

STATE OF NEW YORK  
PUBLIC SERVICE COMMISSION

---

)  
Proceeding on Motion of the Commission as to the )  
Rates, Charges, Rules and Regulations of ) Case 17-E-0238  
Niagara Mohawk Power Corporation d/b/a )  
National Grid for Electric Service )  
)

---

---

)  
Proceeding on Motion of the Commission as to the )  
Rates, Charges, Rules and Regulations of ) Case 17-G-0239  
Niagara Mohawk Power Corporation d/b/a )  
National Grid for Gas Service )  
)

---

**DIRECT TESTIMONY OF MARK LeBEL**  
**ON BEHALF OF ACADIA CENTER**

August 25, 2017

**Table of Contents**

I.	INTRODUCTION, QUALIFICATIONS, AND SUMMARY	1
II.	ACADIA CENTER VISION FOR RATE DESIGN AND DISTRIBUTED ENERGY RESOURCES COMPENSATION	5
A.	HIGH LEVEL PRINCIPLES	10
B.	ACADIA CENTER VISION IN SHORT, MEDIUM, AND LONG-TERMS	14
III.	REVIEW OF NATIONAL GRID RATE DESIGN PROPOSALS AND RECOMMENDATIONS	20
A.	MONTHLY CUSTOMER CHARGES	20
B.	DEMAND CHARGES FOR C&I CUSTOMERS	33
C.	RESIDENTIAL VOLUNTARY TIME-OF-USE RATES	36
V.	SUMMARY AND CONCLUSION	37

1 **I. INTRODUCTION, QUALIFICATIONS, AND SUMMARY**

2 **Q. Please state your name, title, employer, and business address.**

3 A. My name is Mark LeBel. I am a Staff Attorney for Acadia Center, and my office  
4 is located at 31 Milk Street, Suite 501, Boston, MA 02109.

5 **Q. Please tell me more about Acadia Center.**

6 A. Acadia Center is a non-profit, research and advocacy organization committed to  
7 advancing the clean energy future in the Northeast. Acadia Center is at the  
8 forefront of efforts to build clean, low carbon and consumer friendly economies.  
9 Acadia Center's approach is characterized by reliable information, comprehensive  
10 advocacy, and problem solving through innovation and collaboration.

11 Collectively, Acadia Center's staff has several decades of experience on the  
12 impact of utility rate design on consumer adoption of energy efficiency and clean  
13 energy technologies, and the ability of consumers to control their energy bills.  
14 Acadia Center has been active in New York and other northeastern states in  
15 researching and promoting consumer-friendly rate design that preserves  
16 incentives to use energy wisely, gives consumers greater control over energy bills,  
17 and modernizes net metering tariffs to account for costs and benefits.

18 **Q. Please summarize your work experience and educational background.**

19 A. I have been employed by Acadia Center since 2013. In my current position, I have  
20 participated in policy advocacy on a wide range of topics, spanning clean  
21 transportation, grid modernization and utility reform, renewable energy, and

1 energy efficiency. More specifically, I have led Acadia Center's efforts around  
2 vehicle electrification since 2014 and around electricity rate design and  
3 compensation for distributed energy resources (DER) since 2015.

4 Prior to joining Acadia Center, I worked at Connecticut Fund for the Environment  
5 on state-level energy policy in 2012 and 2013. From 2007 to 2009, I worked as an  
6 analyst at NERA Economic Consulting, performing economic analysis of energy  
7 and environmental policies.

8 I received a J.D. from New York University in 2012. My classwork,  
9 extracurriculars, and employment during law school focused on the law and  
10 economics of policies related to energy and the environment, including my  
11 published note on sulfur dioxide trading and the Clean Air Interstate Rule. I  
12 received my bachelors in Applied Mathematics, with a focus in economics, from  
13 Harvard College in 2007. A copy of my resume is appended to this testimony as  
14 Exhibit MEL-1.

15 **Q. Have you testified in the past at the New York State Public Service**  
16 **Commission?**

17 A. No, I have not.

18 **Q. Have you participated in other capacities in proceedings at the New York**  
19 **State Public Service Commission?**

20 A. Yes. Most notably, I have participated extensively in Case 15-E-0751 on the  
21 Value of Distributed Energy Resources, including the stakeholder process,

1 submission of comments on the Staff Report, and recently the submission of joint  
2 comments on the Phase I Order Implementation Plans. Previously, I also worked  
3 with colleagues on Acadia Center (formerly known as Environment Northeast or  
4 ENE) comments in the main Reforming the Energy Vision docket, Case 14-M-  
5 0101, particularly with respect to the Staff White Paper on Ratemaking and  
6 Utility Business Models and the Staff White Paper on Benefit-Cost Analysis.

7 **Q. Have you testified at other public utility commissions?**

8 A. Yes. I have provided testimony at the Massachusetts Department of Public  
9 Utilities (MA DPU) in Docket 17-05, the current Eversource rate case, on rate  
10 design and proposals related to electric vehicle infrastructure, and in Docket 17-  
11 13, the National Grid petition for approval of its electric vehicle market  
12 development program.

13 **Q. Have you otherwise participated in proceedings at other public utility  
14 commissions?**

15 A. Yes. I have been counsel for Acadia Center in several formal adjudicative  
16 proceedings at the MA DPU, including Docket 15-155, the recent National Grid  
17 rate case, and Docket 15-120, the National Grid petition for approval of their Grid  
18 Modernization Plan. I served as counsel for Acadia Center in Docket 4568 on  
19 electricity rate design at the Rhode Island Public Utilities Commission and I also  
20 participated in Docket 4600 at the Rhode Island Public Utilities Commission on  
21 rate design issues.

1 **Q. What is the purpose of your testimony on rate design in this proceeding?**

2 A. The purpose of my testimony is to discuss relevant principles of rate design and  
3 DER compensation reform; to describe Acadia Center's vision for rate design and  
4 DER compensation in the short-, medium-, and long-terms; to review National  
5 Grid's rate design proposals; and to provide recommendations.

6 **Q. What specific rate design topics does your testimony cover?**

7 A. My testimony focuses on three separate rate design topics: (1) residential  
8 customer charges, (2) demand charges for C&I customers, and (3) residential  
9 voluntary time-of-use rates.

