

**THE STATE OF NEW HAMPSHIRE**

**BEFORE THE**

**PUBLIC UTILITIES COMMISSION**

**DE 19-197**

**Electric and Natural Gas Utilities**

**Development of a Statewide, Multi-use Online Energy Data Platform**

Testimony of Samuel Nash Vautier Golding

On behalf of  
Local Government Coalition

August 17, 2020

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**I. Introduction and Qualifications**

1 **Q. Mr. Golding, would you please state your name, business address, and occupation?**

2 A. My name is Samuel Nash Vautier Golding. My business address is 12 S. Spring Street,  
3 Concord, NH 03301. I am president of Community Choice Partners, Inc., a consultancy that  
4 specializes in the design and operation of power enterprises operating in competitive markets and  
5 is dedicated to maximizing democratic, informed decision-making in the energy industry. Our  
6 clients reflect the diversity of the energy industry and have included: city and county  
7 governments, municipal and investor owned utilities, Community Power Aggregation (“CPA”)  
8 agencies, energy technology and software companies, labor unions and electrical contractor  
9 associations, and a variety of consumer advocate, environmental and social justice nonprofits.

10 **Q. Please describe your formal education and relevant professional experience.**

11 A. I received an undergraduate degree in International Political Economy from Colorado  
12 College in 2006. I entered the utility industry in 2007 and assumed responsibilities that focused  
13 on evaluating the performance of demand-side management programs, conducting electricity  
14 and natural gas demand-side management and demand response potential studies at the utility  
15 and state territory levels, tracking hundreds of distributed energy resource technologies and  
16 customer-facing smart grid applications emerging across organized electricity markets, and  
17 contributing to ‘Utility of the Future’ strategies. These experiences revealed the limitations of  
18 utility operations and state regulatory governance models in terms of responsibly managing  
19 technological change and maximizing public benefits.

20 In 2011, I became the managing director of the consultancy that originally created  
21 Community Choice Aggregation (“CCA”), and later founded Community Choice Partners in  
22 2013. Based on my professional experience operating and designing CCA agencies, I created

1 the “CCA 2.0” and “CCA 3.0” maturity models for the California CCA industry (which  
2 delineate specific structural improvements to CCA operations and joint action governance  
3 models, respectively) and helped to educate and align industry stakeholders in this capacity in  
4 California.<sup>1</sup>

5         In New Hampshire, I am informally advising a coalition of municipalities that are  
6 forming the “Community Power New Hampshire” Joint Action enterprise (“CPNH”) as a  
7 means to extend sophisticated power agency operations, unbiased advice and regulatory  
8 intervention support to all Community Power Aggregations that launch throughout the state.  
9 My activities supporting the development of this initiative and market over the last year have  
10 included, in addition to direct work products: discussions and correspondence with the  
11 Governor’s Office of Strategic Initiatives and Office of Consumer Advocate, legislators,  
12 regulatory professionals, local elected officials and staff; presentations to local energy  
13 committees, the Conservation Law Foundation’s Municipal Roundtable, and Clean Energy  
14 New Hampshire’s Local Energy Solutions conference; and briefings to Commission staff  
15 regarding the drafting of CPA market rules as well as participation in technical workshops and  
16 stakeholder meetings to discuss related matters.

17 **Q. Have you prepared a summary of your qualifications and experience?**

18 **A.** Yes. Exhibit 1 to my testimony summarizes my qualifications and experience.

19 **Q. Have you previously submitted testimony in regulatory proceedings?**

20 **A.** I have previously submitted testimony to the California Public Utilities Commission on  
21 behalf of the Utility Consumers Action Network (UCAN), a ratepayer advocacy nonprofit, in  
22 regard to San Diego Gas & Electric’s Electric Procurement Revenue Requirement forecast,

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<sup>1</sup> For example, refer to my “Community Choice 2.0 & 3.0 Tutorial Workshop” agenda: <https://app.box.com/file/433445758440>

1 with a focus on the inaccuracies in utility forecasting caused by market settlement cost shifts  
2 stemming from the inappropriate withholding of customer usage data from Community Choice  
3 Aggregators by the utility on an operational basis (Application 20-04-014).

4 **Q. Describe your involvement in DE 19-197 up until this point.**

5 **A.** I have participated actively in technical sessions and in informal conversations with  
6 stakeholders throughout this docket process. In addition, I facilitated Q&A calls for parties  
7 during which two vendors presented on their relevant experiences in other organized electricity  
8 markets. These were recorded and sent to the docket list,<sup>2</sup> along with a separate recording that  
9 one of the vendors had previously made for the docket list.<sup>3</sup>

10 **Q. Please summarize any additional electric regulatory experience.**

11 **A.** In New Hampshire, I participated in the PUC's informal workshop regarding rule  
12 drafting for Community Power Aggregation (a proceeding for which has yet to formally open),  
13 and have facilitated bilateral calls between the CPNH coalition, PUC staff, OCA, utilities, and  
14 other stakeholders regarding the rule drafting process, with a particular focus on utility data  
15 sharing and related matters.

16 I am also party to Case Number 14-01211 in New York (Proceeding on Motion of the  
17 Commission to Enable Community Choice Aggregation Programs), where I submitted  
18 descriptions of Community Choice operating and governance models during the initial rule  
19 drafting process, and in Docket No. 20-05-13 (Study of Community Choice Aggregation) in  
20 Connecticut, which recently opened and where I participated in the first technical workshop. In  
21 the California market, I have prepared regulatory filings for the County of Los Angeles (A.14-

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<sup>2</sup> Recordings available online:

<https://transcripts.gotomeeting.com/#/s/38ee31a47a913e07d9059f4bc737a3bf03b154fca86543a82f293e6cc3fc2960>

<sup>3</sup> Recording available online: <https://app.box.com/s/qjkb4e4skxpzhrwkktxp1z50xvv7mhl>

1 05-024) and for the ratepayer advocate nonprofit UCAN (R.17-06-026), both on the subject of  
2 the expansion of the Community Choice industry and corresponding market. I also protested  
3 SCE Advice Letter No. 3781-E, on the grounds that restricting access to interval usage data  
4 degrades the accuracy of Community Choice forecasting capabilities, and independently  
5 submitted to the Commission the compilation “*Energy Risk Management Policies of*  
6 *Community Choice Aggregators*” and the report “*The Theory and Evolution of Community*  
7 *Choice in California*”.<sup>4</sup> The latter included a detailed description of Community Choice  
8 operating models along with a summary of deficient utility business processes and data access  
9 barriers that jeopardize the innovative potential and financial competitiveness of Community  
10 Choice agencies.

11 **II. Overview of Testimony**

12 **Q. What is the purpose of your testimony?**

13 A. The purpose of my testimony is to provide the Commission with context regarding the  
14 current state of the competitive retail market and the new Community Power Aggregation market  
15 that will soon launch in New Hampshire, along with relevant insights regarding how fully  
16 restructured markets rely on market frameworks for governance and operations in practice, such  
17 that the Commission may make an informed decision in this docket, particularly in regard to how  
18 best to structure governance of the statewide data platform to align with electric utility  
19 restructuring mandates under RSA 374-F.

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<sup>4</sup> Refer to: Samuel Golding, “The Theory and Evolution of Community Choice in California”, 11 June 2018. Available online: [http://www.cpuc.ca.gov/uploadedFiles/CPUC\\_Public\\_Website/Content/Utilities\\_and\\_Industries/Energy\\_-\\_Electricity\\_and\\_Natural\\_Gas/Community%20Choice%20Partners\\_DraftGreenBookComments.pdf](http://www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/Utilities_and_Industries/Energy_-_Electricity_and_Natural_Gas/Community%20Choice%20Partners_DraftGreenBookComments.pdf); and Samuel Golding, “Energy Risk Management Policies of Community Choice Agencies”, 11 July 2018. Available online: [http://www.cpuc.ca.gov/uploadedFiles/CPUC\\_Public\\_Website/Content/Utilities\\_and\\_Industries/Energy\\_-\\_Electricity\\_and\\_Natural\\_Gas/Community%20Choice%20Partners\\_CustomerChoiceSupplementalComments.pdf](http://www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/Utilities_and_Industries/Energy_-_Electricity_and_Natural_Gas/Community%20Choice%20Partners_CustomerChoiceSupplementalComments.pdf).

1 **Q. Please summarize your testimony.**

2 A. My testimony characterizes: the current state of public confidence in the utility  
3 industry; the extent and performance of the competitive retail market in New Hampshire; the  
4 structure, performance metrics and governance framework used in fully restructured  
5 competitive retail markets; my observations regarding New Hampshire’s default service  
6 practices in relation to the goals of the Electric Utility Restructuring Act; recent controversies  
7 regarding utility investments in the retail value chain that structurally foreclose market-driven  
8 innovation in favor of utility-controlled innovation; the statutory authorities, business model  
9 and political drivers of CPAs and how they are naturally aligned with the development of market  
10 frameworks as called for under RSA 53-F; and the anticipated expansion and sophistication of  
11 New Hampshire’s CPA market due to the rapid progress of the Community Power New  
12 Hampshire joint-action initiative.

13 My testimony concludes by recommending that the Commission adopt a market  
14 framework for governing the statewide data platform, for the sake of facilitating a number of  
15 reforms necessary to begin aligning New Hampshire’s market structure, operational practices  
16 and utility infrastructure investment decisions with the Electric Utility Restructuring Act.

17 **III. Detailed Discussion of the Issues and Proposed Conditions**

18 **Q. How does the establishment of a statewide, multi-use online energy data platform**  
19 **relate to The Electric Utility Restructuring Act (RSA 374-F)?**

20 A. SB 284 was authorized by the Legislature explicitly “in order to accomplish the purposes  
21 of electric utility restructuring under RSA 374-F”<sup>5</sup> The purposes of RSA 374-F<sup>6</sup> include:

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<sup>5</sup> Available online: [https://legiscan.com/NH/text/SB284/id/2012441/New\\_Hampshire-2019-SB284-Amended.html](https://legiscan.com/NH/text/SB284/id/2012441/New_Hampshire-2019-SB284-Amended.html)

<sup>6</sup> Available online: <http://www.gencourt.state.nh.us/rsa/html/XXXIV/374-F/374-F-mrg.htm>

1 (1) The “development of competitive markets for wholesale and retail electricity services”,  
2 “a more efficient industry structure and regulatory framework”, and “unbundling of  
3 prices and services” as a means to these ends;

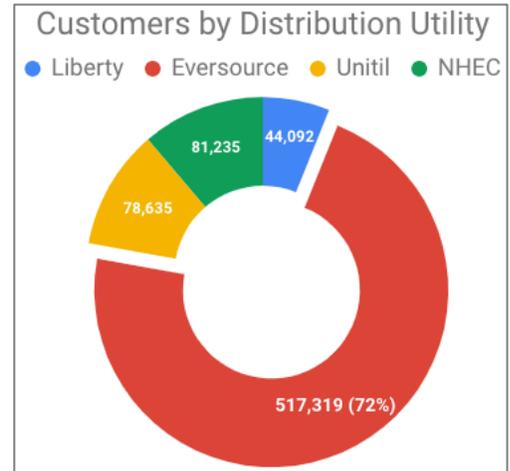
4 (2) Consistency with part II, article 83 of the New Hampshire constitution, specifically that  
5 “Free and fair competition in the trades and industries is an inherent and essential right of  
6 the people and should be protected against all monopolies and conspiracies which tend to  
7 hinder or destroy it.”, a corresponding reliance on competitive markets to provide  
8 “incentives to operate efficiently and cleanly”, “new and improved technologies “ and  
9 “appropriate price signals”, so as to “improve public confidence in the electric utility  
10 industry”; and

11 (3) The incorporation by reference to fifteen “interdependent policy principles” that were  
12 “intended to guide the New Hampshire public utilities commission” — including that the  
13 “commission should adapt its administrative processes to make regulation more efficient  
14 and to enable competitors to adapt to changes in the market in a timely manner. The  
15 market framework for competitive electric service should, to the extent possible, reduce  
16 reliance on administrative process.”

17 I recommend that the Commission consider the statewide data platform as the backbone  
18 of the market framework called for under The Electric Utility Restructuring Act. Expansive,  
19 reliable and transparent data interchange and analysis must be sufficient to facilitate the nimble  
20 decision-making and rule changes necessary to not unduly delay innovation in market  
21 operations, and also sufficient in terms of tracking the range of metrics that the Commission and  
22 others should rely upon to analyze and support the performance of the market going forward.

