

**BEFORE THE
PUBLIC UTILITIES COMMISSION
OF THE
STATE OF RHODE ISLAND
AND PROVIDENCE PLANTATIONS**

IN THE MATTER OF

**Review of the use of Backup Rates)
By National Grid)**

Docket No. 4232

**DIRECT TESTIMONY OF WITNESS
BRUCE R. OLIVER**

On Behalf of

The Division of Public Utilities and Carriers

June 3, 2011

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Docket No. 4232
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Schedule BRO-1: Backup Service Pricing Sensitivities

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I. INTRODUCTION

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Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS FOR THE RECORD.

A. My name is Bruce R. Oliver. My business address is 7103 Laketree Drive, Fairfax Station, Virginia, 22039.

Q. BY WHOM AND IN WHAT CAPACITY ARE YOU EMPLOYED?

A. I am employed by Revilo Hill Associates, Inc., and serve as President of the firm. I manage the firm's business and consulting activities, and I direct its preparation and presentation of economic, utility planning, and policy analyses for our clients.

Q. ON WHOSE BEHALF DO YOU APPEAR IN THIS PROCEEDING?

A. My testimony in this proceeding is presented on behalf of the Division of Public Utilities and Carriers (hereinafter "the Division").

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. This testimony addresses issues relating to Backup Rates for National Grid (or hereinafter "National Grid," "NGrid," or "the Company") electric customers who have on-site generation. This testimony responds to portions of the pre-filed Direct Testimony of witness Lloyd for National Grid and witness William Ferguson for the Energy Council of Rhode Island ("TEC-RI"). In addition, this testimony presents the Division's recommendations regarding the Backup service charges and a proposal

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1 for restructuring the Company's charges for service to customers with self-
2 generation.

3
4 **II. SUMMARY**

5
6 **Q. WHAT ARE THE KEY FINDINGS AND RECOMMENDATIONS OF YOUR**
7 **TESTIMONY?**

8 **A.** The key elements of this testimony are as follows:

9
10 ➤ An elimination of Backup Service Rates is not necessary to provide more
11 cost-effective pricing of that service for customers with facilities for self-
12 generation of some or all of their electric service requirements nor is such
13 action justified on the basis of utility costs.

14
15 ➤ Portions of the Company's costs of providing distribution service can be
16 influenced by a customer's installation of facilities for self-generation of
17 electric requirements;

18
19 ➤ NGrid's pricing of Backup Service demand should be modified to reflect a
20 reasonable assessment of the expected coincidence of Backup Service
21 requirements with peak demands on commonly used distribution facilities.

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1 ➤ The Commission should further enhance National Grid's Backup Service
2 offerings by amending its current Backup Service rates to include provisions
3 for Scheduled Maintenance Service that would be provided with no
4 associated demand charges.

5

6

III. DISCUSSION OF ISSUES

7

8 **Q. HOW IS YOUR DISCUSSION OF ISSUES IN THIS PROCEEDING ORGANIZED?**

9 **A.**This discussion is presented in five sections. **Section A** provides a discussion of
10 important background for the Commission's considerations in this proceeding
11 including a breakdown of what is included in Backup Service requirements. **Section**
12 **B** summarizes the key elements of National Grid's position in this proceeding as set
13 forth in the Direct Testimony of witness Lloyd. **Section C** describes the major
14 elements of the Direct Testimony of TEC-RI witness Ferguson. **Section D**
15 evaluates the issues before the Commission in this proceeding in an effort to
16 highlight important elements of the Backup Rate issues upon which the Commission
17 should focus its ratemaking policy determinations. **Section E** presents the
18 Division's recommendations regarding the structuring of appropriate Backup Service
19 rates for National Grid.

20

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1 A. Background

2

3 Q. WHAT IS THE NATURE OF CUSTOMER REQUIREMENTS FOR BACKUP
4 SERVICE?

5 A. Generically, backup service rates offer pricing for utility-provided electric service as
6 a replacement for or supplement to customer-owned generation. Backup Service
7 has three components. Those components are:

8

9 ➤ The emergency supply of distribution system capacity to facilitate a
10 customer's replacement of output from customer-owned generating
11 facilities when the customer's generation facilities are unexpectedly
12 forced out of service;

13

14 ➤ The supply of distribution system capacity to facilitate a customer's
15 replacement of output from customer-owned generating facilities when
16 such facilities are taken out of service by the customer for scheduled
17 maintenance activities;

18

19 ➤ The supply of distribution system capacity to facilitate a customer's
20 acquisition of generation at times when either:

21

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1 (i) The customer's generation facilities are not sufficient to
2 meet the entirety of the customer's electric service
3 requirements; or

4
5 (ii) The customer determines that it is more economical to
6 obtain energy supplies from either the utility or third-party
7 supplier than to generate power from its own facilities.