10 **Q. Are you sponsoring any exhibits for your testimony?**

11 A. Yes, I am sponsoring seven exhibits: Exhibit MEL-1 through Exhibit MEL-7.  
12 Exhibit MEL-1, as previously described, is my resume. Exhibit MEL-2 is a report  
13 from the Regulatory Assistance Project titled "Smart Rate Design for a Smart  
14 Future." Exhibit MEL-3 is an Acadia Center piece titled "Sustainable Rate  
15 Design: Near-Term Consumer-Friendly Reforms for a Clean Energy Future."  
16 Exhibit MEL-4 is an analysis by National Consumer Law Center titled "Utility  
17 Rate Design: How Mandatory Monthly Customer Fees Cause Disproportionate  
18 Harm, U.S. Region: NY." Exhibits MEL-5 and MEL-6 present the results of  
19 calculations, based on National Grid's own spreadsheet, of a lower and upper  
20 bound on reasonable residential electric customer-charge costs in this proceeding.  
21 Exhibit MEL-7 is an Acadia Center piece titled "Distribution Reliability Charge:

1           Transitioning to Sustainable Rate Design.” All of these exhibits were prepared by  
2           me or under my supervision.

3       **Q.    Please summarize your conclusions.**

4       A.    Residential customer charges of \$17 per month are not justified and a reasonable  
5           range, depending on the inclusion of appropriate labor-related costs, would be  
6           between \$5.57 and \$8.30 per month. Such a reduction would benefit most  
7           residential customers, improve incentives for energy efficiency and DER, and is  
8           necessary to achieve the transactional energy future envisioned by REV.  
9           Additional steps should also be taken to make C&I demand charges and  
10          residential voluntary time-of-use rates more aligned with cost causation, as  
11          directed by previous Commission order.

12       **II.   ACADIA CENTER VISION FOR RATE DESIGN AND DISTRIBUTED**  
13       **ENERGY RESOURCE COMPENSATION**

14       **Q.    Please describe what you mean by the term “distributed energy resource”.**

15       A.    The term “distributed energy resource” covers a wide array of energy  
16           technologies connected to the grid at the distribution level. DER tend to be  
17           smaller than typical utility-scale resources and may be positioned closer to  
18           demand centers, frequently located at customer sites. The simplest description of  
19           DER technologies is distributed generation (DG) and storage, but a wide range of  
20           technologies like electric vehicles and connected, controllable appliances can also

1 be considered DER. My usage of this term in this testimony does not include  
2 energy conservation or more traditional energy efficiency investments.

3 **Q. Please describe what you mean by the term “rate design”**

4 A. The term “rate design” is a longstanding term that refers to the billing  
5 determinants for retail electricity customers and the prices set for each billing  
6 determinant.

7 **Q. What is net energy metering?**

8 A. Net energy metering is an accounting tool that allows a customer with distributed  
9 generation to only pay for net consumption over a certain time period. If net  
10 consumption is greater than zero, the customer pays for the net kilowatt-hours  
11 (kWh) consumed at the relevant retail rate. If net consumption is less than zero  
12 (i.e. generation over the relevant period of time is higher than consumption), then  
13 that customer has “net metering credits,” which can be used to offset other  
14 charges or roll over to the next billing period.

15 **Q. What is the difference between volumetric and monetary crediting?**

16 A. Volumetric crediting means that one kWh of net metering credits is applied by  
17 reducing one kWh off of a customer’s bill. This means that the value of the credit  
18 is definitively linked to the retail kWh rates for the customer who is applying the  
19 credit. In contrast, monetary crediting means that a kWh of credits is defined by a  
20 certain amount of monetary value, which can be applied to any element of a



1 customer's bill and is not necessarily linked to the retail kWh rates for that  
2 customer.

3 **Q. What is monthly netting?**

4 A. Monthly netting is a prevalent form of net metering where net consumption for  
5 DG customers is calculated on a monthly basis. Other forms of netting are  
6 possible, but it depends on what type of metering is available.

7 **Q. What is credit allocation for net metering?**

8 A. In some states, including New York, accounts that receive net metering credits  
9 can transfer those credits, with certain restrictions, to another utility account. This  
10 allows a customer to credit generation that does not take place behind his or her  
11 meter towards his or her own electricity bills. It also allows customers that may  
12 have multiple meters – for example a farm or municipality – to allocate credits  
13 across its operations or bills. Credit allocation offers several unique benefits,  
14 notably expanding customer and community access to solar and other distributed  
15 generation, customer convenience, tax benefits, and avoiding restrictions on cash  
16 transfers to low-income residents and low-income housing. In New York, this is  
17 referred to as community distributed generation or remote net metering.

18 **Q. How are stand-alone distributed generation and credit allocation important  
19 to a local clean energy future?**

20 A. Stand-alone distributed generation and credit allocation are important for several  
21 reasons. First, not all consumers and businesses are able to take advantage of local

1 clean generation options, such as solar PV or distributed wind, where they live or  
2 operate. That could be because they do not have a suitable rooftop, because they  
3 are renters, or because they are low-income and do not have good access to credit.  
4 Second, municipalities and other organizations that have multiple meters cannot  
5 necessarily use all of their properties for clean energy projects. Third, stand-alone  
6 distributed generation often can offer economies of scale compared to smaller  
7 distributed generation options, like rooftop solar. Mechanisms like credit  
8 allocation allow all consumers, businesses, non-profits, and municipalities to  
9 participate in the clean energy future and control their electric bills.

10 **Q. Please describe what you mean by the term “DER compensation”.**

11 A. The term “distributed energy resource compensation” or “DER compensation”  
12 encompasses any number of methods for compensating DER through retail-level  
13 transactions, including, but not limited to, net metering structures. When I use the  
14 term “DER compensation,” I am excluding incentive programs such as NY-SUN  
15 and electric vehicle rebates. These incentive programs are not primarily under the  
16 jurisdiction of the Department and are based on separate criteria from  
17 compensation through rates. From a policy perspective, DER compensation and  
18 such incentive programs must be looked at together to determine impacts on  
19 existing DER and the development of new DER.