1 **Q. How would you characterize the current state of public confidence in the electric**  
2 **utility industry?**

3 **A.** While it is difficult to provide a definitive or  
4 comprehensive answer, I can offer relevant observations  
5 regarding Eversource, which is the largest distribution  
6 monopoly in the state, as shown in the graph to the right:



7 I found it notable that 300 people reportedly gathered  
8 last year to celebrate the rejection of Eversource’s Northern  
9 Pass Transmission project by burning a wooden effigy of a  
10 transmission tower. This is a picture from that event,  
11 published in the Union Leader:<sup>7</sup>



12 I would also direct the Commission to the article  
13 “This Means War”, published in December 2019 by Don  
14 Kreis, who leads New Hampshire’s Office of Consumer  
15 Advocate (“OCA”).

16 The article pertains to Eversource’s investment in retail electric meters and refers to  
17 testimony of Paul Alvarez of The Wired Group, a consultancy hired by the OCA. It reads, in  
18 part:

19 “We have a theory about why Eversource made such an imprudent choice, and it is not  
20 pretty. By 2013, when [Eversource] made the decision to install meters that could not  
21 provide interval usage data, it was clear that such data presented several types of

<sup>7</sup> Union Leader, “16-foot effigy of transmission tower burned to celebrate demise of Northern Pass,” 18 August 2020. Available online: [https://www.unionleader.com/news/business/energy/16-foot-effigy-of-transmission-tower-burned-to-celebrate-demise-of-northern-pass/article\\_f3d3e94d-2ffc-598e-8ea6-8f958cfc8e77.html](https://www.unionleader.com/news/business/energy/16-foot-effigy-of-transmission-tower-burned-to-celebrate-demise-of-northern-pass/article_f3d3e94d-2ffc-598e-8ea6-8f958cfc8e77.html)

1 economic harm to [Eversource],” Alvarez testifies. “For example, research indicates that  
2 the time-varying rates AMI meters make possible can reduce both system peak demand  
3 and energy use. “[Eversource] profits increase when the Company invests in the  
4 transmission and distribution infrastructure required to satisfy system peak demand,  
5 biasing the Company against time-varying rates and peak-time rebate programs,” Alvarez  
6 continues. “[Eversource] profits decrease when energy sales volumes fall between rate  
7 cases, biasing the Company against the conservation potential offered by AMI  
8 meters.” Disallowing that \$42 million investment as imprudent would send a message to  
9 utility shareholders everywhere that in New Hampshire we expect investor-owned  
10 utilities to act in the best interests of their customers if they expect a return on their  
11 investment.”<sup>8</sup>

12 Mr. Alvarez also publishes “Customer Value Rankings” annually that compare “the  
13 benefits customers receive from utilities ... to the funds utilities spend, and for which customers  
14 must pay”.<sup>9</sup> According to a 2017 study published in The Electricity Journal, which was authored  
15 by Mr. Alvarez and the National Renewable Energy Laboratory, Eversource’s subsidiary Public  
16 Service Company of New Hampshire scored relatively low in the ranking: 85<sup>th</sup> out of 102  
17 utilities surveyed.<sup>10</sup> (The utility also came in 91<sup>st</sup> out of 105 in terms of customer satisfaction in  
18 a related survey.<sup>11</sup>)

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<sup>8</sup> Don Kreis, “This Means War,” IndepthNH.org. 21 December 2019. Available online: <http://indepthnh.org/2019/12/21/electric-rate-cases-in-nh-this-means-war/>

<sup>9</sup> Available online: <http://www.utilityevaluator.com/customer-value-rankings.html>

<sup>10</sup>Paul Alvarez and Sean Ericson, "Measuring distribution performance? Benchmarking warrants your attention", The Electricity Journal (31, 2018). Available online: <https://nebula.wsimg.com/aeda0aa942afd82b7b05f3bc8bdfd83c?AccessKeyId=490265DE4F8DABB7CA08&disposition=0&alloworigin=1>

<sup>11</sup>The Wired Group, "2018 Customer Satisfaction Survey". Available online: <https://nebula.wsimg.com/e63753ee4a7d49577733972d88958b86?AccessKeyId=490265DE4F8DABB7CA08&disposition=0&alloworigin=1>

1           It is also relevant to note that Eversource’s subsidiaries Western Mass Electric Company  
2 and Connecticut Light and Power ranked even lower in terms of customer value, at 99<sup>th</sup> and 97<sup>nd</sup>,  
3 respectively. Most recently in Connecticut, the utility has come under what appears to be severe  
4 criticism due to widespread outages during Tropical Storm Isaias, to the extent that one of the  
5 longest-serving state representatives called for a breakup of the utility, explaining that  
6 “Eversource has become a multi-state conglomerate... It’s proven that it’s gotten too big to  
7 deliver reliable service”.<sup>12</sup>

8           On the basis of these observations, I believe it is reasonable to conclude that public  
9 confidence in New Hampshire’s largest utility, at least, may not be very high.

10 **Q.     Would you refer to New Hampshire’s current market as “fully restructured”?**

11 **A.**     No. In the USA, the only market that has fully restructured is ERCOT in Texas. There  
12 are a number of additional organized electricity markets, particularly in Europe and Oceania, that  
13 have fully restructured as well.

14 **Q.     How would you characterize New Hampshire’s current market?**

15 **A.**     I would characterize it as partially restructured. Horizontal separation of transmission,  
16 generation and supply from distribution and retail has been accomplished, and distribution  
17 utilities no longer own wholesale generation (though it took until 2019 for Eversource to  
18 complete its generation divestiture despite the fact that the Legislature enacted the Electric  
19 Utility Restructuring Act in 1996, i.e. the first restructuring act in the nation).

20           However, utilities have not been quarantined to operating the distribution grid, and  
21 instead remain integrated within the retail market in ways that I believe structurally disadvantage

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<sup>12</sup> Ridgefields' HamletHub, "State Rep. John Frey Calls for Eversource to be Dismantled", 10 August 2020. Available online:  
<https://news.hamlethub.com/ridgefield/life/67277-state-rep-john-frey-calls-for-eversource-to-be-dismantled>

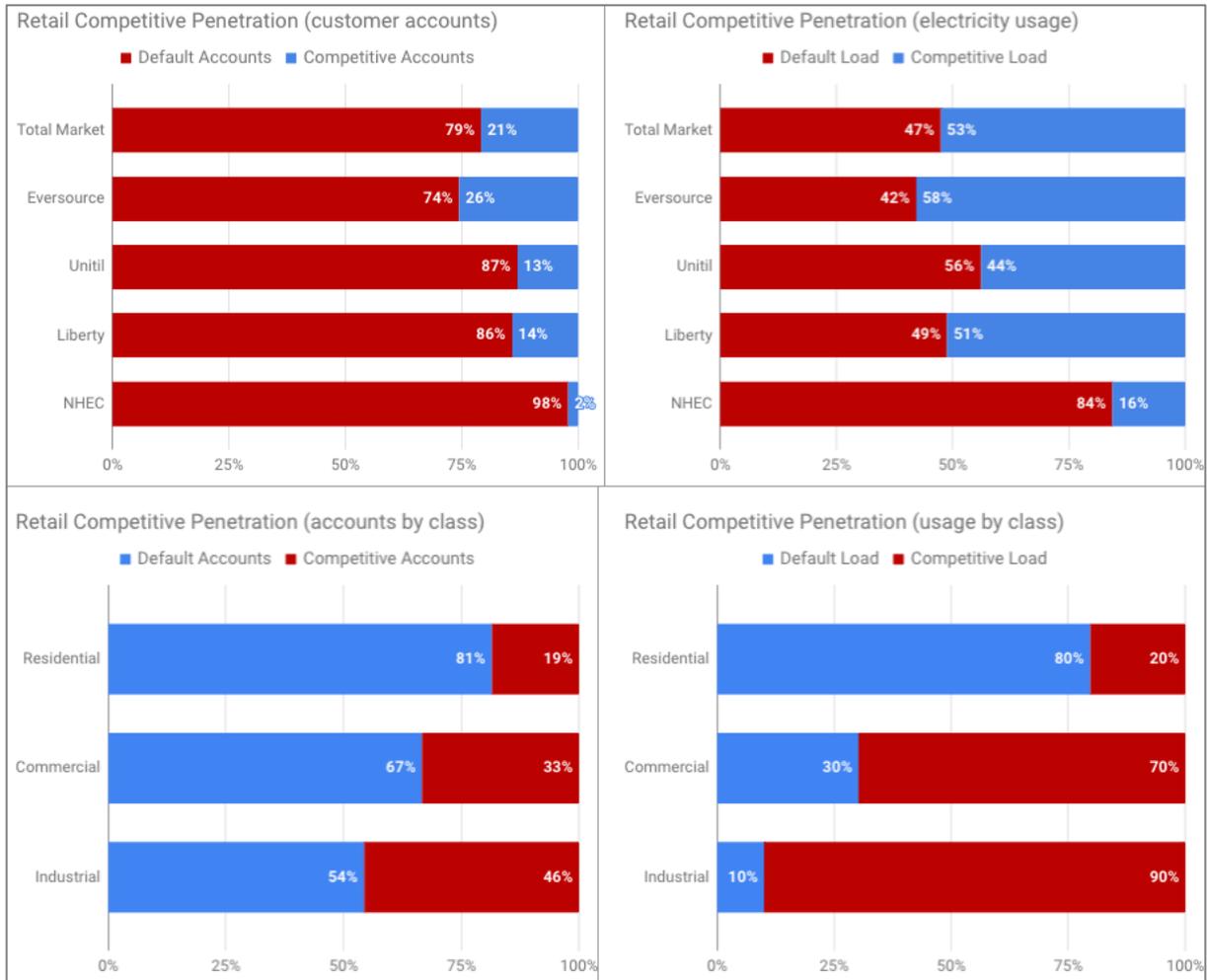
1 retail competition and foreclose retail innovation and choice in services for the majority of  
2 customers.

3           Moreover, it appears that almost all decision-making is still carried out through  
4 administrative procedures and not through a transparent and responsive “market framework” that  
5 would “enable competitors to adapt to changes in the market in a timely manner” as called for  
6 under RSA 374-F.

7           The lack of a holistic, responsive and market-based decision-making framework means  
8 that decisions regarding the functionality of the retail market remain heavily, and almost  
9 certainly unduly, mediated by the monopoly distribution utilities.

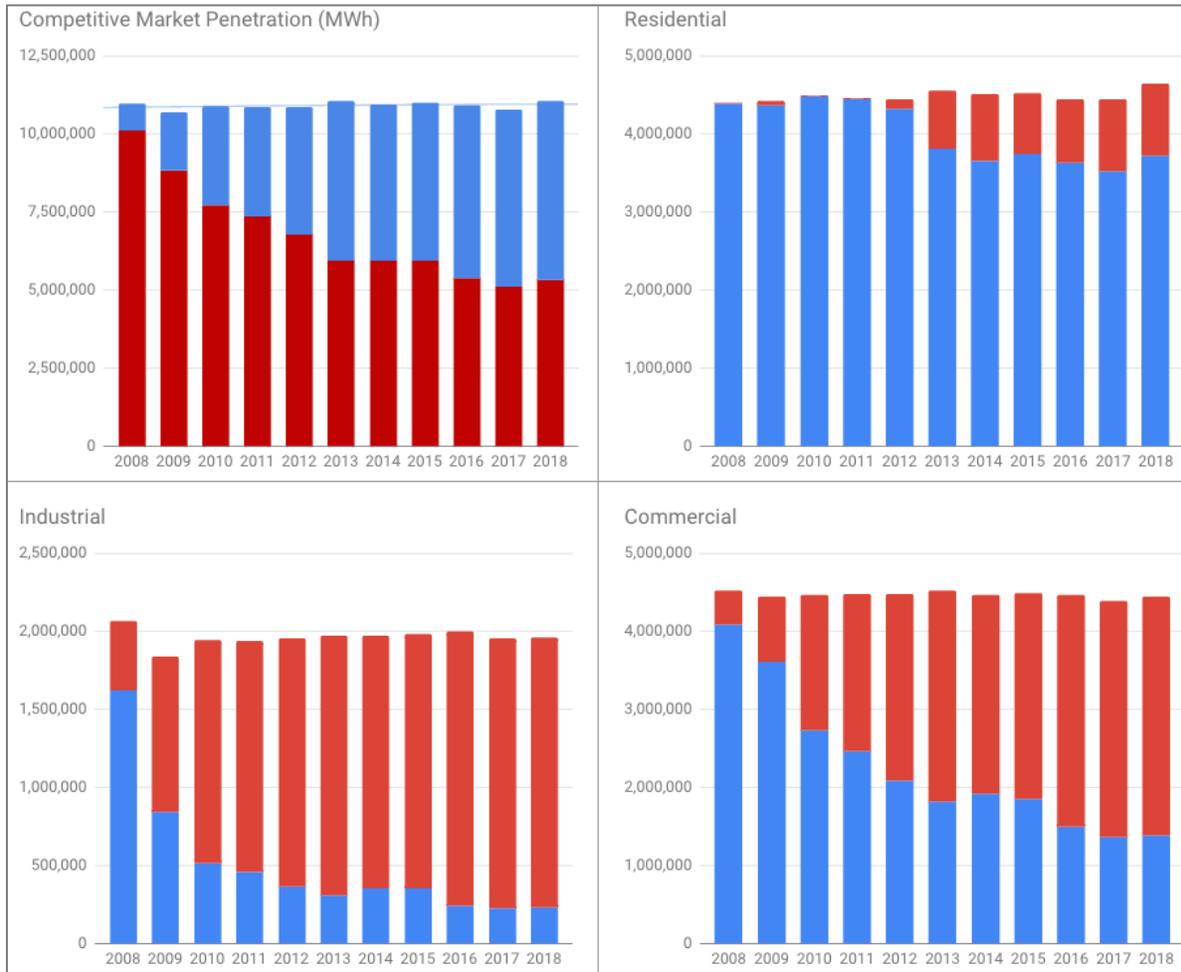
10 **Q.     What is the current state of retail market competition in New Hampshire?**