8
9 The Commission should note that if a customer's self-generation facilities are
10 fully isolated from the utility's electrical system, the customer is not required to take
11 any form of backup service. However, in such circumstances, a customer with self-
12 generation would have to provide redundant generation capacity, install electricity
13 storage, or plan for shutdowns of production activities when customer-owned
14 generation is unavailable. At present, it is generally perceived that the costs of
15 utility-supplied backup service are less than the costs to the customer of the
16 alternatives cited above, but advances in electrical storage technology may change
17 that assessment in the future.

18 In addition, the Commission must recognize that a customer with self-
19 generation which supplies service to facilities that are not electrically isolated from
20 the utility may at times make economic decisions to use utility-provided service
21 when the cost of generation from the utility is less than the cost of self-generation.
22 A key problem for the regulators is identification and pricing of the different types of

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1 service requirements that may pass through the customer's utility service meter.
2 Customer-owned generating facilities may experience partial outages or limitations
3 or output that require less than their complete shutdown, and the impacts of those
4 reductions on purchases of utility provided service may be difficult to differentiate
5 from normal supplemental service requirements or customer's decision to use utility-
6 supplied service for economic reasons.

7
8 **Q. HOW ARE NARRAGANETT'S RATES FOR BACKUP SERVICE PRESENTLY**
9 **STRUCTURED?**

10 A. Schedule JAL-1 attached to the Direct Testimony of National Grid witness Lloyd
11 provides copies of the Company's currently effective Backup Service Tariffs
12 ("Backup Tariff"). The rates set forth in that exhibit include Schedule B-32 and
13 Schedule B-62. Each of those rate schedules includes separate sets of charges for
14 "Backup Retail Delivery Service" ("Backup Service") and for "Supplemental Retail
15 Delivery Service" (Supplemental Service).

16 The Company's Backup Service charges comprise only a monthly customer
17 charge and a Distribution Demand Charge. All energy (kWh) and supplemental
18 demand (kW or kVa) requirements are billed under Supplemental Service rates
19 which include both distribution and transmission demand charges and an array of
20 energy (kWh) related charges for the recovery of distribution, transmission,
21 transition, energy efficiency and standard offer service costs.

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1 **Q. HOW ARE BACKUP AND SUPPLEMENTAL SERVICE REQUIREMENTS**
2 **DISTINGUISHED FROM EACH OTHER UNDER THE COMPANY'S CURRENT**
3 **BACKUP SERVICE TARIFFS?**

4 A. As developed in the Company's tariffs, Backup Service simply represents a
5 reservation of capacity on the distribution system to serve load during outages of
6 customer-owned generation that is normally served by the customer's generation
7 facilities. Supplemental Service encompasses all other elements of service that the
8 Company provides to such a customer, including all energy which is required to
9 replace output from customer-owned generation when the customer's generation
10 facilities are unavailable.

11

12 **Q. DO YOU DIFFERENTIATE SELF-GENERATION FROM DISTRIBUTED**
13 **GENERATION?**

14 A. I do. Although in many cases distributed generation and self generation may be one
15 and the same, there can be instances in which a distributed generator is not a utility
16 customer and does not purchase retail electric service from the Company. For this
17 reason, I believe the focus of the Commission's considerations in this proceeding
18 should be on situations in which a generator is also a distribution system customer,
19 and therefore, my discussion herein uses the phrase Self-Generation ("SG") in place
20 of the term Distributed Generation ("DG") that witness Ferguson employs
21 extensively in his Direct Testimony.

22

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1 **B. National Grid's Position on Backup Rate Issues**

2

3 **Q. PLEASE DESCRIBE THE COMPANY'S POSITION IN THIS PROCEEDING**
4 **REGARDING THE STRUCTURING OF BACKUP RATES.**

5 A. National Grid's position in this proceeding is set forth in the Direct Testimony of
6 witness Lloyd. As presented in that testimony, the Company's position has three
7 basic components. First, National Grid takes no position with respect to possible
8 termination of backup service rates. Second, the Company supports a continued
9 exemption of on-site renewable generation facilities from Backup Service rates.
10 Third, National Grid submits that its costs of providing service are the same for a
11 customer with self-generation that expects backup service as for a customer that
12 has no self-generation.

13 Witness Lloyd's Direct Testimony at page 3, lines 3-6 also encourages the
14 Commission to "consider the benefits that can be provided from [Distributed
15 Generation] when determining whether or not to terminate backup service rates."