1 **Q. Why do you distinguish between rate design and DER compensation?**

2 A. Often the term “rate design” refers to the structure of prices paid by retail  
3 customers for electricity consumption. Under current practices, rate design is  
4 often linked to DER compensation because net metering credit value is  
5 determined by a statutorily specified relationship to retail per-kWh rates. As a  
6 result of this, changes to rate design often have a direct and predictable impact on  
7 net metering credit value. However, net metering credit value can be set in other  
8 ways, as demonstrated by the Value of Distributed Energy Resources proceeding.  
9 The term “rate design” is sometimes used to cover both categories, but I will use  
10 both terms to make it clear that I am referring to the combined set of issues.

11 **Q. Does Acadia Center believe that reforms to rate design and DER  
12 compensation are necessary?**

13 A. Yes. Current policies in New York and other states on rate design and DER  
14 compensation have many positive features, but are blunt and inefficient in many  
15 respects. Both rate design and DER compensation must evolve over time to both  
16 accommodate and accelerate a future with widespread local clean energy and a  
17 smart and dynamic electric system. These reforms for rate design and DER  
18 compensation are also an integral part of broader reforms to utility regulation that  
19 are also necessary.

1           **A.     HIGH-LEVEL PRINCIPLES**

2           **Q.     What are the Bonbright principles for rate design?**

3           A.     In 1961, James Bonbright laid out a long list of general principles for rate design.

4           These are often summarized, but in full they are:

- 5                     1. The related, “practical” attributes of simplicity, understandability, public  
6                             acceptability, and feasibility of application.
- 7                     2. Freedom from controversies as to proper interpretation.
- 8                     3. Effectiveness in yielding total revenue requirements under the fair-return  
9                             standard.
- 10                    4. Revenue stability from year to year.
- 11                    5. Stability of the rates themselves, with a minimum of unexpected changes  
12                            seriously adverse to existing customers. (Compare “The best tax is an old  
13                            tax.”)
- 14                    6. Fairness of the specific rates in the apportionment of total costs of service  
15                            among the different customers.
- 16                    7. Avoidance of “undue discrimination” in rate relationships.
- 17                    8. Efficiency of the rate classes and rate blocks in discouraging wasteful use  
18                            of service while promoting all justified types and amounts of use:

- 1                   a. In the control of the total amounts of service supplied by the  
2                   company:
- 3                   b. In the control of the relative uses of alternative types of service  
4                   (on-peak versus off-peak electricity, Pullman travel versus coach  
5                   travel, single-party telephone service versus service from a multi-  
6                   party line, etc.).

7                   (Principles of Public Utility Rates, James C. Bonbright, Columbia University  
8                   Press 1961, p. 291).

9     **Q. Are the Bonbright principles still applicable?**

10    A. These long-standing principles are broadly accepted and are helpful guideposts on  
11       many questions. However, they are general and do not necessarily provide  
12       concrete answers to regulators dealing with 21<sup>st</sup> century issues.

13    **Q. What more specific principles for retail rate and DER compensation reform**  
14       **has Acadia Center laid out previously?**

15    A. Based on UtilityVision,<sup>1</sup> our 2015 blueprint for utility reforms to achieve a fully  
16       integrated, flexible, and low carbon electric grid that empowers and protects  
17       consumers, Acadia Center has articulated the following four principles:

---

<sup>1</sup> <http://acadiacenter.org/document/utilityvision/>

- 1           1. Monthly customer charges should be no higher than the cost of keeping a  
2           customer connected to the grid and the related customer service, but can  
3           be kept lower based on public policy considerations.
- 4           2. Other components of electricity rates can be reformed to better align  
5           customer incentives with cost drivers and the value they can provide to the  
6           system.
- 7           3. Ratepayers must be able to understand significant reforms and have a  
8           basis on which to respond and manage bills.
- 9           4. Self-generation consumed directly on-site should be treated the same as  
10          reductions in energy usage.

11   **Q. Has the Regulatory Assistance Project proposed a related set of principles?**

12   A. Yes, in a 2015 report titled “Smart Rate Design for a Smart Future”, attached as  
13   Exhibit MEL-2, Regulatory Assistance Project (RAP) laid out the following three  
14   principles, that are similar to the four Acadia Center principles identified above:

- 1           1. A customer should be able to connect to the grid for no more than the cost  
2           of connecting to the grid.
- 3           2. Customers should pay for grid services and power supply in proportion to  
4           how much they use these services and how much power they consume.
- 5           3. Customers who supply power to the grid should be fairly compensated for  
6           the full value of the power they supply. (p. 6).

7   **Q. Has the New York Department of Public Service issued principles for rate**  
8   **design?**

9   A. Yes. In Appendix A of the May 19, 2016 Order Adopting a Ratemaking and  
10   Utility Revenue Model Policy Framework (“Track Two Order”), the Department  
11   endorsed the principles of cost causation, encouraging outcomes related to energy  
12   efficiency, resilience, and reduced environmental impacts, policy transparency,  
13   economically efficient decision-making, fair value, customer-orientation, bill  
14   stability, access, gradualism, and economic sustainability.

15   **Q. Do you believe the Department’s principles are consistent with Bonbright’s**  
16   **principles and Acadia Center’s more specific principles?**

17   A. Yes, I believe they are consistent, with the exception of a sentence on fixed  
18   charges under the principle of cost causation.

1 **Q. Did the Department provide other guidance in the Track Two Order**  
2 **relevant to your testimony?**

3 A. Yes. At a general level, the Track Two Order stated that “more granular rate  
4 design must be made available to engage customers efficiently in multi-sided  
5 DER markets.” (p. 123.) More concretely, the Track Two Order required each  
6 utility to: (1) examine current C&I demand charges and propose more granular  
7 rates, and (2) revise voluntary time-of-use rates for mass market customers, along  
8 with an analysis of such rates in other jurisdictions and a promotion and education  
9 tool.