11 **A.**     Approximately four out of five customers remain on default service provided by the  
12 distribution utilities, while the customers on competitive supply account for about half of total  
13 electricity usage. Based on EIA 861 datasets from 2018, I have prepared the following graphs to  
14 show the penetration of retail market competition by utility:

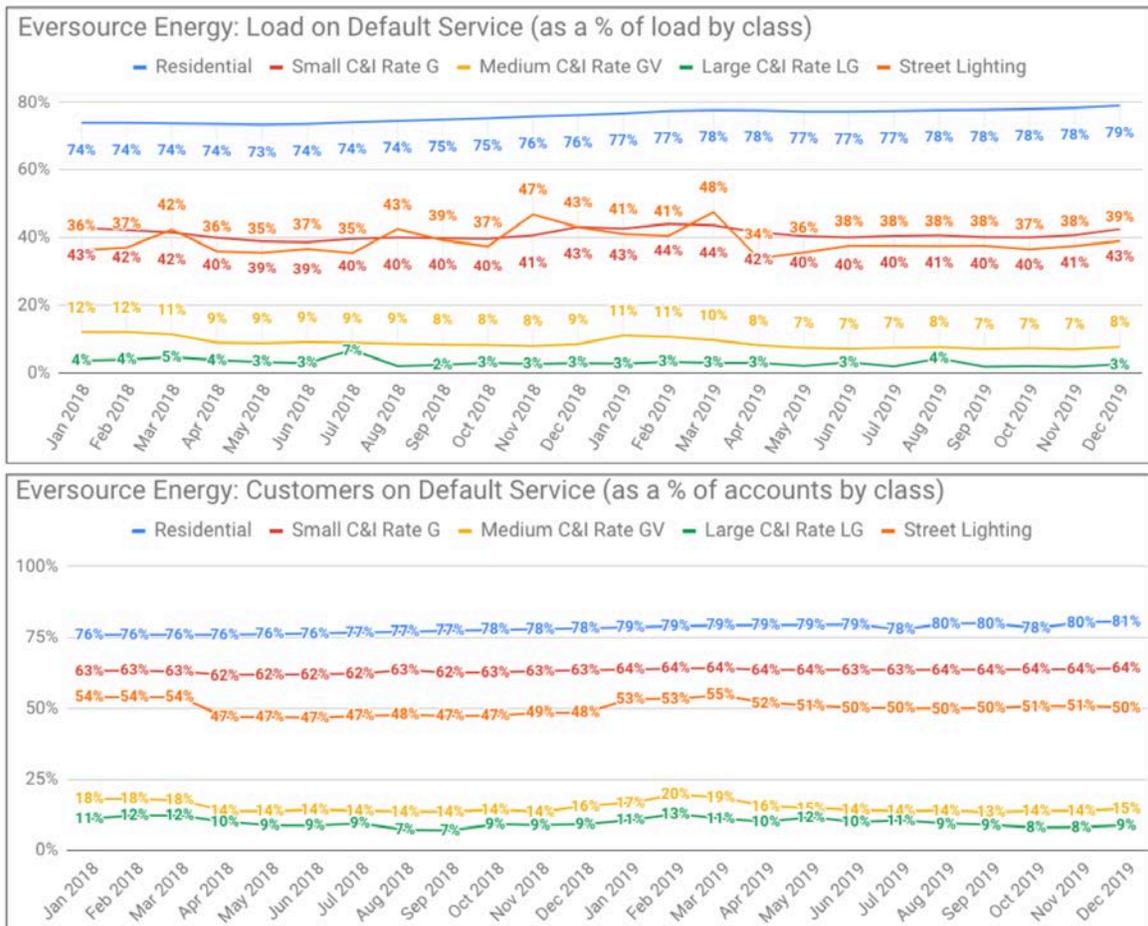


1  
 2 There are also 143 registered aggregators listed on the Commission’s website.<sup>13</sup> These  
 3 entities do not take title to power, but rather act as energy advisors and brokers to customers.  
 4 Despite this, New Hampshire’s competitive retail market appears to have seen little growth since  
 5 approximately 2013. The graphs below, prepared based on EIA 861 datasets for 2008 through  
 6 2018 along with more recent quarterly migration reports for Eversource specifically, show the  
 7 extent of the competitive retail market overall and by customer sector:

<sup>13</sup> Website available online: <https://www.puc.nh.gov/Consumer/Aggregators.html>



1



1  
 2 Competition appears weak within the small commercial class and particularly anemic in  
 3 the residential sector. The table below, based on data from the PUC’s website,<sup>14</sup> shows the 29  
 4 Competitive Electric Power Supplier (“CEPS”) actively offering service to different customer  
 5 classes across the four distribution utility territories open to customer choice:

<sup>14</sup> Website available online: <https://www.puc.state.nh.us/Consumer/Residential%20Suppliers.html>

CEPS Service by Customer Class & Distribution Company Territory							
	Residential	Commercial	Commercial & Industrial	Eversource	Unitil	Liberty	NHEC
Think Energy (ENGIE Retail)	Red	Red	Red	Blue	Blue	Blue	Blue
Power New England	Red	Red	Red	Blue	Blue	Blue	Blue
Ambit Northeast	Red	Red	Red	Blue	Blue	Blue	Blue
E.N.H. Power	Red	Red	Red	Blue	Blue	Blue	Blue
North American Power and Gas	Red	Red	Red	Blue	Blue	Blue	Blue
FairPoint Energy, LLC	Red	Red	Red	Blue	Blue	Blue	Blue
Town Square Energy	Red	Red	Red	Blue	Blue	Blue	Blue
Direct Energy Services	Red	Red	Red	Blue	Blue	Blue	Blue
XOOM Energy	Red	Red	Red	Blue	Blue	Blue	Blue
Constellation NewEnergy	Red	Red	Red	Blue	Blue	Blue	Blue
Direct Energy Business	Red	Red	Red	Blue	Blue	Blue	Blue
Direct Energy Business Marketing (Hess)	Red	Red	Red	Blue	Blue	Blue	Blue
ENGIE Resources	Red	Red	Red	Blue	Blue	Blue	Blue
MP2 Energy NE	Red	Red	Red	Blue	Blue	Blue	Blue
South Jersey Energy Company	Red	Red	Red	Blue	Blue	Blue	Blue
First Point Power	Red	Red	Red	Blue	Blue	Blue	Blue
NextEra Energy Services	Red	Red	Red	Blue	Blue	Blue	Blue
REP Energy	Red	Red	Red	Blue	Blue	Blue	Blue
Calpine Energy Solutions	Red	Red	Red	Blue	Blue	Blue	Blue
EDF Energy Services	Red	Red	Red	Blue	Blue	Blue	Blue
Everyday Energy	Red	Red	Red	Blue	Blue	Blue	Blue
Texas Retail Energy	Red	Red	Red	Blue	Blue	Blue	Blue
Viridian Energy	Red	Red	Red	Blue	Blue	Blue	Blue
Champion Energy Services	Red	Red	Red	Blue	Blue	Blue	Blue
CS Berlin Ops	Red	Red	Red	Blue	Blue	Blue	Blue
Sunwave USA Holdings	Red	Red	Red	Blue	Blue	Blue	Blue
Reliant Energy Northeast	Red	Red	Red	Blue	Blue	Blue	Blue
Mega Energy of New Hampshire	Red	Red	Red	Blue	Blue	Blue	Blue
Ethical Electric	Red	Red	Red	Blue	Blue	Blue	Blue
<b>Active CEPS:</b>	<b>9</b>	<b>27</b>	<b>22</b>	<b>28</b>	<b>23</b>	<b>17</b>	<b>14</b>

1

2

Apparently, out of the 29 CEPS currently offering service in New Hampshire, only 9

3

offer service to residential customers and only 4 of those serve all four distribution utility

4

territories. Only 2 CEPS offer service to all customer classes across all utilities.

5

Based on EIA 861 datasets, the charts below show the market share of the 28 CEPS

6

serving customers in 2018 along with two metrics to measure market power and concentration:

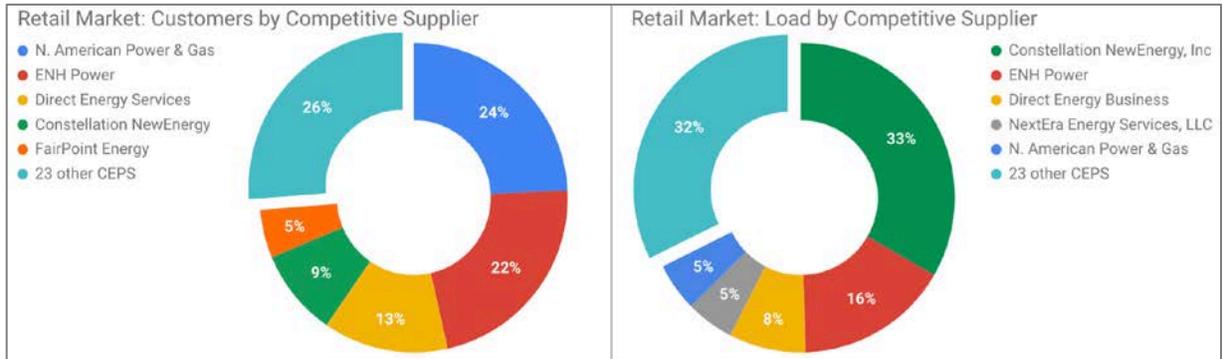
7

the Herfindahl-Hirschman Index (HHI score) and concentration ratio of the 3 largest CEPS based

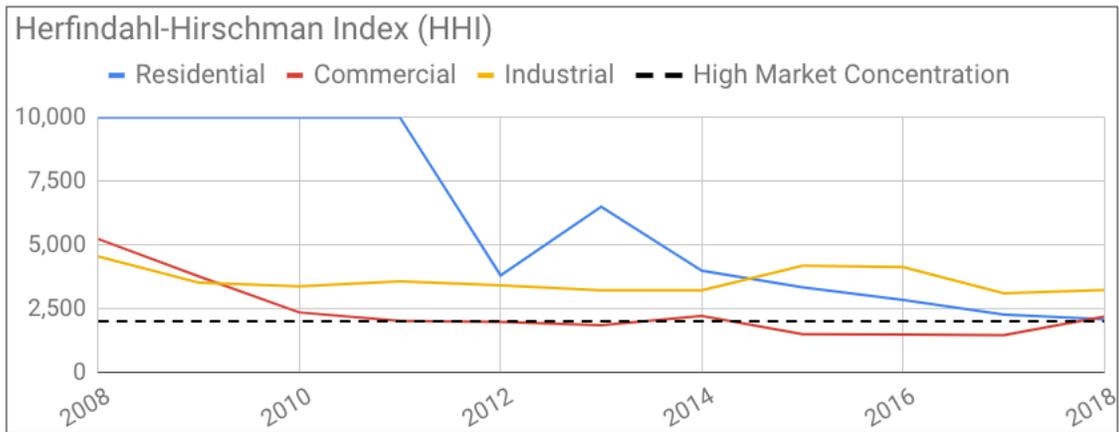
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on their percentage of load served (CR3). Note that 2018 market share and CR3 are calculated