16

17 **Q. WHAT ANALYSES DOES NATIONAL GRID OFFER IN SUPPORT OF THE**
18 **REASONABLENESS OF ITS CURRENT PRICING OF BACKUP SERVICE?**

19 A. NGrid witness Lloyd offers Schedule JAL-2 which provides illustrative examples of
20 the Company's pricing of service to customers with and without requirements for
21 backup service.

22

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1 **C. TEC-RI Position on Backup Rate Issues**

2

3 **Q. HOW WOULD YOU SUMMARIZE TEC-RI'S POSITION REGARDING THE BACK-**
4 **UP RATES IN THIS PROCEEDING?**

5 **A.** Quite simply TEC-RI seeks the total elimination of National Grid's Backup Service
6 rates.

7

8 **Q. WHAT ARE THE PRIMARY RATIONALES FOR TEC-RI'S REQUEST FOR**
9 **ELIMINATION OF BACKUP SERVICE RATES?**

10 **A.** TEC-RI's primary rationales for the elimination of Backup Service Rates are
11 basically threefold:

12

13 ➤ Reductions in demand resulting from self-generation are
14 indistinguishable from reductions due to energy efficiency;

15

16 ➤ The added rate burdens from the elimination of Backup Service
17 rates that would be placed on other customers would be small;

18

19 ➤ Current Backup Service Rates are inconsistent with the intent
20 of the State's Decoupling Act, R.I.G.L. 31-1-27.7.1.

21

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1 Q. HOW DOES TEC-RI PERCEIVE THAT ENERGY EFFICIENCY AND DISTRI-
2 BUTED GENERATION ARE INDISTINGUISHABLE?

3 A. TEC-RI suggests that they are indistinguishable because each technology
4 application produces a reduction of an individual customer's demand and therefore
5 reduced revenue for RDM reconciliation purposes.
6

7 Q. DOES TEC-RI PRESENT A DETAILED ASSESMENT OF NGRID'S DISTRI-
8 BUTION SYSTEM COST TO SUPPORT ITS RECOMMENDED ELIMINATION OF
9 BACKUP SERVICE RATES?

10 A. No, it does not.
11

12 D. Evaluation of Issues
13

14 Q. IN THIS PROCEEDING WHEN WITNESSES FOR THE COMPANY AND TEC-RI
15 REFER TO THE ELIMINATION OF BACKUP SERVICE RATES, ARE THEY
16 ADDRESSING THE ELIMINATION OF CHARGES FOR SUPPLEMENTAL
17 SERVICE THAT IS PROVIDED UNDER BACKUP SERVICE RATES?

18 A. It is my understanding that the testimonies of witness Lloyd and witness Ferguson
19 are discussing the potential that the current Backup Service rate schedules B-32
20 and B-62 would be eliminated in their entirety, but service that is presently provided
21 as Supplemental Service under those rate schedules would be billed with other
22 standard service under rate schedules G-02, G-32, and G-62. It is not my

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1 perception that any party is recommending the present Supplemental Service
2 requirements be provided at no charge to the customer, and I would specifically
3 discourage the Commission from removing all charges for service requirements that
4 are presently billed under Supplemental Service rates.

5
6 **1. Response to National Grid's Position on Backup Service Rates**

7
8 **Q. DO YOU AGREE WITH THE STATEMENT OF WITNESS LLOYD AT PAGE 5,**
9 **LINES 16-18, OF HER DIRECT TESTIMONY WHICH STATES, "...THE UTILITY'S**
10 **COSTS OF OWNING AND MAINTAINING FACILITIES TO SERVE A CUSTOMER**
11 **ARE ESSENTIALLY THE SAME WHETHER THE CUSTOMER SELF-**
12 **GENERATES OR NOT..."?**

13 **A.** Not entirely. Some elements of those costs are the same, but the entirety of the
14 Company's distribution and transmission costs are not the same in each instance.
15 For an accurate assessment of this issue, the utility's costs of providing service must
16 be addressed in greater detail.

17 Certainly, the costs of the service line and the meter through which service is
18 provided remain the same whether or not the customer has self-generation
19 capabilities. It is also likely that customers having self-generation capabilities will
20 have a dedicated transformer (or transformers) for which costs would not change.
21 Moreover, if a customer having self-generation seeks backup service, the sizing of
22 the required transformer is not likely to be reduced from that which would be

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1 required if the customer had no self-generation capability. Thus, for those identified
2 elements of the facilities required to provide backup service to a customer with self-
3 generation, there would be no difference in cost from the costs of serving a similarly
4 sized customer without self-generation capability. However, a customer with self-
5 generation would be required to install separate metering for the customer-owned
6 generating facilities to provide National Grid information on the operation of the
7 customer's generation facilities.