10 **B. ACADIA CENTER VISION IN SHORT-, MEDIUM-, AND LONG-**  
11 **TERMS**

12 **Q. Please describe Acadia Center’s long-term vision for rate design and DER**  
13 **compensation from Utility Vision.**

14 A. In the long term, customers should be charged for the products and services they  
15 receive and credited for the products and services they provide on a granular  
16 basis. Charges should reflect equitable recovery of costs for use of the distribution  
17 grid. Credits for exports and other services should reflect the net value, including  
18 both benefits and costs to the system. This vision includes time-varying charges  
19 and credits for energy supply, transmission, and distribution. There could be  
20 charges and credits for new retail-level markets and products, and additional  
21 values related to the environment and public health could be reflected as well. All



1 charges and credits, except those that reflect any environmental or public health  
2 values, should be on a technology-neutral basis. It may also include well-designed  
3 demand charges that are focused around local or system peaks. For customers  
4 with distributed generation or storage, netting of energy imports and exports  
5 would occur on a granular basis, instead of the current practice of monthly netting  
6 for many types of customers.

7 **Q. Are there other public policy goals that must be met in this long-run vision?**

8 A. Yes. In addition to the rate design principles discussed above, this long-term  
9 vision also includes customer control over energy costs, and equitable access to  
10 clean energy options, such as community solar.

11 **Q. Would this long-term vision apply to all customers?**

12 A. Not necessarily. Keeping certain consumer segments, such as low-income and  
13 vulnerable populations, on simpler rate structures may be justified by both  
14 economics and consumer protection principles.

15 **Q. Please describe any hurdles to this long-term vision.**

16 A. There are many reasons why this long-term vision cannot be set up overnight. It  
17 will require advanced metering functionalities, billing system upgrades, energy  
18 management technologies that are affordable for small customers, significant  
19 customer education efforts, and processes to fairly determine the charges and  
20 credits for distinct types of products and services. Statutory changes may also be  
21 necessary to implement certain reforms.

1 **Q. Has New York taken any significant steps towards this long-term vision?**

2 A. Yes. The Track Two Order, as discussed above, contained significant reforms to  
3 both rate design and DER compensation, which have been elaborated on in the  
4 March 9, 2017 Order on Net Energy Metering Transition, Phase One Value of  
5 Distributed Energy Resources, and Related Matters in Case 15-E-0751. This also  
6 includes steps towards advanced metering functionality for ConEd in Case 15-E-  
7 0050.

8 **Q. Have other states in the Northeast taken significant steps towards this long-**  
9 **term vision?**

10 A. In Massachusetts, the Department of Public Utilities issued Orders 12-76-B and  
11 14-04-C in 2014, requiring utility proposals for a rollout of advanced metering  
12 functionality and time-varying rates for energy supply. These proposals are  
13 currently being adjudicated in a proceeding for each utility, including Docket 15-  
14 120 for National Grid. In Rhode Island, a working group, including Acadia  
15 Center, National Grid, Northeast Clean Energy Council and others, recently  
16 released a stakeholder report in Rhode Island Public Utility Commission Docket  
17 No. 4600 that includes a joint long-term vision for rate design that is consistent  
18 with Acadia Center's vision. Rhode Island has also launched the Power Sector  
19 Transformation Initiative, which has the potential to take steps towards this  
20 vision.

1 **Q. Given this long-term vision, how does Acadia Center approach the short-**  
2 **and medium-term?**

3 A. We believe that reforms in the short- and medium-term must take steps towards  
4 this long-term vision, and simultaneously satisfy the relevant rate design  
5 principles and public policy goals. Gradualism and customer understanding are  
6 also key to implementing reforms. Rate reforms can be phased in, and customer  
7 protections like “shadow billing,” where customers can see what their bill would  
8 be under different rate structures, and “hold-harmless periods,” where customers  
9 can only benefit from new rate structures, are helpful transition tools. Metering  
10 costs and billing system upgrades must also be considered in the short- and  
11 medium-term.

12 **Q. Has Acadia Center proposed a set of short-term reforms?**

13 A. Yes. The Acadia Center document “Sustainable Rate Design: Near-Term  
14 Consumer-Friendly Reforms for a Clean Energy Future,” attached as Exhibit  
15 MEL-3, lays out five near-term steps that states across the region can take to  
16 begin to make rate design and DER compensation fairer and more accurate, while  
17 maintaining or improving incentives for energy efficiency and access to clean  
18 energy:

- 1           1. Limit reliance on fixed customer charges;
- 2           2. Implement Acadia Center's "distribution reliability charge"<sup>2</sup> proposal to
- 3                 begin to account for any proven cross-subsidies due to distributed
- 4                 generation installed by mass market customers;
- 5           3. Offer opt-in time-of-use rates;
- 6           4. Enable or maintain credit allocation for community distributed generation,
- 7                 with a robust low-income component; and
- 8           5. Implement monetary crediting, begin to align net metering credits with
- 9                 ratepayer value, and remove caps on net metering.

10 **Q. What key issues are addressed by these proposed short-term reforms?**

11 A. These short-term reforms reflect gradualism, minimal additional metering costs  
12 and billing system upgrades, and several incremental steps to better reflect the  
13 costs and benefits of customer consumption patterns and exports from distributed  
14 generation. One step of particular relevance in a rate case is the beginning of a  
15 process to unbundle distribution system costs, or otherwise distinguish between  
16 (1) the full embedded costs of the distribution system that must be recovered by  
17 the utility, and (2) the value of exported energy to the delivery system. Such a  
18 process is key to establishing the proper level of the distribution reliability charge.

---

<sup>2</sup> See, *infra*, at Section III.E, pages 30-32 for more detail on the distribution reliability charge proposal.

1 **Q. How does this apply in New York and other states in the region?**

2 A. Each state in the region is in a different place on these issues. New York is  
3 currently launching a community solar market with enormous potential, has taken  
4 important steps to begin aligning net metering credit structures with ratepayer  
5 value, and offers time-of-use rates for mass market customers. In those respects,  
6 New York is leading many other states. However, New York currently has very  
7 high residential customer charges by regional or national standards.

8 **Q. Has Acadia Center proposed concepts for medium-term reforms?**

9 A. Acadia Center is beginning to explore concepts for medium-term reforms. This  
10 could include:

- 11 1. Default time-of-use rates for certain categories of customers, including  
12 time-of-use netting for distributed generation customers;
- 13 2. Charging for embedded delivery system costs and public policy costs for  
14 imports and crediting for value to the delivery system for exports;
- 15 3. Incremental avoided environmental and public health compliance costs  
16 can be credited for exports on a technology-specific basis; and
- 17 4. Charges and credits corresponding to other portions of the electric system  
18 (e.g., energy and generation capacity) can be symmetric for imports and  
19 exports.