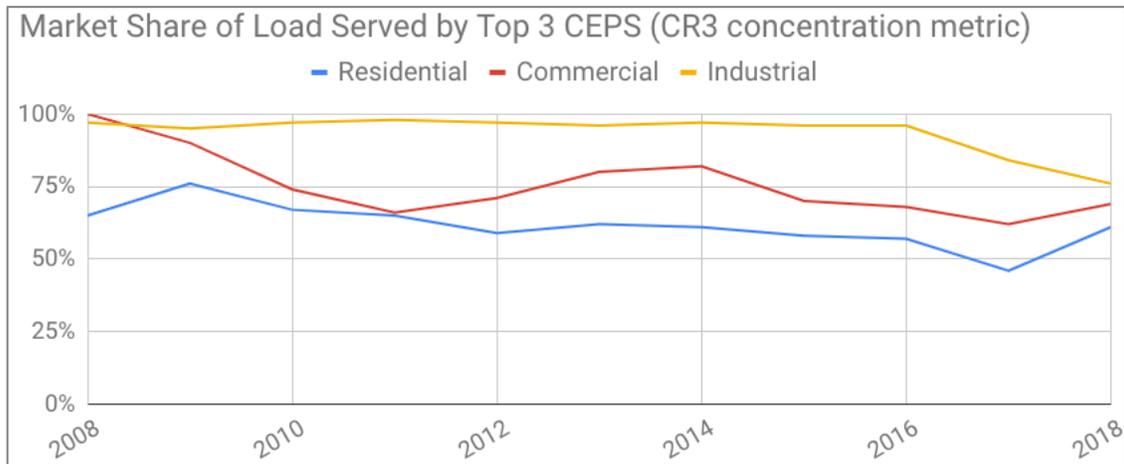
1 relative to the active retail market (i.e. excluding customers on default service from the  
 2 baseline).<sup>15</sup>



3



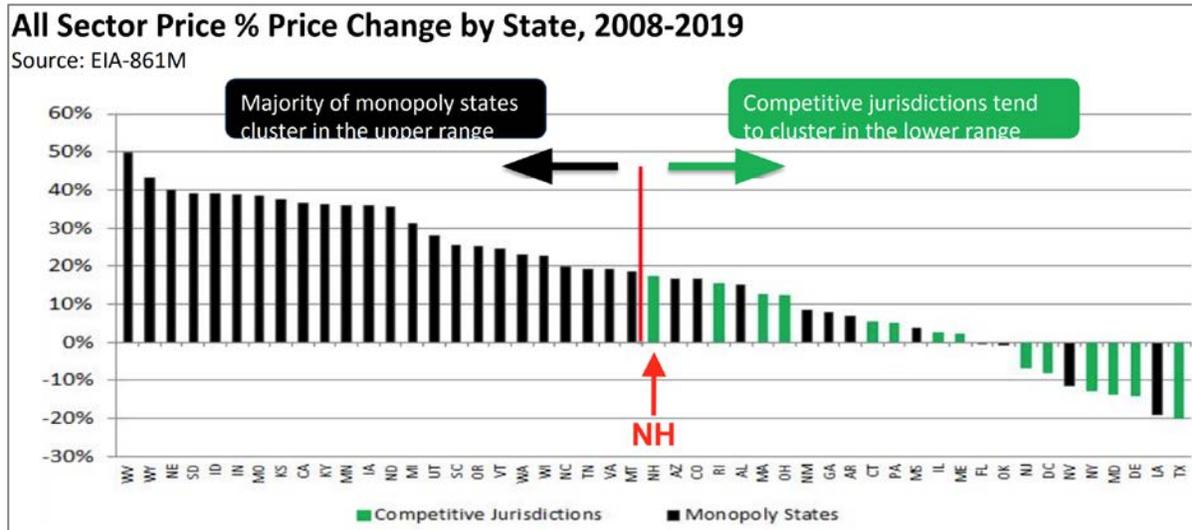
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5

<sup>15</sup> Also note that Constellation NewEnergy and Constellation Energy Services were combined in certain years, as they were formally combined in 2017. See online here: [https://www.puc.nh.gov/Regulatory/Docketbk/2016/16-869/LETTERS-MEMOS-TARIFFS/16-869\\_2017-09-05\\_CES\\_NOTICE\\_MATERIAL\\_CHANGE.PDF](https://www.puc.nh.gov/Regulatory/Docketbk/2016/16-869/LETTERS-MEMOS-TARIFFS/16-869_2017-09-05_CES_NOTICE_MATERIAL_CHANGE.PDF)

1 In terms of the market’s overall performance relative to other states in terms of price  
 2 changes, the chart below is taken from the Retail Energy Supply Association (based upon EIA  
 3 861 data and covers the period 2008 through 2019):

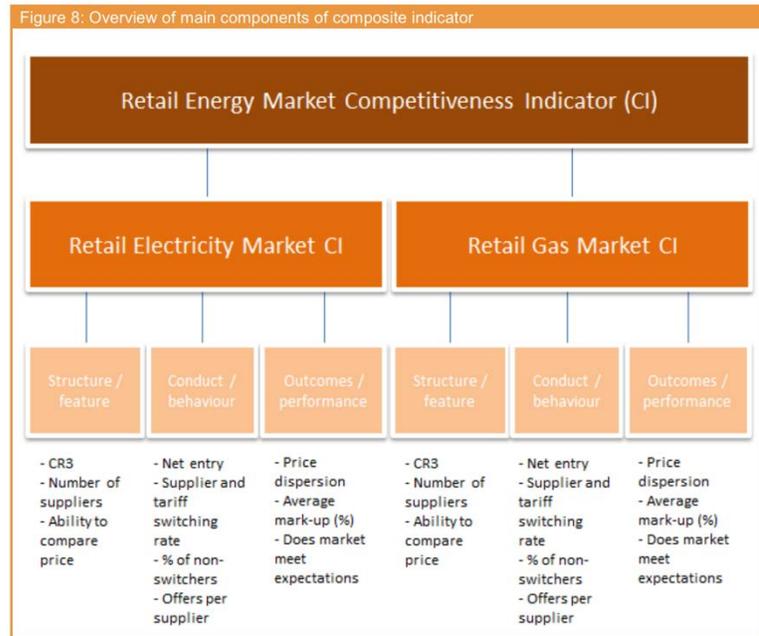


4  
 5 **Q. What other metrics are used to track the maturity of retail energy markets?**

6 **A.** The Texas ERCOT market tracks the number of retailers and number of products offered,  
 7 distinguishing between residential and non-household sectors, retail price trends compared to  
 8 their last regulated rate, unique visitors to the “Power to Choose” website (a one-stop shopping  
 9 portal), and the number and tenor of complains overall and by retailer. These are reported to their  
 10 Legislature in annual “Scope of Competition in Electric Markets in Texas” reports.<sup>16</sup>

11 European state regulators have been collaborating for over a decade to harmonize market  
 12 structures that promote retail competition and have developed more granular metrics to do so that  
 13 take into account the diversity of member state market structures and enabling infrastructure (e.g.  
 14 smart meters). Below is a useful, if somewhat dated, high-level graphic in this regard:

<sup>16</sup> Website available online: <https://www.puc.texas.gov/industry/electric/reports/scope/Default.aspx>



17

1  
 2 The Council of European Regulators (CEER) developed a joint roadmap and framework  
 3 to evolve and harmonize mature retail energy markets across states by 2025. Their annual “self-  
 4 assessment reports” summarize key market properties, metrics and gap analyses across states.  
 5 The “8 key properties critical for a well-functioning market” identified are described as:<sup>18</sup>

- 6 • **Low concentration within a relevant market** where, in general, a high number of  
 7 suppliers and a low market concentration are seen as one of the indicators of a  
 8 competitive market structure.
- 9 • **Low market-entry barriers** in order to facilitate market entry and growth for new  
 10 market actors (i.e. suppliers and third parties) as well as innovation (including demand  
 11 response).

<sup>17</sup> IPA Advisory Limited, “Ranking the Competitiveness of Retail Electricity and Gas Markets: A proposed methodology,” Agency for the Cooperation of Energy Regulators. 4 September 2015. Available online: [https://www.acer.europa.eu/en/Electricity/Market%20monitoring/Documents\\_Public/IPA%20Final%20Report.pdf](https://www.acer.europa.eu/en/Electricity/Market%20monitoring/Documents_Public/IPA%20Final%20Report.pdf)

<sup>18</sup> “CEER Roadmap to 2025 Well-Functioning Retail Energy Markets: 2018 Self-Assessment Status Report”, Council of European Energy Regulators. 30 October 2019. Available online: <https://www.ceer.eu/documents/104400/-/-/89206356-85ff-9977-1ba9-3a8262fe00e3>

- 1       • **A close relationship between wholesale markets and retail prices** to ensure that  
2       consumers receive correct price signals, which is an important incentive for demand  
3       response. In addition, the mark-up between wholesale and retail prices reveals whether  
4       consumers are paying a fair price.
- 5       • **A range of offers, including demand response.** In a well-functioning market retailers’  
6       ability to offer a significant number of commercial options is coupled with consumers’  
7       ability to compare the offers and take informed decisions.
- 8       • **A high level of awareness and trust**, which is an important precondition for consumer  
9       participation.
- 10      • **The availability of empowerment tools** such as a verified price comparison tool,  
11      historical consumption data and a standardized supplier switching process.
- 12      • **Sufficient consumer engagement** where switches, renegotiations and prosumers are  
13      assessed on a yearly basis. In general, a well-functioning market is one in which a  
14      significant number of consumers engage with the market on a regular basis.
- 15      • **Appropriate protection:** In well-functioning retail energy markets, consumers enjoy an  
16      appropriate level of protection and there are specific measures to protect those defined as  
17      vulnerable customers
- 18      The 25 metrics used to track progress within each of the 8 key properties above are  
19      summarized in the table below:<sup>19</sup>

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<sup>19</sup> “CEER Roadmap to 2025 Well-Functioning Retail Energy Markets: 2018 Self-Assessment Status Report”, Council of European Energy Regulators. 30 October 2019. Available online: <https://www.ceer.eu/documents/104400/-/-/89206356-85ff-9977-1ba9-3a8262fe00e3>

Metric #	KEY PROPERTY	HARMONISED DEFINITIONS OF METRICS
<a href="#">1</a>	<b>Low Concentration within a relevant market</b>	Herfindahl-Hirschman Index
<a href="#">2</a>	<b>Low market entry barriers</b>	Time needed and cost of accessing well-functioning wholesale markets and licencing/balancing regimes
<a href="#">3</a>		Percentage of consumers connected to "bundled" DSOs
<a href="#">4</a>		Percentage of consumers with regulated energy prices
<a href="#">5</a>		Number of common standards for consumer data & for DSO-supplier contract or existence of data hub
<a href="#">6</a>		Availability of time-of-use metering and – where applicable – additional fee paid by the consumer to be able to have time-of-use prices vs. traditional metering
<a href="#">7</a>	<b>Close relationship between wholesale markets and retail prices</b>	Correlation between wholesale and retail energy prices
<a href="#">8</a>		Mark-up between wholesale and retail energy prices
<a href="#">9</a>	<b>A range of offers, including demand response</b>	Availability of a variety of pricing and billing options
<a href="#">10</a>		Availability of value added services for implicit demand response and self-generation
<a href="#">11</a>		Availability of online offers
<a href="#">12</a>		Availability of contracts guaranteeing the origin of energy
<a href="#">13</a>		Availability of explicit demand response offers
<a href="#">14</a>	<b>High level of awareness and trust</b>	Percentage of consumers knowing they can switch supplier
<a href="#">15</a>		Percentage of consumers who know that DSOs are responsible for the continuity of supply and, where applicable, of metering
<a href="#">16</a>		Percentage of consumers trusting the energy market
<a href="#">17</a>	<b>Availability of empowerment tools</b>	Percentage of consumers having access to at least one independent and verified PCT
<a href="#">18</a>		Percentage of consumers having access to online historical consumption info
<a href="#">19</a>		Percentage of consumers having access to standardised supplier switching process (and its duration)
<a href="#">20</a>	<b>Sufficient consumer engagement</b>	Supplier switching rate
<a href="#">21</a>		Percentage of inactive consumers
<a href="#">22</a>		Percentage of prosumers
<a href="#">23</a>	<b>Appropriate protection</b>	Time between notification to pay and disconnection for non-payment
<a href="#">24</a>		Percentage of disconnections due to non-payment
<a href="#">25</a>		Percentage of suppliers using min standards for key info in advertising and bills

1

2 **Q. How are fully restructured markets governed in practice?**

3 **A.** Fully restructured markets rely on a market-based institutional decision-making  
 4 framework to replace retail regulation (administrative regimes) wherever appropriate to do so.

5 Governance is structured as a participatory process within which market participants act  
 6 in a collaborative fashion, overseeing the necessary business processes and change management  
 7 protocols to ensure that the functions previously performed by distribution utilities are carried  
 8 out by non-utility entities in an optimal fashion. Data sharing and transparency is, of course, a  
 9 necessary and foundational component of a market-based governance regime (more so than  
 10 under political regimes e.g. retail regulation).