8 On the other hand, as the examination of the costs of required facilities
9 moves upstream, away from the customer's premises (through commonly used
10 primary distribution lines, substations, sub-transmission, and transmission facilities)
11 cost differences can be identified.

12
13 **Q. AT PAGE 8, LINES 11-12, NATIONAL GRID WITNESS LLOYD SUGGESTS THAT**
14 **THE COMMISSION SHOULD "CONSIDER THE BENEFITS THAT CAN BE**
15 **PROVIDED FROM DG [DISTRIBUTED GENERATION] WHEN DETERMINING**
16 **WHETHER OR NOT TO TERMINATE BACKUP SERVICE RATES." HAS THE**
17 **COMPANY OFFERED ANY QUANTIFICATION OF SUCH BENEFITS?**

18 **A.** No. NGrid does not offer any study or other quantification of the benefits of
19 Distributed Generation on its system.

20
21 **Q. AT PAGE 10, LINES 12-15, OF WITNESS LLOYD'S DIRECT TESTIMONY, THE**
22 **COMPANY SUGGESTS THAT A COMMISSION ORDER ELIMINATING BACKUP**

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1 **SERVICE RATES OUTSIDE OF A GENERAL RATE CASE WITH NO SPECIFIC**
2 **PROVISION FOR COST RECOVERY, WILL HAVE THE EFFECT OF IMMEDI-**
3 **ATELY REDUCING THE COMPANY'S BILLED REVENUE. DO YOU AGREE?**

4 A. I would accept that, all other things being equal, billed revenue will decline.
5 However, the appropriateness of an assumption that all other things will remain
6 same when the costs of Backup Service are eliminated for customers having self-
7 generation may not be appropriate. Initially, the elimination of Backup Service
8 charges for customers having self-generation would most likely yield a windfall for
9 customers with existing non-renewable generation facilities and a reduction in billed
10 revenue for the utility, but the change in pricing may encourage greater use of utility
11 service by customers having self-generation capabilities. Such increases in the use
12 of utility service may result in increased sales of energy and capacity by the utility,
13 but those sales may not be fully cost compensatory in terms of recovery of
14 distribution system costs without a shifting of revenue requirements to other
15 customers.

16
17 Q. **DO YOU HAVE ANY CONCERNS REGARDING THE BILL COMPARISONS**
18 **PRESENTED IN WITNESS LLOYD'S SCHEDULE JAL-2?**

19 A. Yes. I have three concerns regarding the data and analyses in Schedule JAL-2.

20 First, in the summary presented on page 1 of that schedule, the dollar
21 amounts shown in column (B) under Scenario 1 appear to be incorrect and do not
22 reconcile with the supporting detail for that scenario which is presented on page 2 of

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1 Schedule JAL-2. It appears that the summary data for Scenario 1 on page 1
2 Schedule JAL-2 incorrectly referenced the results of Scenario 2. The correct Total
3 for column (B) in Scenario 1 should be \$941,575.00.

4 Second, the analyses presented for customers with self-generation under
5 both Scenario 1 and Scenario 2 improperly assume that an outage of the customer's
6 generator during a month will cause that generator to be unavailable for the entire
7 billing month. This is rarely the case. Most requirements for backup service are
8 unpredictable and not likely to coincide with the beginning of a billing period or end
9 precisely at the end of a billing period. In fact, outages of customer-owned
10 generators are more likely to be measured in terms of hours or days, not weeks or
11 months. As a result, the amount of additional kWhs the customer must purchase on
12 supplemental service may be vastly overstated. Furthermore, that overstatement of
13 supplemental energy requirements tends to overstate the total dollars for energy-
14 related charges that would be billed to the example customer when backup service
15 is required.

16 Third, the examples the Company presents presume that the customer would
17 purchase energy supply for Backup and Supplemental Service requirements at
18 Standard Offer Rates. While that may occur, the Commission should recognize that
19 such customers are free to purchase their generation service from competitive
20 energy suppliers and may find that hourly pricing alternatives for Backup and/or
21 Supplemental Service requirements available through competitive suppliers are
22 more economic alternatives. If the distribution demand portion of the example bills

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1 are considered apart from generation charges and surcharges, a more accurate
2 assessment of the differences in the pricing of service for customers with and
3 without Backup Service requirements emerges.