20 Such steps would logically link short-term steps with Acadia Center's long-term  
21 vision. Default time-of-use rates and time-of-use netting is a significant step

1 beyond current practices, particularly for DG customers for whom monthly  
2 netting is currently the norm. These medium-term reforms would require  
3 substantial processes to unbundle delivery values, and determine other appropriate  
4 credits and charges by time-of-use period and by technology as appropriate.

5 **Q. Must reforms to rate design and DER compensation follow a specific**  
6 **sequence?**

7 A. Each individual reform has prerequisites for implementation, but not every state  
8 will need to make each stop along the way. In other words, some jurisdictions  
9 may be able to skip straight to reforms that I would describe as medium-term, or  
10 some may adopt short-term reforms for a number of years before adopting long-  
11 term reforms. Lastly, states may be able to apply more advanced reforms to  
12 certain customers, primarily larger C&I customers, on a shorter timetable.

13 **III. REVIEW OF NATIONAL GRID RATE DESIGN PROPOSALS AND**  
14 **RECOMMENDATIONS**

15 **A. RESIDENTIAL MONTHLY CUSTOMER CHARGES**

16 **Q. What are monthly customer charges?**

17 A. A monthly customer charge, also known as a fixed charge or a basic service  
18 charge, is a flat fee paid every billing period by a customer, regardless of how  
19 many kWh are consumed or other billing determinants.

1 **Q. What are the direct impacts of higher monthly customer charges on other**  
2 **parts of the electric bill?**

3 A. Higher monthly customer charges mean that less revenue needs to be collected  
4 through other portions of rates. For rate classes without demand charges, higher  
5 fixed charges mean lower per-kWh rates.

6 **Q. What are the negative impacts of higher customer charges and lower per-**  
7 **kWh rates?**

8 A. There are a number of negative impacts. First, lower per-kWh rates decrease the  
9 incentives for energy efficiency investment and limit customer control of bills.  
10 Second, there are significant distributional consequences because smaller  
11 customers end up paying more and larger customers end up paying less. This is  
12 particularly significant in the residential context. The National Consumer Law  
13 Center (NCLC) has shown that low-income households consume less electricity  
14 than average, so higher customer charges increase bills for low-income  
15 households. A New York-specific NCLC analysis is attached as Exhibit MEL-4.  
16 Third, because of the linkage between per-kWh rates and net metering credit  
17 value, higher customer charges arbitrarily decrease DER compensation.

18 **Q. Why do some argue that fixed charges should be higher?**

19 A. Utilities across the country often argue that past investments are “fixed” and  
20 should therefore be recovered through fixed charges. However, this confuses two  
21 concepts. Historical investments are sunk costs, but that does not mean that they

1 should be recovered through fixed charges. Rates should be forward-looking and  
2 consider the impact of customer choices on future investments. Nationally, the  
3 arguments in favor of fixed charges also align with utility interests in increasing  
4 revenue stability, and reducing incentives for energy efficiency and distributed  
5 generation. In restructured jurisdictions, even decoupled distribution utilities still  
6 have an interest in increased revenue stability in terms of timing and the certainty  
7 of collections. Also, because companies that invest in transmission lines and other  
8 energy resources receive a return on those investments, they have an incentive to  
9 discourage local energy production that could reduce the need for additional  
10 infrastructure investment.

11 **Q. What downsides do high fixed charges present to utilities?**

12 A. In the long run, high fixed charges encourage customers to disconnect from the  
13 grid entirely. As the costs of distributed generation and storage continue to fall,  
14 this may become a viable option for increasing numbers of ratepayers.

15 **Q. How do fixed charges relate to broader principles of economic regulation?**

16 A. One key role of public utility regulation is to approximate the incentives of  
17 market competition and prevent monopolistic behavior. Utility claims about the  
18 necessity of recovering costs through fixed charges are definitively disproven by  
19 the numerous competitive industries where large fixed investments are recovered  
20 through per-unit purchases by consumers. This includes oil refineries where



1 consumers pay for gasoline by the gallon, and farms where consumers pay for  
2 apples by the pound.

3 **Q. How do these considerations relate to the previously described rate design**  
4 **principles?**

5 A. The negative impacts of higher customer charges inform Acadia Center's first  
6 principle of rate design reform that monthly customer charges should be no higher  
7 than the cost of keeping a customer connected to the grid and the related customer  
8 service, but may be kept lower based on public policy considerations. Relatedly,  
9 high customer charges violate the more general rate design principles of  
10 efficiency and fair cost allocation among customers, as well as public policy  
11 principles around equity for low-income customers.

12 **Q. What did the Track Two Order say with respect to monthly customer**  
13 **charges?**

14 A. The Track Two Order described a long-running debate about which distribution  
15 system costs are truly variable and ultimately adopted the principle that "[f]ixed  
16 charges should only be used to recover costs that do not vary with demand or  
17 energy usage." Appendix A.

18 **Q. Do you agree with this principle?**

19 A. No. The categories of costs that are appropriate for customer charges should be  
20 more limited and defined as the incremental cost of connection. This includes the

1 costs of a simple meter, billing expenses, the service drop, and certain elements of  
2 customer service.

3 **Q. Why is this definition more appropriate?**

4 A. Customer charges that are higher than the cost of connection encourage  
5 uneconomic bypass, discourage energy efficiency and self-generation, and  
6 inappropriately shift costs toward low usage customers. There are many types of  
7 distribution costs that do not directly vary with energy or demand, but are not a  
8 part of the cost of connection. That includes a wide range of general  
9 administrative and overhead costs and potentially other program costs. Utilities  
10 also argue that there are costs of distribution infrastructure, beyond the meter and  
11 service drop, that do not vary with energy or demand.

12 **Q. What is National Grid proposing with respect to residential customer  
13 charges?**

14 A. National Grid is proposing to keep residential customer charges the same at \$17  
15 per month for general SC-1 residential customers. Exh. E-RDP-4, Schedule 3A.

16 **Q. What evidence has National Grid presented in support of these customer  
17 charge proposals?**

18 A. The primary evidence produced in support of these customer charge proposals is  
19 Exhibit E-RDP-3, Schedule 4, titled "Customer Charge Costs in Revenue  
20 Requirement". National Grid provided an updated working spreadsheet version of  
21 this exhibit as Attachment 2 to the response to AC-1 IR-4.