1 The Texas ERCOT market provides an example of a market framework governance regime:

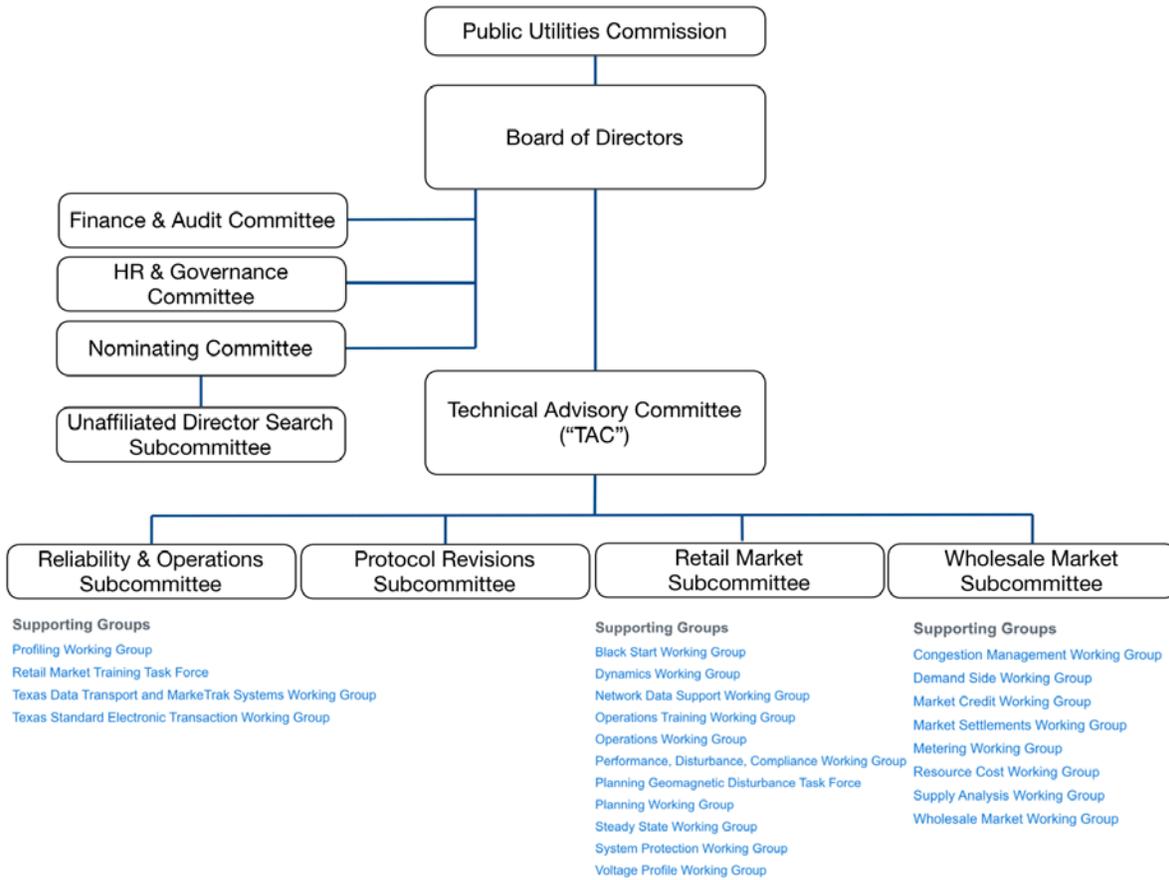
- 2 • The ERCOT Board of Directors is a “16-member "hybrid" board consisting of:  
3 independent members (unaffiliated with the power industry), consumers and  
4 representatives from industry market segments”<sup>20</sup> that meets every month.
- 5 • The Technical Advisory Committee (TAC) is similarly constituted and “makes  
6 recommendations to the board regarding ERCOT policies and procedures and is  
7 responsible for prioritizing projects through the protocol revision request, system change  
8 request and guide revision processes.”<sup>21</sup>
- 9 • There are four main subcommittees that report to the TAC (Protocol Revisions,  
10 Reliability and Operations, Retail Market and Wholesale Market), and a number of  
11 working groups and task forces that form as needed to inform decision-making on more  
12 targeted issues.

13 I have prepared the organization chart below based on a survey of ERCOT’s website,  
14 which provides substantial training materials, meeting notices and records, committee and  
15 subcommittee governance documents and membership lists, and a complete set of market rules  
16 and operating procedures (such as guides for commercial operations, data transport, load  
17 profiling, etc., and Standard Electronic Transaction "swimlanes", which are reference documents  
18 outlining the business process lifecycle for retail market transactions):

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<sup>20</sup> Website available online: <http://www.ercot.com/committee/board>

<sup>21</sup> Website available online: <http://www.ercot.com/committee/tac>



1

2

Below is a table showing the current Technical Advisory Committee members

3

representing each “customer segment”:<sup>22</sup>

<b>Consumer</b>	Residential: Shawnee Claiborn-Pinto – OPUC Residential: Eric Goff Commercial: Phillip Boyd – City of Lewisville Commercial: Chris Brewster – City of Eastland Industrial: Garrett Kent – CMC Steel Texas Industrial: Bill Smith – Air Liquide
<b>Cooperative</b>	John Dumas – Lower Colorado River Authority Clif Lange – South Texas Electric Cooperative Roy True – Brazos Electric Power Cooperative Michael Wise – Golden Spread Electric Cooperative
<b>Independent Generator</b>	Bob Helton – Engie North America Ian Haley – Luminant Generation Colin Meehan – First Solar Bryan Sams – Calpine Corporation
<b>Independent Power Marketer</b>	Kevin Bunch – EDF Trading North America Jeremy Carpenter – Tenaska Power Services

<sup>22</sup> Document available online:  
[http://www.ercot.com/content/wcm/key\\_documents\\_lists/27308/2020\\_Segment\\_Representatives.TAC.June.doc](http://www.ercot.com/content/wcm/key_documents_lists/27308/2020_Segment_Representatives.TAC.June.doc)

	Clayton Greer – Morgan Stanley Resmi Surendran – Shell Energy North America
<b>Independent Retail Electric Provider</b>	Bill Barnes – Reliant Energy Retail Services Eric Blakey – Just Energy Texas Sandy Morris – Direct Energy Shannon McClendon – Demand Control 2
<b>Investor Owned Utility</b>	Walter Bartel – CenterPoint Energy Collin Martin – Oncor Electric Delivery Keith Nix – Texas-New Mexico Power Company Richard Ross – AEP Service Corporation
<b>Municipal</b>	Dan Bailey – Garland Power and Light Jose Gaytan – Denton Municipal Electric Alicia Loving – Austin Energy David Kee – CPS Energy

1           The key takeaway is that governance over the market framework must be structured in a  
 2 manner to leverage and be responsive to the collective insights and requirements of market  
 3 participants, which are naturally focused on assessing and removing barriers to operational  
 4 efficiencies. This type of governance regime, in my opinion, is the foundation upon which  
 5 market rules and enabling infrastructure investment decisions should be made in order to  
 6 successfully promote decentralized coordination and market-based innovation.

7 **Q.     What are the key functional characteristics of a “fully restructured” market?**

8 **A.**     Broadly speaking, the purpose of any market is to allow entities that compete with one  
 9 another to offer customers new products and services that efficiently balance supply and demand  
 10 and create surplus value for society. Successful markets ensure that competitors have low  
 11 barriers to entry, that common information and communication technology supports broad-based  
 12 market innovation, that customers are both free to choose new products and services and  
 13 protected from predatory behavior, and that particularly vulnerable customers are provided relief  
 14 from acute hardship.

15           In the electric power sector, utilities perform a network function (connecting supply and  
 16 demand) by operating the physical platform (the distribution grid) that delivers power to, from

1 and across retail customers. It is both a natural monopoly and a horizontal segment, in that it is  
2 the bridge between the wholesale power grid and retail customers, within which unchecked  
3 monopoly power could easily foreclose retail market competition; consequently, it is a service  
4 regulated by the state.

5 This physical platform must be complemented with a market platform that facilitates  
6 transactions between the wholesale generation market, the distribution utility, and the non-utility  
7 entities that serve retail customers and manage portfolios of distributed energy resources.

8 The generic objective of the market platform is to ensure that non-utility entities have low  
9 barriers to entry and are able to engage in “permissionless” innovation — particularly valuable in  
10 the current context of rapid technological change<sup>23</sup> — competing against one another to induce  
11 retail customers to choose new products and services that accurately reflect system costs and risk  
12 drivers, and which balance supply and demand more cost-effectively in relation to wholesale  
13 market dynamics and network constraints — and to do so in standardized fashion, regardless of  
14 which distribution utility happens to serve a given customer.

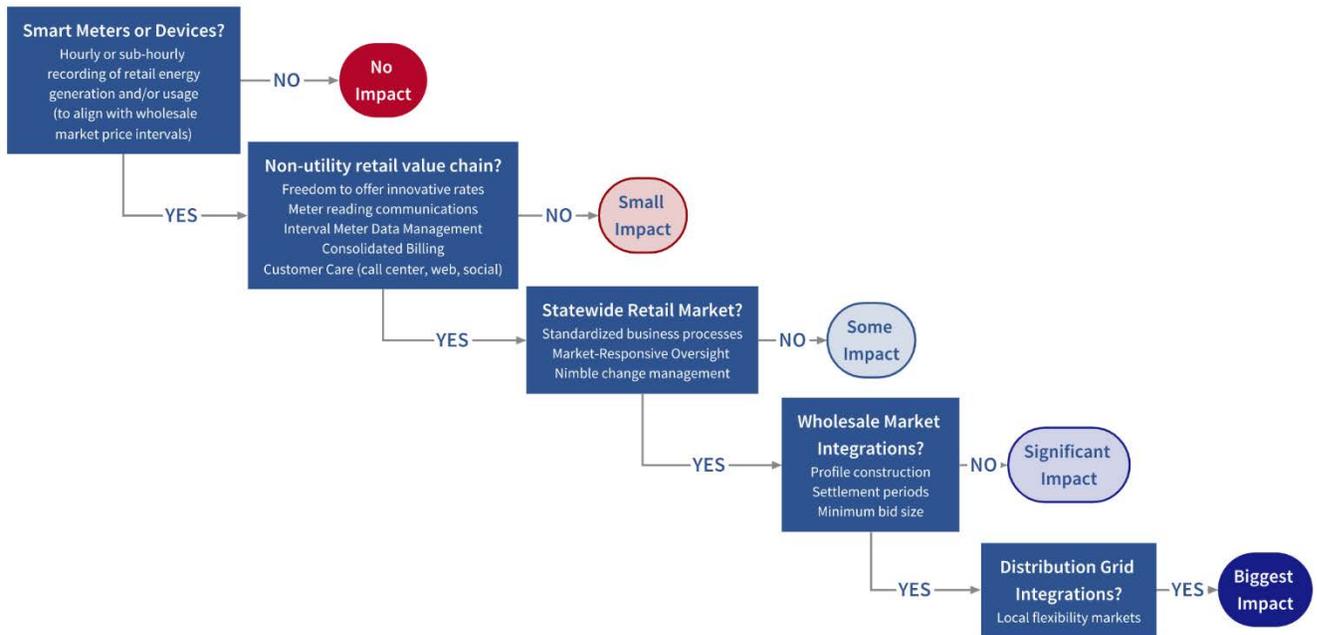
15 The practical process of such retail product innovation<sup>24</sup> requires non-utility entities to  
16 perform a linear and inter-related sequence of steps across the “retail value chain”, which refers  
17 to the infrastructure and business processes that span customer-facing functions (metering, data  
18 management, rate structures, billing and customer engagement) and flow into wholesale market  
19 and network integration functions (e.g. settlement profile construction, non-utility consolidated  
20 billing protocols, interconnection standards, ADMS / DERMS integrations, etc.).

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<sup>23</sup> Refer to Lynne Kiesling and Michael Giberson, "The need for electricity retail market reforms," Regulation. Fall 2017. Available online: <https://www.cato.org/sites/cato.org/files/serials/files/regulation/2017/9/regulation-v40n3-4.pdf>.

<sup>24</sup> For a list of innovative retail products, refer to page 25 of this report: Dr. Philip R. O’Connor, “Restructuring Recharged,” Retail Energy Supply Association. April 2017. Available online: [https://www.resausa.org/sites/default/files/RESA\\_Restructuring\\_Recharged\\_White%20Paper\\_0.pdf](https://www.resausa.org/sites/default/files/RESA_Restructuring_Recharged_White%20Paper_0.pdf).