4 The Commission should also be aware the differences between the costs for
5 customers with and without separate pricing of Backup Service are influenced by the
6 assumed sizing of the customer's self-generation facilities. National Grid's
7 examples in Schedule JAL-2 only address scenarios where the customer's self-
8 generation would service exactly half (50%) of the customer's overall load. If that
9 assumption is varied, the costs the customer would pay with and without backup
10 service also vary. As shown in Scenario 2 in Schedule JAL-2, the costs to the
11 customer with generation sized to meet 50% of the customers load are the same
12 with or without Backup Service. However, if the customer's generator is sized to
13 serve more than 50% of the customer's load, the customer's costs with Backup
14 Service are less than the costs the customer would be billed with no Backup
15 Service. Schedule BRO-1 presents sensitivity analyses which reflect the pricing of
16 Distribution Demand (i.e., total distribution demand charges for Backup and
17 Supplemental Service) with variations in the sizing of customer-owned generation.

18
19 **Q. CAN A CUSTOMER WITH SELF- GENERATION AVOID PAYING ANY CHARGES**
20 **FOR BACKUP SERVICE?**

21 **A.** Yes. Customers who install self-generation generally have the option meeting
22 backup requirements through: (1) the installation of redundant generation facilities;

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1 (2) curtailing operations during periods that the customer's generation is unavailable;
2 and/or installing electric storage. At present, the costs of customer provided backup
3 is generally more costly than purchasing service supplied through the utility when
4 self-generation facilities are unavailable.¹ Purchasing backup service through the
5 utility allows a customer with self-generation to take advantage of the utility's
6 economies of scale and demand diversity to obtain backup generation supplies at a
7 lower cost than the customer could provide such service for itself.

8
9 **Q. IS A PROPERLY PRICED BACKUP SERVICE AN UNECONOMIC OPTION FOR**
10 **CUSTOMERS WITH SELF-GENERATION FACILITIES?**

11 A. No. The offering of Backup Service by the utility can be viewed as a tool for
12 facilitating distributed generation (or self-generation) by lowering the costs that the
13 customer would otherwise face if required to provide its own backup service.

14
15 **2. Response to the Position of TEC-RI on Backup Service Rates**

16
17 **Q. DO YOU AGREE WITH TEC-RI THAT CUSTOMERS SHOULD NOT PAY THE**
18 **SAME DISTRIBUTION CHARGES FOR PORTIONS OF THEIR SERVICE THAT**
19 **CONSTITUTE BACKUP SERVICE?**

¹ With further improvements in the costs of storage technology, the potential for customers to install distribution generation that have no backup service requirements will increase.

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1 A. In general, I do. But, I do not believe that the appropriate alternative is the complete
2 elimination of Backup Service rates. Rather, revision of the Company's Backup
3 Service charges to better reflect differences in costs of serving customers with and
4 without Backup Service requirements will produce more cost-based results while
5 improving the economics of Backup Service for customers having non-renewable
6 self-generation.

7

8 **Q. IS IT APPROPRIATE THAT A CUSTOMER THAT REDUCES DEMAND FROM**
9 **5,000 KW TO 3,000 KW USING SELF-GENERATION BE REQUIRED TO**
10 **CONTINUE TO PAY FOR 5,000 KW OF DEMAND?**

11 A. To answer this question properly the components of the National Grid's distribution
12 and transmission system must be examined in greater detail. As long as the
13 customer maintains the **potential** to impose a 5,000 kW demand on the system, the
14 attributes and costs of the portions of the Company's distribution system that are
15 dedicated to serving the customer (i.e., the meter(s), service line, and often the
16 transformer) do not change. However, the costs of commonly used upstream
17 facilities (e.g., primary distribution lines, substations, and transmission facilities) may
18 be reduced. In the implementation of the Public Utilities Regulatory Policies Act of
19 1978 ("PURPA"), it was widely recognized that it is not appropriate to assume that
20 the backup (or emergency) service requirements of non-utility-owned generation
21 should be assessed at 100% of the nameplate ratings of such facilities. Rather, due
22 to the somewhat random and relatively infrequent nature of outages for such

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1 generators and the generally limited duration of such outages, it is inappropriate to
2 assume that outages of non-utility generators would be 100% coincident with utility
3 system peak demands. That basic principle is also appropriately applied in the
4 structuring of Backup Service rates for customer-owned distributed generation.

5
6 **Q. IS WITNESS FERGUSON'S ASSESSMENT OF THE DIFFERENCES BETWEEN**
7 **THE TREATMENT OF SELF-GENERATION CUSTOMERS AND CUSTOMERS**
8 **WHO REDUCE LOAD DUE TO ENERGY EFFICIENCY OR CUT BACKS IN**
9 **PRODUCTION UNDER NATIONAL GRID'S CURRENT RATES ACCURATE?**

10 **A.** No. Witness Ferguson's testimony attempts to portray all three situations as if they
11 represent permanent reductions in system load. That may or may not be true for
12 customers who make energy efficiency improvements or cut back production. It
13 certainly is not true for a customer with self-generation who requires backup service.
14 A customer who has self-generation and requires backup service will necessarily
15 place higher demands on the system when outages of the customer's generation
16 facilities occur. Therefore, National Grid must maintain sufficiently sized facilities to
17 serve those demands. However, given the difficulties in predicting outages of
18 customer-owned generation facilities, the precise impacts of such outages on
19 NGrid's distribution costs cannot be determined on an *a priori* basis.