1 **Q. Have you examined the calculation of customer-charge costs?**

2 A. Yes, I have.

3 **Q. What have you concluded about the calculation of customer-charge costs?**

4 A. The methods used end up allocating a wide range of costs inappropriately as  
5 customer-charge costs: such as program costs for energy efficiency, low-income  
6 discounts, and economic development, transformer costs, the delivery portion of  
7 uncollectible accounts, and certain portions of “labor-related” costs. National Grid  
8 did appropriately exclude most distribution infrastructure costs from customer-  
9 charge costs.

10 **Q. Please explain the issues with the calculation of customer-charge costs.**

11 A. Costs included in customer charges should be limited to the costs of connecting a  
12 customer to the grid, primarily the costs of a simple meter, billing expenses, the  
13 service drop, and elements of customer service. This is reflected in Acadia  
14 Center’s rate design principles as well as the principles of the Regulatory  
15 Assistance Project. However, National Grid’s calculations do not appear to line  
16 up with these principles.

17 **Q. Have you calculated revised customer-charge costs that would be reasonable  
18 in light of these principles?**

19 A. Yes. Exhibits MEL-5 and MEL-6 present respectively a lower bound and upper  
20 bound on a reasonable definition of customer-charge costs in this proceeding. I

1 have minimally adjusted National Grid's own spreadsheet for this purpose.<sup>3</sup> Both  
2 cases eliminate clearly inappropriate costs, namely program costs for energy  
3 efficiency, low-income discounts, and economic development, transformer costs,  
4 and the delivery portion of uncollectible accounts. More detailed questions are  
5 raised by National Grid's inclusion of labor-related costs that are not directly  
6 included in metering and billing expenses. For example, it may be appropriate to  
7 include a portion of employee benefits and payroll-related taxes, but it is less  
8 appropriate to include general plant and other overhead costs. To provide fair  
9 bounds, I've calculated customer-charge costs with and without labor-related  
10 costs. Exhibit MEL-5 demonstrates that a reasonable lower bound is \$5.57 for  
11 general residential customers. Exhibit MEL-6 demonstrates that a reasonable  
12 upper bound is \$8.30 for general residential customers.

13 **Q. Are there any precedents for reforming and lowering monthly customer**  
14 **charges?**

15 A. Yes. Based on 2015 legislation, the Connecticut Public Utilities Regulatory  
16 Authority (CT PURA) reduced the residential customer charge for United  
17 Illuminating from \$17.25 per month to \$9.67 per month. CT PURA Docket No.  
18 16-06-04, Final Decision dated December 14, 2016. CT PURA is currently  
19 undertaking a generic docket to make a final determination on the categories of

---

<sup>3</sup> Edited cells are highlighted in yellow in Exhibits MEL-5 and MEL-6.

1 costs that are appropriate for inclusion in customer charges. CT PURA Docket  
2 No. 17-01-12.

3 **Q. How do lower monthly residential customer charges impact customer bills?**

4 A. It is important to understand that the majority of customers benefit from lower  
5 customer charges, even if volumetric kWh rates are correspondingly increased. As  
6 a matter of mathematics given a fixed revenue requirement, lower customer  
7 charges and higher volumetric rates leads to a lower bill for any customer with  
8 lower than average usage. Given the distribution of kWh consumption, many  
9 more bills are below average usage than above average usage. In 2016, the  
10 average monthly consumption for the residential customer class was 639 kWh per  
11 month (AC-3 IR-1), but the median bill only used 507 kWh (AC-3 IR-2). As a  
12 result, approximately 60% of customer bills would be lower with lower customer  
13 charges. See Attachment 1 to AC-1 IR-7REV.

14 **Q. What are other benefits of lower customer charges?**

15 A. Shifting cost recovery from customer charges to other billing determinants allows  
16 for better incentives for energy efficiency and DER. Ultimately, these types of  
17 economically justified incentives are necessary to make the transactional DER  
18 future envisioned by REV possible. Lower customer charges also reduce the  
19 incentives for customers to disconnect from the grid, as well as to master meter.

1 **Q. What are some common arguments against lowering monthly customer**  
2 **charges?**

3 A. Arguments against lowering monthly customer charges include (1) lower  
4 financial stability for utilities, (2) potential adverse impacts on the subset of low-  
5 income customers with higher than average usage, and (3) inappropriately high  
6 kWh prices and potential cross-subsidies.

7 **Q. Do you believe that these concerns represent insurmountable obstacles?**

8 A. No, I do not and I can address each in turn.

9 **Q. What about concerns with respect to utility financial stability?**

10 A. New York is ultimately an outlier with its high customer charges and utilities in  
11 other states remain financially viable with lower customer charges. New York has  
12 revenue decoupling, which helps address overall financial stability, albeit with a  
13 time lag. However, National Grid itself has much lower customer charges in  
14 Massachusetts and Rhode Island, namely \$5.50 per month and \$5 per month, and  
15 this does not seem to be an impediment to the successful operation of its  
16 distribution companies.

17 **Q. What about concerns with respect to higher usage low-income customers?**

18 A. In general, it accords with common sense that low-income customers use less  
19 electricity than higher-income counterparts, with smaller homes and fewer  
20 appliances. This is reflected in statewide data from NCLC discussed above.  
21 However, patterns may vary by service territory. In National Grid service

1 territory, existing low-income customers have modestly lower average annual  
2 consumption, at 612 kWh per month,<sup>4</sup> than the overall residential population at  
3 639 per month. However, low-income customers have higher average  
4 consumption than other residential customers from December through April, and  
5 lower average consumption from May through November. Pace-1 AD-4. In  
6 general, these averages may be biased through self-selection of customers with  
7 larger bills into energy assistance programs, but they are also consistent with  
8 significant numbers of low-income customers having inefficient electric  
9 resistance heating. This issue can be productively addressed by implementing  
10 seasonal kWh rates, with higher charges in the peak summer months and lower  
11 charges in other months. Seasonal kWh rates both provide improved economic  
12 incentives, but also mitigate any impacts on low-income customers with high bills  
13 due to electric resistance heating. Programs to help low-income customers replace  
14 electric resistance heating with efficient and clean alternatives, notably efficient  
15 electric heat pumps, would also productively address this issue.