1 To illustrate these concepts, I have prepared a simple diagram<sup>25</sup> showing the inter-related  
2 nature of the retail value chain, market structure and system integrations along with the impact  
3 on retail product innovation. It is a “hierarchy of barriers” to be read from left to right:



4  
5 Any barrier or non-alignment in the different functions that comprise the retail value  
6 chain will foreclose (preclude or raise the cost of) market innovation, as a problem in one step  
7 will cause unintended consequences or fully block progress in other steps. Thus, in a restructured  
8 market, monopoly power is carefully “quarantined” such that distribution utilities are “wires  
9 only” network companies that have little to no direct role in or control over the retail value chain  
10 and thus do not engage directly with customers, apart from receiving outage calls and  
11 interconnection requests.

12 In unbundling these functions from distribution utility service, regulators may choose to  
13 standardize enabling infrastructure directly through regulated (that is, socialized) investments.

<sup>25</sup> Based upon a similar diagram in the 2017 NordREG report “Flexible demand for electricity and power: Barriers and opportunities”, available online: <http://norden.diva-portal.org/smash/get/diva2:1167837/FULLTEXT01.pdf>.

1 Smart Meters and data platforms are a prime example of such common, market-enabling  
2 infrastructure. For example, regulators in the Texas ERCOT market chose to direct distribution  
3 utilities to deploy AMI smart meters that record retail customer usage in 15-minute intervals,  
4 which aligns with the wholesale market price intervals. The interval data generated is sent by  
5 distribution utilities directly to the market operator for load settlements each trading day and also  
6 posted to the Smart Meter Texas<sup>26</sup> data platform for use by each customers' retailer (without  
7 requiring separate customer authorizations, as the market operator tracks customer switching) for  
8 load forecast submissions to the wholesale market operator and other such applications, as well  
9 as to various non-utility entities (with explicit customer authorization).

10 In Europe, CEER has established frameworks and guiding principles regarding the  
11 management of customer data for the purpose of encouraging competitive retail markets,<sup>27</sup> and  
12 various European countries have established data platforms similar to ERCOT in terms of data  
13 interchange and business processes, such as Denmark's Energinet data hub:

14 "The purpose of the data hub is to ensure uniform communication methods and  
15 standardized processes for market participants in a non-discriminatory, objective and  
16 transparent way so as to create relatively low market entry barriers. All metering data an  
17 all necessary information for settlement purposes, e.g. electricity taxes and network  
18 tariffs, are collected in the data hub. Furthermore, the process of, for example, supplier  
19 switching, is handled in the data hub. The detailed requirements, rights and obligations of  
20 the relevant market participants in terms of the data hub, and thereby also the

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<sup>26</sup>Website available online: <https://www.smartmetertexas.com/aboutus>

<sup>27</sup> Council of European Energy Regulators, "CEER Advice on Customer Data Management for Better Retail Market Functioning", 19 March 2015. Available online: <https://www.ceer.eu/documents/104400/-/-/dbcc2cb1-5035-3a5e-6ba8-59de0d60915c>

1 functionalities of the data hub, are set in regulations issued by Energinet within the  
2 framework of the Danish Electricity Supply Act.”<sup>28</sup>

3 Alternatively, markets may establish standardized technical requirements for such  
4 infrastructure and processes for non-utility entities to adhere to in the provision of services. For  
5 example, the Australian Energy Market Operator has established “Meter Data Management  
6 Procedures”<sup>29</sup> and a “Guide to the Role of the Metering Coordinator”.<sup>30</sup>

7 I have prepared the following table, based off of the Brattle Group’s 2018 report  
8 “International Experiences in Retail Electricity Markets,” to show how various organized  
9 electricity markets rely on market entities or regulated utilities to perform select retail value  
10 chain functions:<sup>31</sup>

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<sup>28</sup> Council of European Energy Regulators, “Roadmap 2018 Self-Assessment Status Report”, at p. 22/74 available online: <https://www.ceer.eu/documents/104400/-/-/89206356-85ff-9977-1ba9-3a8262fe00e3>.

<sup>29</sup> AEMO, "MSATS PROCEDURE: MDM PROCEDURES", 1 December 2017. Available online: [https://www.aemo.com.au/-/media/Files/Electricity/NEM/Retail\\_and\\_Metering/Market\\_Settlement\\_And\\_Transfer\\_Solutions/2017/MSATS-Procedures-MDM-Procedure-V333.pdf](https://www.aemo.com.au/-/media/Files/Electricity/NEM/Retail_and_Metering/Market_Settlement_And_Transfer_Solutions/2017/MSATS-Procedures-MDM-Procedure-V333.pdf).

<sup>30</sup> AEMO, "GUIDE TO THE ROLE OF THE METERING COORDINATOR", 1 December 2017. Available online: [https://www.aemo.com.au/-/media/Files/Electricity/NEM/Retail\\_and\\_Metering/Accreditation/Guide-to-role-of-Metering-Coordinator.pdf](https://www.aemo.com.au/-/media/Files/Electricity/NEM/Retail_and_Metering/Accreditation/Guide-to-role-of-Metering-Coordinator.pdf).

<sup>31</sup>The Brattle Group, "International Experiences in Retail Electricity Markets: Consumer Issues", The Australian Competition and Consumer Commission. June 2018. Available online: [https://brattlefiles.blob.core.windows.net/files/14257\\_appendix\\_11\\_-\\_the\\_brattle\\_group\\_-\\_international\\_experiences\\_in\\_retail\\_el\\_.pdf](https://brattlefiles.blob.core.windows.net/files/14257_appendix_11_-_the_brattle_group_-_international_experiences_in_retail_el_.pdf).

**Status of Enabling Market Services for Residential Customers**

Residential Customer Retail Value Chain:	Billing	Metering	Meter Reading	Credit & Collections	Outage Reporting	
<b>United States of America</b>						
Illinois	Stalled	Utility	Utility	Stalled	Utility	Competitive
New York	Competitive	Utility	Utility	Competitive	Utility	Stalled
Pennsylvania	Stalled	Utility	Utility	Stalled	Utility	Utility
Texas	Competitive	Utility	Utility	Competitive	Unknown	Unknown
<b>Europe</b>						
France	Competitive	Utility	Utility	Competitive	Unknown	Unknown
Germany	Competitive	Competitive	Competitive	Competitive	Unknown	Unknown
Great Britain	Competitive	Competitive	Competitive	Competitive	Utility	Utility
Italy	Competitive	Competitive	Competitive	Competitive	Unknown	Unknown
Netherlands	Competitive	Competitive	Competitive	Competitive	Unknown	Unknown
<b>Oceania</b>						
Australia (VC)	Competitive	Utility	Utility	Competitive	Utility	Utility
Australia (rest of NEM)	Competitive	Competitive	Competitive	Competitive	Utility	Utility
New Zealand	Competitive	Competitive	Competitive	Competitive	Unknown	Unknown

1  
 2 Fully restructured markets naturally rely on competitive entities to provide default service  
 3 to customers, though the extent to which regulatory oversight over how the competitive market  
 4 sets the default rates varies by jurisdiction. The table below is also based off of the  
 5 aforementioned Brattle Group report:

**Market Survey: Oversight of Default Supply Prices**

Market	Transitioning	Regulators
Texas*	United Kingdom	Pennsylvania**
Australia (NEM)	Italy	New York***
Germany	Netherlands	Illinois***
New Zealand		France

\*Competitive Retailers provide default supply  
 \*\*Distribution Utilities provide default supply  
 \*\*\*Default Supply transitions to Market / Community Power  
 (customers may opt-back to Regulators / Distribution Utilities)

6  
 7 **Q. How would you characterize New Hampshire’s current retail market structure?**

1 Each distribution utility has been left responsible for default retail service, and therefore  
 2 left in control of the retail value chain for most customers in their respective territories; each has  
 3 differential capabilities and business processes in regard to the retail value chain (i.e. metering,  
 4 meter reading, meter data management, billing systems, customer information management  
 5 systems, call centers, local program administration, load forecasting and settlement profile  
 6 construction, etc.).

7 The retail market remains operationally fragmented as a consequence, balkanized by  
 8 utility territory instead of unified across the natural boundaries of the state. To visualize this  
 9 aspect of the market structure I have prepared the heat map graphic below, in which each  
 10 rectangle is a municipality sized by number of housing unit and grouped by county (i.e. under the  
 11 red headings). As context, 116 of New Hampshire's 246 municipalities (47% of municipalities,  
 12 and 42% of the population) are served by two or more distribution utilities:



13

1           On an individual utility basis, my impression is that there are a number of long-standing  
2 and inter-related inefficiencies that have reinforced one another in maintaining this  
3 administrative and structural regime. My general observations are as follows:

- 4           • Universal service has long-accustomed distribution utilities in general to view customers  
5           on an aggregate basis, and to allocate their resources accordingly — investing in  
6           metering, billing, customer care systems and associated staffing resources designed to  
7           manage the vast majority of customers as large, homogenous groups that do not require  
8           differential and customized retail services.
- 9           • This aggregate approach to customer portfolio management appears reinforced by the  
10          manner in which distribution utilities have been relied upon to provide default electricity  
11          supply to customers: under a nonselective wholesale portfolio strategy that simply  
12          procures fixed-price, load following supply for customer classes under short-term (e.g. 6-  
13          month) contracts. This strategy transfers all market price and swing risk throughout the  
14          contract term onto suppliers, which must price and embed the risk as a premium into  
15          supply costs (i.e. without regard to how retail customers could be engaged and  
16          incentivized to shift usage to lower-price market intervals and outside of capacity-  
17          constrained periods e.g. by using devices such as smart thermostats, water heater  
18          switches, storage systems, etc. coupled with predictive intelligence to shape demand).
- 19          • The distribution utilities' retail value chain has continued to be largely aligned with this  
20          nonselective procurement strategy: the utility is charged for electricity regardless of the  
21          market price or customer usage is at a given moment, passes through these charges to  
22          customers in a similar fashion, and has little incentive to modernize its retail value chain

1 (meters, communications, data management, billing and customer information systems,  
2 etc.) or associated wholesale processes (profile construction, load forecasting, market  
3 settlements, etc.). The usage of most default service customers is not individually  
4 recorded on an hourly or sub-hourly basis, but once a month — the utility load  
5 forecasting and settlement relies on statistically-derived load “profiles” that approximate  
6 what customers within a class are using, in aggregate and on average within a given  
7 hourly, and calibrated with upstream measurements of actual electricity flow (i.e. at  
8 substations).

- 9 • In this fashion, the current regime reinforces an unnatural separation of horizontal  
10 segments (wholesale and retail) that are actually highly interdependent, should be treated  
11 as such, and which require common enabling infrastructure and a market framework to  
12 reconnect in order to for market participants to allocate capital and manage costs more  
13 efficiently. This continued separation has foreclosed market driven innovation in  
14 promoting and integrating customer technologies,
- 15 • In this fashion, regulated utility default service appears to function in a way that  
16 *maintains* the unnatural separation of interdependent horizontal segments, and thus  
17 *elevates* risk, cost and capacity investments for customers. In essence, all customers pay  
18 more because certain customers are fundamentally driving up costs — above the level  
19 they otherwise would, if they were more actively engaged and provided with innovative  
20 retail services and technologies to assist them in modifying their usage to minimize  
21 wholesale cost/risk and infrastructure investments for peak generation, transmission and  
22 distribution network capacity (for themselves, and thus the entire customer portfolio).

1           The procurement strategy and retail value chain dynamics described above ignore the  
2 customer value that could be created on an individual retail customer and portfolio basis through  
3 a unified and competitive market framework. In my opinion, these structures, along with the  
4 administrative decision-making process and general perspective held by most stakeholders  
5 involved in those processes, collectively poses high barriers to the development of a competitive  
6 retail market in New Hampshire to serve the remaining four-fifths of customers.