20 Additionally, when a customer elects to cut back production or employ energy
21 efficiency measures, those measures only provide the customer savings in demand-
22 related costs to the extent that they continue to provide reductions in energy use

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1 over time. If a customer who cut back production subsequently restores all or a
2 portion of that cut back, the customer will pay ratcheted demand charges for the
3 month in which the cut back is restored and for each of the next eleven (11) months.

4 Likewise, energy efficiency measures are only beneficial in reducing a customer's
5 demand charges to the extent that energy efficiency-related demand reductions are
6 maintained over time. If any portion of an energy-efficiency-related demand reduc-
7 tion is not maintained over time, the portion that is not maintained is also subject to
8 demand ratchets.

9
10 **Q. ARE THERE OTHER METHODS FOR PROVIDING INCENTIVES FOR SELF-**
11 **GENERATION?**

12 **A.** Yes. To the extent specific Distributed Generation projects provide improved energy
13 efficiency, those projects could be funded using revenues collected through the
14 Company's Energy Efficiency Surcharge.

15
16 **Q. IS THE PURPOSE OF REVENUE DECOUPLING TO ALLOW THE COMPANY TO**
17 **SIMPLY SHIFT COST RESPONSIBILITIES AMONG CUSTOMERS AND RATE**
18 **CLASSES WITHOUT REGARD TO COST CAUSATION?**

19 **A.** No. Whether such shifts of cost responsibilities among classes occur will depend on
20 the manner in which rates and revenue decoupling mechanisms are designed.²

² The design of an electric revenue decoupling mechanism for NGrid is a matter presently being litigated in Docket No. 4206, and will not be addressed in depth in this testimony.

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1 Revenue decoupling is only intended to ensure the Company's recovery of an
2 authorized level of revenue. Nowhere is it stated that revenue decoupling is
3 intended to shift cost responsibilities among classes or among customers within
4 classes. If reductions in usage are not accompanied by reductions in cost respon-
5 sibilities, it is the responsibility of the Company and the Commission to ensure that
6 applicable rates and ratemaking policies recognize actual cost causation and
7 reasonably distribute the responsibilities for such costs among rate classes and
8 among customers within each class of service.

9
10 **Q. AT PAGE 16 OF WITNESS FERGUSON'S DIRECT TESTIMONY HE SUGGESTS**
11 **THAT DISTRIBUTED GENERATION REDUCES ELECTRICITY DEMAND. DO**
12 **YOU AGREE?**

13 **A.** No, I do not. Distributed Generation may change the source of supply for electricity,
14 but it does not necessarily reduce the overall electricity demand. Furthermore,
15 distributed generation only serves to reduce dependence on fossil fuels where such
16 generation is derived from renewable sources of generation or through the utilization
17 of combined heat and power systems. A blanket acceptance of all distributed
18 generation as providing increased energy efficiency is not warranted. In fact, a
19 significant number of distributed generation facilities in the U.S. employ reciprocating
20 engines which often utilize diesel fuel as their primary fuel input.

21

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1 **Q. DO YOU HAVE ANY COMMENTS REGARDING WITNESS FERGUSON'S**
2 **ASSESSMENT OF THE RATE IMPACTS OF ELIMINATING THE COMPANY'S**
3 **BACKUP SERVICE CHARGES?**

4 A. Yes, I do. Witness Ferguson's assessment of the impacts of eliminating Backup
5 Service charges is premised on the Commission's adoption of National Grid's
6 proposal for the structuring of an electric RDM. That proposal is still subject to
7 litigation in Docket No. 4206 and is not supported by the Division. The Division has
8 proposed an alternative approach for computing electric RDM factors that would
9 involve the establishment of class-specific RDM factors. Under the Division's
10 proposal in Docket No. 4206 revenue lost from the elimination of Backup Service
11 rates would remain the responsibility of customers in the C&I rate classes to which
12 the usage of current Backup Service customers is shifted. In that context, I doubt if
13 TEC-RI would find its proposed elimination of Backup Service rates as attractive
14 since revenue lost due to the elimination of Backup Service rates would not be
15 redistributed to residential, small commercial and street lighting service customers.

16 Furthermore, if the Commission does elect to eliminate Backup Service rates,
17 and also adopts the Division's proposed electric RDM, I would expect that there
18 would be no reallocation of cost responsibilities among rate classes until the class
19 costs of service are re-evaluated in the Company's next base rate case.