16 **Q. What about concerns with respect to inappropriately high variable prices**  
17 **and potential cross-subsidies?**

18 A. In general, low customer charges and higher variable rates provide a more  
19 efficient set of incentives that have fewer undesirable side effects. Better

---

<sup>4</sup> In Pace-1 AD-4, over the course of 2016, there are 1,237,950 low-income customer bills and usage of 757,203,955 kWh on those bills, for a calculated average of 612 kWh.

1 incentives for energy efficiency through higher variable rates are well-justified  
2 due to the significant externalities for the environment and public health that are  
3 not included monetarily in rates. In the future, as rates become more granular  
4 through other REV processes, this can take forms other than traditional flat kWh  
5 charges for residential customers, which will also provide improved incentives to  
6 optimize the electric system, and can provide the basis for the transactional DER  
7 future envisioned by REV. Customer charges that are higher than the marginal  
8 cost of connection also incentivize uneconomic bypass of various kinds, leading  
9 to fewer accounts than optimal. Higher customer charges mean that customers  
10 will inefficiently disconnect from the grid and master meter whenever possible,  
11 leading to potentially suboptimal incentives for tenants. Specific concerns about  
12 any cross-subsidies for mass market net energy metering customers can be  
13 addressed through the Phase II Value of Distributed Energy Resource process, but  
14 Acadia Center also has an interim proposal that could be implemented in this rate  
15 case.

16 **Q. What is this interim proposal?**

17 A. As discussed above, Acadia Center has proposed the distribution reliability charge  
18 (DRC) to address any proven cost shifts shown by a transparent study with  
19 sufficient stakeholder input. A full description of the proposal is attached as  
20 Exhibit MEL-7.



1 **Q. Please provide a high-level summary of the distribution reliability charge.**

2 A. The DRC operates within existing statutory limitations to create a new billing  
3 determinant for distribution that is not based on demand or customer charges, but  
4 rather on a 12-month rolling average of net monthly consumption. For the  
5 purposes of this new billing determinant, a net metering customer would not be  
6 able to factor in months with net exports, effectively creating a floor of zero on  
7 net monthly consumption. This new charge would be revenue neutral and offset  
8 by the appropriate reduction in the traditional per-kWh rate. Lastly, because the  
9 DRC is not a traditional per-kWh rate, it would not be factored into the value of  
10 net metering credits for exports.

11 **Q. What are the impacts of the DRC?**

12 A. The impacts of the DRC on customers without distributed generation are minimal,  
13 merely smoothing a portion of the bill over the course of a year. For customers  
14 with distributed generation, there are two impacts: (1) lower net metering credit  
15 value due to the adjustment to the per-kWh rate and (2) a new billing determinant  
16 that is bounded below at zero. In some ways, the DRC mimics the impacts of a  
17 demand charge, without the negative consequences of being based on demand.

18 **Q. How would the level of the DRC be determined?**

19 A. Ideally, the level of the DRC or any successor mechanisms would be determined  
20 based on a process for unbundling distribution rates. In the shorter term,  
21 refinements to the existing allocated cost of service study process could serve as a

1 proxy to divide categories of distribution system costs that can be avoided or  
2 lowered by DER (“avoidable costs”) from categories of distribution system costs  
3 that are not impacted by DER (“unavoidable costs”). The avoidable costs would  
4 remain in the per-kWh charge and would be reflected in the value of net metering  
5 credits. This is appropriate as a proxy for the value of DER exports. The  
6 unavoidable costs would be put into the DRC, and appropriately removed from  
7 the value of net metering credits, since those costs are not related to the value of  
8 DER exports.

9 **Q. What rate classes should this apply to?**

10 A. This would primarily apply to residential rate classes if customer charges are  
11 lowered significantly, where demand charges are clearly inappropriate in the short  
12 term.

13 **Q. How does the DRC relate to Acadia Center’s medium- and long-term vision?**

14 A. The DRC is a modest step that reflects key principles in our medium- and long-  
15 term vision. Distribution rates should be unbundled to determine the value of  
16 DER to the distribution system, a process that is beginning in New York in the  
17 Value of DER Proceeding, Case 15-E-0751. This allows for a well-justified  
18 distinction between the rates for imports that reflect embedded costs through a  
19 combination of energy charges and any demand charges, and credits for exports  
20 that reflect value. As mentioned previously, appropriate statutory changes to net  
21 metering structures would better enable these types of reforms.

1 **Q. Are there any other residential customer charge issues that the Department**  
2 **should consider?**

3 A. Yes, although simple metering is a reasonable part of customer connection costs,  
4 advanced metering provides benefits that are related to demand and energy usage.  
5 The Regulatory Assistance Project identifies a range of benefits from advanced  
6 meters in its report, “Smart Rate Design for a Smart Future.” Exhibit AC-ML-2 at  
7 56-57. Many of the benefits of advanced metering are related to energy savings,  
8 peak load management, and distribution cost controls. The portion of the  
9 advanced metering costs, including back office costs, that are related to these  
10 benefits should not be collected through the customer charge. It is fairer and more  
11 efficient to collect these costs through other billing determinants, particularly  
12 because larger customers benefit more from electric system savings.

13 **B. DEMAND CHARGES FOR C&I CUSTOMERS**

14 **Q. What is a demand charge?**

15 A. A demand charge is a charge based on a customer’s usage over a short period of  
16 time, often between 15 minutes and one hour. It is often denominated in kilowatts  
17 (kW), not kWh like typical volumetric charges, but typically reflects average  
18 consumption during the relevant period, not an instantaneous kW power draw. A  
19 demand charge can be based on different time periods. A non-coincident peak  
20 demand charge could be based on a customer’s peak 15-minute usage at any point  
21 during a billing period, even if the customer’s peak is at a time that is unlikely to

1 be a local or system peak hour. However, demand charges can also be based on  
2 more narrow time windows, such as peak usage during given hours or customer  
3 demand at actual coincident peak times. Demand charges based on these narrow  
4 time periods typically require more expensive metering than those that measure  
5 non-coincident individual peaks.

