUC Offer, etc. (any required backstop alternative for non-shopping or transitional customers)

CCA = Community Choice Aggregation, or any form of opt-out municipal retail supply service

DERs = Distributed Energy Resources, i.e. customer-premise equipment to manage energy supply or use

Additional References

Increased Scrutiny from State Regulators (slide 6)

March 2018, https://www.mass.gov/files/documents/2018/03/29/Comp%20Supply%20Report%20Final%20032918.pdf.

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New Jersey Division of Consumer Affairs (January 8, 2015), http://www.njconsumeraffairs.gov/News/Pages/01082015b.aspx.

Market Innovations by REPs (slide 9)

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Greentech Media, "More Utilities Are Offering Services That Allow Customers to Self-Consume Their Solar Power," https://www.greentechmedia.com/articles/read/more-utilities-are-offering-self-consumption-packages#gs.j4DM3yY.

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Additional Reading

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"International Experiences in Retail Electricity Markets: Consumer Issues," Agustin J. Ros, Toby Brown, Neil Lessem, Serena Hesmondhalgh, and James D. Reitzes, prepared for The Australian Competition and Consumer Commission (ACCC), June 2018

"Retail Electricity and Gas Competition Regulatory and Market Update," Agustin J. Ros, Ahmad Faruqui, Rebecca Carroll, Neil Lessem, December 15, 2017

"An Econometric Assessment of Electricity Demand in the United States Using Utility-specific Panel Data and the Impact of Retail Competition on Prices," Agustin J. Ros, Published in *The Energy Journal*, Volume 38, Number 4, August 2017

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Offices

