7 **Q.     Have distribution utilities' recent investment decisions in the retail value chain**  
8 **hindered or supported the development of a competitive retail market?**

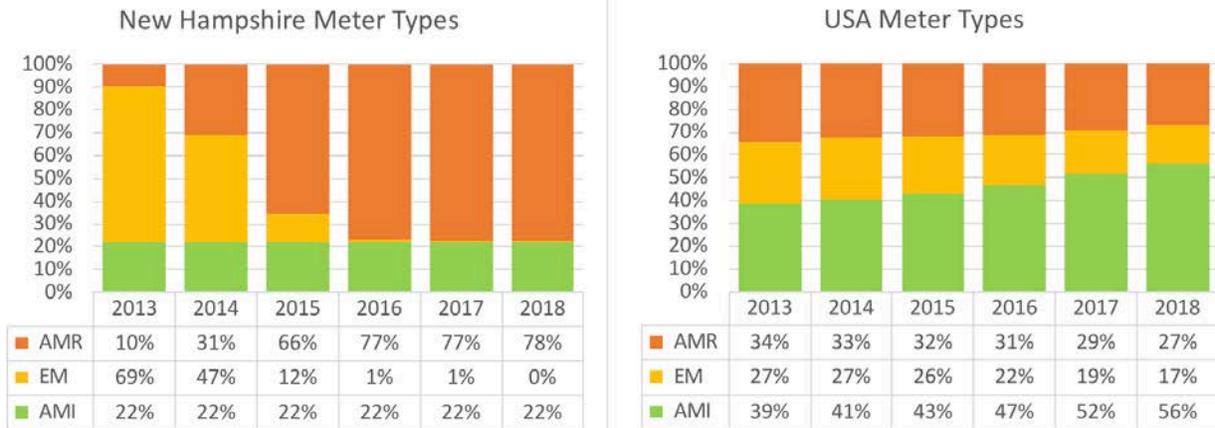
9 **A.**     I believe that distribution utilities' recent investment decisions in the retail value chain  
10 have hindered the development of a competitive retail market.

11           To take one example, Eversource is currently defending its decision to upgrade its retail  
12 customer meters and associated data management, billing and customer information systems.  
13 They have done so in a manner that precludes the collection and dissemination of hourly or sub-  
14 hourly retail meter usage data, which the competitive market needs in order to cost-effectively  
15 create innovative retail products that reflect cost-risk drivers on the wholesale market and other  
16 horizontal segments of the electricity industry (e.g. generation, transmission and distribution  
17 network capacity constraints). Based off of their investment decision, the competitive market for  
18 most customers is constrained to settling load based on generic, class-average profiles, which  
19 forecloses innovation that would otherwise help individual customers (and thus in aggregate, the  
20 state as a whole) help to manage their energy costs and risks.

21           What I find most notable in this process is that, as Commission staff noted, Eversource  
22 began these upgrades based on its own internal evaluation and only informed the Commission

1 after the infrastructure deployment had commenced.<sup>32</sup> In response to criticism that they should  
 2 have installed a “smart meter” system capable of supporting interval data collection and thus  
 3 market innovation, Eversource defended their decision by claiming that other investor owned  
 4 utilities had made similar decisions that year (in 2012), and cited a Green Tech Media news  
 5 article that “concluded that AMI or smart meter deployment was on a downward trend, due to a  
 6 lack of stimulus funding to help cover the costs of AMI deployment.”<sup>33</sup>

7 As context, I have prepared the following tables based on EIA 861 data showing the  
 8 installation of smart meters (“AMI”) compared to the meters Eversource installed (“AMR”) to  
 9 replace electro-mechanical meters (“EM”) over the period 2013 through 2018 — in New  
 10 Hampshire and for the country overall:



11 Eversource’s decision stands in contrast to the direction of its peers across the industry —  
 12 notwithstanding their cherry-picking of examples and a speculative news article to the contrary.  
 13

<sup>32</sup> DOCKET NO. DE 19-057, "Direct Testimony of Richard Chagnon", 20 December 2019. At p. 31-32. Available online: [https://www.puc.nh.gov/Regulatory/Docketbk/2019/19-057/TESTIMONY/19-057\\_2019-12-23\\_STAFF\\_TESTIMONY\\_CHAGNON.PDF](https://www.puc.nh.gov/Regulatory/Docketbk/2019/19-057/TESTIMONY/19-057_2019-12-23_STAFF_TESTIMONY_CHAGNON.PDF)

<sup>33</sup> Docket No. DE 19-057, "Rebuttal Testimony of Penelope McLean Connor", 3 March 2020. At pp. 17-18. Available online: [https://www.puc.nh.gov/Regulatory/Docketbk/2019/19-057/TESTIMONY/19-057\\_2020-03-04\\_EVERSOURCE\\_REBUTTAL\\_TESTIMONY\\_CONNER.PDF](https://www.puc.nh.gov/Regulatory/Docketbk/2019/19-057/TESTIMONY/19-057_2020-03-04_EVERSOURCE_REBUTTAL_TESTIMONY_CONNER.PDF)

1           Regarding the impact this decision had on the development of retail product innovation,  
2 Eversource defended its decision by stating: “Further, it was reasonable to move forward with  
3 the AMR initiative because it takes time for new rates to incent behavior and it was unclear at the  
4 time whether the ultimate solution could be more dynamic than time-varying rates (“TVR”).  
5 Today, Eversource can accomplish peak load reduction without TVR, and with the maturation of  
6 demand management programs, such rates are not necessary to support customer participation in  
7 these programs.”<sup>34</sup>

8           What this situation demonstrates to me is that, under New Hampshire’s current  
9 governance framework, a monopoly distribution utility was allowed to unilaterally decide to  
10 invest in infrastructure that structurally foreclosed competitive retail market customer  
11 engagement and product innovation in favor of retail products and programs controlled by the  
12 utility directly — which necessarily must be governed through administrative proceedings.

13           I consider this to be anti-competitive behavior, carried out in the most structural way  
14 imaginable and without knowledge or permission of the Commission or market participants who  
15 should rightly have been fully engaged throughout the evaluation process.

16 **Q.     Do you expect that Community Power Aggregators will help to fully implement**  
17 **RSA 374-F?**

18 **A.     Yes, I expect Community Power Aggregators (“CPAs”) will play a critical role in fully**  
19 **implementing RSA 374-F, both directly in carrying out their functions in the market and by**  
20 **advocating for rule changes and utility investment decisions that support the creation of a**  
21 **unified, innovative and competitive retail market.**

---

<sup>34</sup> Ibid., at p. 4.

1 Under RSA 53-E, CPAs can become the default provider of competitive electricity service  
2 to retail electric customers. The retail value chain functions naturally fall within that  
3 responsibility, and my understanding is that CPAs have unique statutory authority to assume  
4 direct control or meaningful oversight of these functions:

- 5 • Electricity meter specifications and ownership, the alternate use of comparable  
6 intelligent monitoring devices, and the associated Information and Communications  
7 Infrastructure (ICT);
- 8 • Technical and business process requirements to use data in market operations  
9 (profiling, forecasting and settlements) and capacity cost allocations;
- 10 • Customer Information Systems (CIS) and customer care functions (apart from reporting  
11 outages and responding to interconnection requests, which would remain within the  
12 distribution utilities' natural domain);
- 13 • CPA consolidated billing;
- 14 • Local programs.

15 CPAs are competitive energy agencies that are overseen by communities. To perform  
16 their core operational functions, CPAs integrate different service providers and advisors that  
17 have evolved insights, platforms and institutional capacity in competitive markets, and employ a  
18 limited number of expert staff and independent advisors to ensure sufficient oversight and  
19 strategic direction. CPAs are thus a mechanism to rapidly expand the scope of competitive third-  
20 party expertise operating within a given market, to transfer such knowledge to the communities  
21 involved, and to bring these perspectives to bear on decision-making at the local and state levels.

1           The business model of a CPA is that of an aggregator,<sup>35</sup> which “acts as an intermediary  
2 between electricity end-users and [distributed energy resource] owners and the power system  
3 participants who wish to serve these end-users or exploit the services provided by these  
4 [distributed energy resources].”<sup>36</sup>

5           The business model of an aggregator is predicated on maximizing customer value, which  
6 requires considering and optimizing how individual customers use energy and the value they  
7 place on different products to meet their underlying needs (the customer’s total energy value  
8 chain), creating new retail products, executing on customer engagement and education,  
9 facilitating project financing and development, and thereafter intelligently managing the  
10 customer relationship and integration of distributed energy resources into retail, wholesale and  
11 network markets to maximize the creation of value.

12           This task is beyond the capacity of any one enterprise, particularly given factors such as:  
13 the size and diversity of a CPAs customer portfolio, the pace at which technologies and  
14 consumer preferences are evolving, increasing opportunities for distributed energy resources,  
15 onsite storage and fuel-switching (e.g. beneficial electrification) that entail complex valuations  
16 and technology configurations, and so on.

17           As a consequence, the natural role of a CPAs is to position itself as a form of ‘network  
18 manager’ and ‘aggregator of aggregators’: connecting its customers to innovative companies that  
19 specialize in engaging customers and offering new technologies and enabling services, and then  
20 facilitating the necessary ‘behind the scenes’ processes and transactions required to integrate

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<sup>35</sup> Note that this term is a generic industry term, not to be conflated with the specific definition under PUC 2000.

<sup>36</sup> Scott Burger et al., "A Review of the Value of Aggregators in Electricity Systems", MIT CEEPR. January 2016. Available online: <http://ceepr.mit.edu/files/papers/2016-001.pdf>

1 these assets into portfolio risk management, power market operations, and system planning (and  
2 monetize them to the maximum degree possible).

3 CPAs are also naturally incentivized to lower wholesale cost and risk by unlocking retail  
4 demand flexibility and the intelligent management of distributed energy in new ways (i.e. in  
5 ways that incumbents are either unwilling or unable to do), because CPAs launch with no pre-  
6 existing assets and must therefore construct a wholesale book and portfolio strategy aligned with  
7 their retail usage profile.

8 Thus, active management of the CPA's retail cost / risk profile unlocks a source of  
9 competitive advantage, creating new value for individual customers and the aggregation overall.  
10 The practical process of doing so creates mutually beneficial relationships between the CPA and  
11 the third-party innovators relied upon to create new customer products:

- 12 • CPAs are able to capture a portion of the customer value created, strengthen customer  
13 relationships and brand recognition, lower costs and risks for the customer base overall  
14 (customer portfolio value) and gain competitive insights into evolving technology  
15 applications and market dynamics in ways that far exceed their internal capacity.
- 16 • Innovative energy companies gain new market opportunities, and a partner that has both  
17 the political legitimacy, technical knowledge and financial incentives to help the market  
18 function more efficiently over time. For example:
  - 19 • CPAs are able to make decisions locally and rapidly to refine products and operations in  
20 response to market feedback and evolving dynamics;
  - 21 • CPAs also can work over the longer-term with utilities, regulators and other stakeholders  
22 to modernize infrastructure, market processes and regulations.

1           In both cases, CPAs bring a valuable operational perspective that understands the types of  
2 competitive services that customers and communities want, and the evolving state of the  
3 commercial landscape.

4           CPAs can also create new value by leveraging their customer, community and inter-  
5 governmental knowledge and relationships to accelerate market opportunities and drive down  
6 transaction costs in unique ways. For example, by electrifying entire public transit fleets, or  
7 adopting reach codes and educating contractor networks to speed adoption of new technologies,  
8 and in numerous other ways that reflect local preferences.

9           The ‘network manager’ role of CPAs also leads to value creation on the grid  
10 infrastructure side of the business, as CPAs are naturally incentivized to aggregate grid-edge  
11 assets and encourage the development of new transactions and products with distribution utilities  
12 to manage local grid constraints and reduce stress on grid assets (to defer replacements and  
13 expansions).

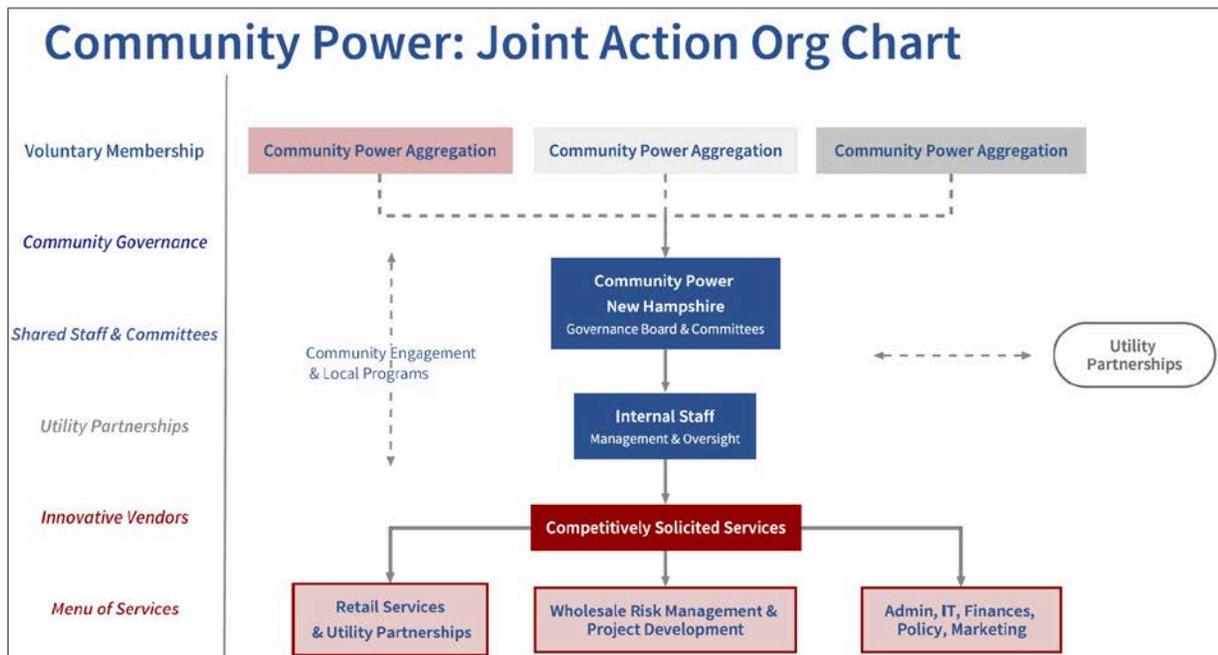
14           Lastly, aggregators naturally seek economies of scale and scope in order to lower the  
15 transactional costs associated with all of the above aforementioned activities. This encourages  
16 the formation of Joint Powers Authorities (also allowed under RSA 53-E), wherein multiple  
17 CPAs join together to share various services and programs deployed over their combined  
18 territories.