6 **Q. What type of demand charges are currently included in National Grid's C&I**  
7 **tariffs?**

8 A. Reviewing the tariffs indicate that National Grid's demand charges are based on  
9 non-coincident individual peaks in each billing period, with provisions for  
10 ratchets and contract demand levels. This leaves substantial room for  
11 improvement and additional granularity.

12 **Q. Did National Grid propose more granular demand charges as required by**  
13 **the Track Two Order?**

14 A. No. In a separate filing in the primary REV docket, National Grid argued that no  
15 changes were necessary to current C&I demand charge structures. Demand  
16 Charge Evaluation Filing of Niagara Mohawk Power Corporation, April 17, 2017,  
17 Case 14-M-0101.

18 **Q. Have you examined this separate demand charge evaluation filing?**

19 A. Yes, at a high level.

1 **Q. What is your opinion on the analysis in this filing?**

2 A. The analysis does not necessarily look at the right questions. The load shape for  
3 individual rate classes is much less relevant than the combined load shape, across  
4 rate classes, at different points on the delivery system. Furthermore, a flat load  
5 shape for a given customer class indicates that customers are responding  
6 rationally to the incentives provided by existing demand charges, but it certainly  
7 does not indicate efficient behavior from a system perspective.

8 **Q. What is your opinion on additional steps that should be taken to reform**  
9 **National Grid's demand charges?**

10 A. For C&I customers with sophisticated metering, gradual steps should be taken to  
11 make demand charges more aligned with delivery system peaks. This does not  
12 mean that all costs should be recovered from a narrow peak window. However, a  
13 portion of delivery costs could be moved into an additional 3- to 6-hour daily  
14 window that corresponds with the relevant peaks on a seasonal basis. For C&I  
15 customers without the necessary metering, similar steps can be taken if and when  
16 advanced metering has been rolled out to those customers.

1           **C.       RESIDENTIAL VOLUNTARY TIME-OF-USE RATES**

2       **Q.       What is National Grid proposing with respect to the SC-1 voluntary time-of-**  
3       **use rate?**

4       A.       National Grid is proposing to keep the same structure that was approved in 2016.<sup>5</sup>  
5               This included an on-peak time period of 7 am to 11 pm on non-holiday weekdays  
6               for both delivery and supply, a super-peak period of 2 pm to 6 pm on non-holiday  
7               weekdays from June through August for supply, and an incremental customer  
8               charge of \$3.36 per month. Exhibit E-RDP 4, Schedule 4 proposes new on-peak  
9               and off-peak delivery rates for delivery, but does not mention any changes to the  
10              customer charge structure.

11      **Q.       What is your opinion on this structure for the SC-1 voluntary time-of-use**  
12      **rate?**

13      A.       Given the super-peak period, this may represent a reasonable structure with  
14              respect to supply. However, the extremely broad on-peak period and lack of  
15              seasonal variation does not provide any serious linkage to cost causation for  
16              delivery costs. These elements should all be reconsidered, including the level of  
17              any incremental customer charge. In particular, the highest pricing periods should  
18              be focused on delivery system peaks, both local and regional, but limited to less  
19              than 6 hours in duration per day to enable a reasonable customer response. The

---

<sup>5</sup> [http://www9.nationalgridus.com/niagaramohawk/home/rates/4\\_vtou.asp](http://www9.nationalgridus.com/niagaramohawk/home/rates/4_vtou.asp)

1 reformed structure for delivery should either be synchronized with the supply  
2 structure or both structures should be reconsidered together. For the purposes of  
3 customer understanding in the short term, it would be wise to limit the different  
4 time periods adopted in this rate case to two or three per season. In the future,  
5 energy management technology could allow small customers to manage their  
6 consumption and DER to properly utilize more complex TVR options.

7 **Q. Has National Grid proposed a promotion and education tool in this docket as**  
8 **required by the Track Two Order?**

9 A. Yes, the Electric Customer Panel discusses such a proposal, but it lacks many  
10 specifics. Electric Customer Panel testimony at 77-79.

11 **V. SUMMARY AND CONCLUSION**

12 **Q. Please summarize your conclusions regarding National Grid's proposals for**  
13 **residential monthly customer charges.**

14 A. National Grid's proposal for monthly residential customer charges is not  
15 reasonable given the calculation in Exhibit E-RDP-3, Schedule 4. If inappropriate  
16 costs are removed from this calculation, namely program costs for energy  
17 efficiency, low-income discounts, and economic development, transformer costs,  
18 the delivery portion of uncollectible accounts, and certain portions of "labor-  
19 related" costs, a reasonable range for monthly residential customer charges is  
20 between \$5.57 and \$8.30. A majority of residential customers will benefit from  
21 lower customer charges and such a change will result in better incentives for

1 energy efficiency and DER. Lower customer charges, based on the incremental  
2 cost of connection, are well justified based on long-standing practices in many  
3 other states and Connecticut is currently reforming and lowering residential  
4 customer charges based on this principle. New York should pursue similar  
5 reforms and any negative side effects can be managed with other incremental rate  
6 reforms, such as seasonal rates or Acadia Center's proposal for a distribution  
7 reliability charge.

8 **Q. Please summarize your conclusions regarding National Grid's proposals with**  
9 **respect to C&I demand charges.**

10 A. National Grid's current demand charges for C&I customers are almost exclusively  
11 based on non-coincident individual customer peaks in each billing period. The  
12 analysis filed by National Grid in Case 14-M-0101, which argues that no demand  
13 charge reforms are necessary, does not necessarily look at the right questions.  
14 Gradual steps should be taken now to make C&I demand charges more granular  
15 for customers with sufficiently sophisticated metering and, as more sophisticated  
16 metering is rolled out for other customers, similar steps should also be taken.

17 **Q. Please summarize your conclusions regarding National Grid's proposals with**  
18 **respect to the residential voluntary time-of-use rate?**

19 A. National Grid is proposing to keep the same structure for residential time-of-use  
20 rates that was recently approved in 2016. However, the broad on-peak period  
21 from 7 am to 11 pm for delivery pricing, with no seasonal variation, is not



1 reasonably linked to cost causation. All of the elements of the voluntary time-of-  
2 use rate should be reconsidered, including the level of any incremental customer  
3 charge. For the purposes of gradualism and customer understanding, the number  
4 of time periods per season should be limited to two or three.

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

6 **A.** Yes, it does.