19           In these ways, the statutory authorities, business model and political drivers of CPAs are  
20 naturally aligned with the development of market frameworks as called for under RSA 53-F.

21 **Q.    On what timeline and manner do you expect the Community Power Aggregation**  
22 **market to develop in New Hampshire?**

1 A. Assuming that the Commission authorizes the full authorities of CPAs enabled by RSA  
2 53-E in market rules, I expect Community Power service to expand relatively rapidly in New  
3 Hampshire, both in terms of customers served and in extent of geographic territories, and in a  
4 manner that encourages operational and political coordination across individual CPAs for the  
5 explicit purpose of modernizing New Hampshire’s competitive retail market.

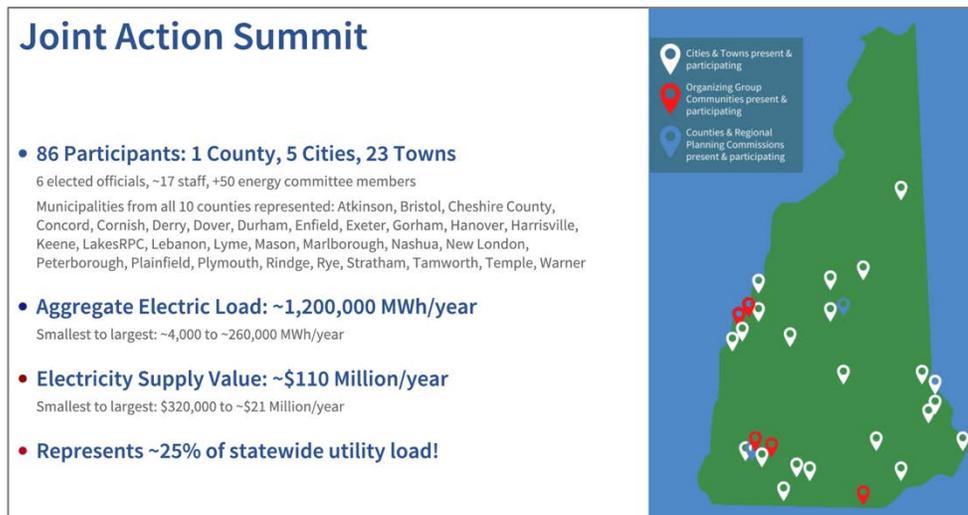
6 Within that context, I have been informally advising a group of municipalities since  
7 December 2019 regarding the “Community Power New Hampshire”<sup>37</sup> initiative (CPNH) to  
8 establish an independent Joint Action Authority to provide shared services and political  
9 coordination on a statewide basis. Below is a high-level operating model diagram:



10

<sup>37</sup> Website available online: <http://www.communitypowernh.org/>

1 I have attached an article published in New Hampshire Municipal Association’s Town &  
 2 City magazine,<sup>38</sup> along with the agenda for CPNH’s June 5<sup>th</sup> 2020 Community Power Summit  
 3 that convened over 80 representatives from 30 municipalities interested in the initiative. These  
 4 representatives were primarily local energy committee members, local elected officials and staff,  
 5 and we estimated that the combined default supply load from the municipalities in attendance  
 6 accounted for approximately 25% of the load currently served by distribution utilities. The  
 7 following graphic and CPA market forecast table were based on an informal survey of attendees:



8

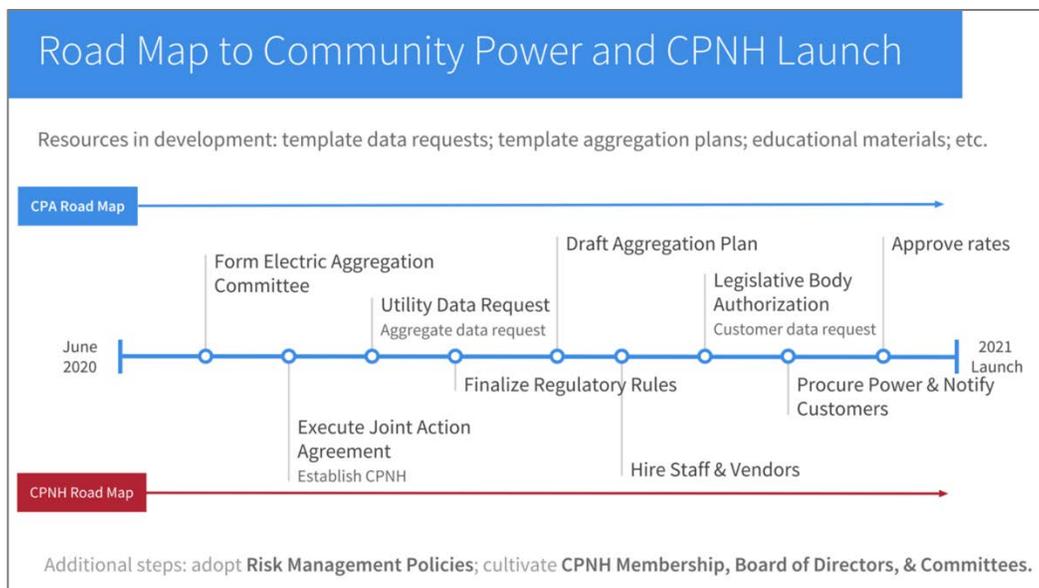
		Default Service Metrics (estimates based on downscaling 2018 / 19 actuals)			
Anticipated CPA Launch	Municipalities	CPA Accounts	CPA MWh / yr	% Statewide Default MWh	CPA Supply Receipts
2021	10	82,437	754,588	15%	\$69,969,716
2022	7	33,482	302,118	6%	\$27,589,655
TBD	14	24,109	216,710	4%	\$20,006,927
<b>Total</b>	<b>31</b>	<b>140,028</b>	<b>1,273,416</b>	<b>25%</b>	<b>\$117,566,299</b>

9

<sup>38</sup> Community Power New Hampshire, "Community Leaders Join Together to Develop Community Power New Hampshire", NHMA Town & City Magazine. May/June 2020. Available online: <https://www.nhmunicipal.org/town-city-article/community-leaders-join-together-develop-community-power-new-hampshire>.

1 Most recently, four municipalities have taken the lead in drafting a Joint Powers  
2 Agreement to establish CPNH as an independent entity and have issued a request for legal  
3 services to finalize the draft agreement by mid-September 2020.<sup>39</sup>

4 The joint action agency intends to launch member CPA programs in “early 2021” and  
5 provides the following high-level process and timeline for participating communities in their  
6 online FAQ:<sup>40</sup>



7  
8 **Q. How does the establishment of a statewide, multi-use online energy data platform**  
9 **relate to Community Power Aggregations authorized under SB 286?**

10 **A.** My testimony has explained how the statutory authorities, business model and political  
11 drivers of CPAs are naturally aligned with the development of market frameworks as called for  
12 under RSA 53-F — and how the CPA market should be expected to grow rapidly and in an  
13 operationally-coordinated fashion under the Community Power New Hampshire joint action

<sup>39</sup> Website available online: <https://lebanonnh.gov/bids.aspx?bidID=143>  
<sup>40</sup> CPNH, “COMMUNITY POWER SUMMIT FAQ & GUIDELINES,” July 2020. Available online:  
[http://www.communitypowernh.org/uploads/1/3/1/3/131383190/community-power-faq\\_june-30-2020.pdf](http://www.communitypowernh.org/uploads/1/3/1/3/131383190/community-power-faq_june-30-2020.pdf)

1 enterprise. Consequently, I urge the Commission to fully anticipate and leverage the role of  
2 CPAs in terms of helping to govern the design, implementation and evolution of the statewide  
3 data platform.

4 **Q. How should the statewide, multi-use online energy data platform be governed?**

5 **A.** The energy industry as a whole, particularly the electricity industry, is now in a period of  
6 rapid, system-wide and fundamental technological transformation that is arguably rendering  
7 administrative approaches to retail regulation outdated, inefficient and unable to meet the  
8 challenge of accelerating market distortions and shifting consumer choice expectations. A market  
9 framework that creates a continuous process of rapid, decentralized coordination to manage the  
10 complexity of these challenges is clearly warranted going forward.

11 Based on my evaluations of New Hampshire's current retail market structure, the state  
12 has a long way to go in seeing through The Electric Utility Restructuring Act (RSA 374-F) to  
13 completion. I believe that New Hampshire as a whole can make relatively rapid progress in  
14 establishing a unified, modern and competitive retail electricity market — provided that the  
15 Commission directs stakeholders work together in a market framework that elevates the role of  
16 market participants, and does not continue to provide monopoly utilities with undue influence  
17 over the operational data interchange protocols, business processes and retail customer value  
18 chain infrastructure investments upon which retail competition succeeds or fails in practice.

19 A sensible, if not necessary, first step in making meaningful progress in this regard is the  
20 establishment of a market framework that aligns with the purposes of the Electric Utility  
21 Restructuring Act — specifically, the guiding principal therein that the “commission should  
22 adapt its administrative processes to make regulation more efficient and to enable competitors to

1 adapt to changes in the market in a timely manner. The market framework for competitive  
2 electric service should, to the extent possible, reduce reliance on administrative process.”

3 The backbone of any such market framework is expansive, reliable and transparent data  
4 interchange — the establishment of which is the focus of this proceeding — sufficient to  
5 facilitate the nimble decision-making and rule changes necessary to not unduly delay innovation  
6 in market operations, and also sufficient in terms of tracking the range of metrics that the  
7 Commission and others should rely upon to analyze the performance of the market.

8 When designing the governance framework, I urge the Commission to consider how  
9 customers and municipalities are the best judges of how to meet their own requirements and  
10 preferences in the market, but that they are often not able to be fully informed or engaged in the  
11 decision-making process. They should be freely supported by a competitive industry in this  
12 capacity — e.g. Community Power Aggregators, CEPS, brokers, innovative distributed energy  
13 aggregators, etc. — that understands how to meet their requirements better than distribution  
14 utilities do. Further, competitive market entities have incentives and technical abilities that are  
15 more aligned with retail market innovation compared to distribution utilities. Therefore, the  
16 governance framework should be primarily designed to fully engage and leverage these market  
17 stakeholders in the decision-making process.

18 In that context, I would also urge the Commission to fully consider how CPAs are unique  
19 in terms of their local control governance, democratic legitimacy, technical knowledge and  
20 default customer base responsibilities in terms of both wholesale risk management and retail  
21 value chain functions. They have both the incentives and the authority to meaningfully contribute  
22 to the Commission’s complex task of seeing through the Electric Utility Restructuring Act to its  
23 completion.

1           In support of this recommendation, my testimony has provided several examples of how  
2 fully restructured markets have created nimble governance frameworks reliant upon market  
3 participants and customer representatives to continuously reform and evolve operating rules and  
4 data exchange procedures. I would recommend that the Commission look to how the Texas  
5 ERCOT market has structured its governance, specifically their Technical Advisory Committee  
6 (TAC) charter, customer representative segments and subcommittee protocols, which I have  
7 attached for reference. Additional governance <sup>41</sup>materials are available online. The Commission  
8 could implement a similar market-based framework in this proceeding, giving due consideration  
9 to the elevated role that market participants, and CPAs in particular, should be expected to play  
10 within this governance framework. The Commission should also consider employing a hearing  
11 officer, when necessary, in elevating any governance matters to the Commission to resolve.

12 **Q. Does this conclude your testimony?**

13 A. Yes.

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<sup>41</sup> Website available online: <http://www.ercot.com/committees>