20

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1 **D. Division Recommendations**

2

3 **Q. DOES THE DIVISION SUPPORT THE COMPLETE ELIMINATION OF BACKUP**
4 **SERVICE RATES FOR CUSTOMERS WITH NON-RENEWABLE SELF**
5 **GENERATION?**

6 A. No. The Division does believe the Company's existing Backup Service rates for
7 customers with non-renewable self-generation facilities could be reduced, and the
8 Division encourages the Commission to adopt more appropriate pricing of such
9 service. However, with appropriate adjustments to the pricing of Backup Service,
10 the elimination of NGrid's Backup Service rates is not necessary or justified.

11

12 **Q. HOW SHOULD NGRID'S RATE FOR BACKUP SERVICE BE REVISED?**

13 A. The Commission should require three changes in NGrid's Backup Service charges.
14 First, the Backup Service should be divided into two categories. Those are:

15

16 ➤ **Emergency Service:** applicable when forced outages of customer-owned
17 generation facilities are encountered; and

18

19 ➤ **Scheduled Maintenance Service:** applicable when customers schedule
20 maintenance outages of generation equipment at times when the Company,
21 in its sole discretion, assesses it can provide additional power without
22 incurring requirements for additional distribution system capacity.

23

24 Second, the Commission should establish pricing for Emergency Service in a
25 manner which reflects the anticipation of substantial diversity in the timing of such

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1 requirements from its distribution system peak demands on commonly used
2 distribution facilities through the application of a coincidence factor.

3 Third, the Commission should allow that Scheduled Maintenance Service be
4 provided without the payment of additional demand charges.

5 Through the combination of these changes, the Division believes that
6 customers with non-renewable self-generation facilities will be able to receive
7 noticeable cost-based reductions in billed charges for Backup Service without
8 introducing a need for additional rate subsidies.

9
10 **Q. HOW SHOULD THE LEVEL OF THE "COINCIDENCE FACTOR" USED IN**
11 **BILLING EMERGENCY BACKUP SERVICE BE DETERMINED?**

12 A. Generating unit availability for small sized (i.e., three MW or less) distributed
13 generation facilities is typically in the range of 90% or greater, and Forced Outage
14 Factors for such facilities are generally below 5.0%.³ Assuming that forced
15 (unplanned) outages of customer owned generation are random in nature, the
16 likelihood of an outage of a customer-owned generator coinciding with distribution
17 system peak requirements for National Grid appears small. Thus, the expected
18 contribution of Backup Service requirements for any individual customer with self-
19 generation capabilities is significantly less than the full capacity of the customer's
20 generator. For this reason, I recommend the initial use of a coincidence factor of not

³ See "Distributed Generation Operational Reliability and Availability Database: Executive Summary Report," prepared for Oak Ridge National Laboratory by Energy and Environmental Analysis, Inc., Arlington, VA, January 2004.

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1 greater than 10% for backup service requirements associated with customer-owned
2 generation. I also recommend that the Commission require National Grid to collect
3 data that will enable it to assess the actual coincidence of Backup Service
4 requirements on its system with its distribution system peaks and at least once
5 every three years provide an assessment of the appropriateness of the coincidence
6 factor used in computing Backup Service charges.

7
8 **Q. HOW SHOULD THE COMPANY'S TARIFFS BE AMENDED TO IMPLEMENT**
9 **YOUR RECOMMENDATED APPROACH TO PRICING BACKUP SERVICE?**

10 A. The provisions of the B-32 and B-62 relating to paragraph b) "Determination of
11 Backup Service Kilowatt Demand" under the section titled "BACKUP RETAIL
12 DELIVERY SERVICE" will need to be revised to provide for the consideration of the
13 "coincidence factor" discussed herein. More specifically, that paragraph should be
14 revised as follows:

15
16 *The Backup Service Demand shall equal the product of multiplying the*
17 *Backup Service Coincidence Factor by the greater of 1) the fifteen-*
18 *minute reading from the Customer's generations meter(s) as*
19 *measured in kilowatts or 2) 90% of the fifteen-minute reading from the*
20 *Customer's generation meter(s) as measured in kilovolt-amperes at*
21 *the time of the Billing Demand. The Backup Service Coincidence*
22 *Factor shall be set at 10% until such time as the Commission finds it*
23 *appropriate to re-set the level of that factor based on the Company's*
24 *actual experience with the provision of Backup Service.*
25

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1 Also, the Commission should require modification the Company's Backup
2 Service Tariffs to reflect the recommended elimination of demand charges for
3 Scheduled Maintenance Service. To implement this change, I recommend that the
4 following paragraph be added to the sections of the Company's B-32 and B-62 tariffs
5 for Backup Retail Delivery Service:

6
7 **e) Scheduled Maintenance Service**
8

9 *Scheduled Maintenance Service will be provided with no applicable*
10 *demand charges where the customer schedules an outage of its*
11 *generation facilities for maintenance purposes with the Company and*
12 *the Company in its sole discretion assesses that it can serve the*
13 *Customer's Schedule Maintenance Service requirements in addition to*
14 *other firm customer load without jeopardizing the reliability of service*
15 *to other customers and without increasing its need for the installation*
16 *of additional capacity.*
17

18 **Q. IF BACKUP SERVICE IS PROPERLY PRICED, DO YOU BELIEVE THAT THERE**
19 **WOULD REMAIN A NEED FOR FURTHER INCENTIVES FOR CUSTOMER'S TO**
20 **UTILIZE SELF-GENERATION OPTIONS?**

21 **A.** No, I do not. Incentives for self-generation can be provided simply by more cost-
22 based pricing of Backup Service, and in doing so the perceived need for additional
23 subsidies for non-renewable distributed generators can be eliminated.

24
25 **Q. IF THE COMMISSION SHOULD ELECT TO ELIMINATE CHARGES FOR**
26 **BACKUP SERVICE, WOULD ANY CHANGES TO THE COMPANY'S G-02, G-32**
27 **AND G-62 TARIFFS BE REQUIRED?**

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1 A. Yes. At present the National Grid tariffs reference the Company's backup service
2 tariff for requirements for the installation of metering on customer-owned generation.
3 If Backup Service Rates are eliminated, requirements for "Installation of Meters on
4 Generation" presently found in the Company's Backup Service tariff will need to be
5 incorporated in the G-02, G-32, and G-62 tariffs to ensure that National Grid
6 continues to have access to information regarding the operation of customer-owned
7 generation facilities.

8

9 **Q. GIVEN THE REDUCTIONS THAT YOU PROPOSE IN DEMAND CHARGES FOR**
10 **BACKUP SERVICE, IS THERE A SUBSTANTIAL DIFFERENCE BETWEEN**
11 **YOUR RECOMMENDATIONS AND TEC-RI'S PROPOSAL FOR ELIMINATING**
12 **BACKUP SERVICE REQUIREMENTS?**

13 A. Yes, there is. The Division's proposal would actually impose lower costs on most
14 customers with self-generation than would an elimination of Backup Service rates.
15 As shown in Schedule BRO-1, the Division proposal presented herein yields **lower**
16 **annual costs** than the elimination of Backup Service rates for customers with self-
17 generation when they have self-generation capacity equal to or greater than 28% of
18 their total electric demand requirements. For customer with smaller percentages of
19 self-generation capacity and/or no outages of customer-owned generation, annual
20 distribution demand charges are never more than 10% greater than the charges
21 such customers would pay if current Backup Service Rates are terminated.
22 Likewise, the Division's proposal yields total distribution demand charges that are in

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1 all cases noticeably less expensive than sum of the Company's current Backup and
2 Supplemental demand charges for the same level of service.

3 Furthermore, the Division's proposed provisions for Schedule Maintenance
4 Service would allow a customer with self-generation to perform scheduled
5 maintenance activities during hours classified by the tariff as "peak hours"⁴ without
6 incurring additional billing demands and without exposing the customer to ratcheted
7 demand charges for the subsequent 11 months.⁵ These savings, which are not
8 quantified in Schedule BRO-1, could be as important in dollar terms for customers
9 with self-generation as the reductions proposed in Backup Service demand charges.

10 The ability to schedule maintenance activities during "peak hours" without exposure
11 to increased demand charges would also provided an added measure of
12 convenience, and potential cost savings, for customers with self-generation since
13 greater portions of such work could be performed during normal work hours.

14 In addition, the changes in Backup Service rates that I propose have more
15 direct foundation in the Company's costs of providing service and thereby minimize
16 the need for additional cross-subsidies among customers and rate classes. The
17 Division's proposal also provides a basis for pricing all Backup Service for
18 renewable generation projects, including those in excess of 3.0 MW (or other
19 threshold that may be determined) that are not exempted from Backup Service

⁴ It is expected that the utility would limit the scheduling of maintenance activities for customer-owned generation such that the "peak hours" in which maintenance activities are permitted would not be expected to coincide with peak requirements for commonly used distribution system facilities.

⁵ Under the Division's proposals demands recorded during scheduled maintenance hours would not be included in determinations of either monthly billing demand or ratcheted billing demands.

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1 charges. Also, it should be expected that as renewable generation goals are
2 achieved, such generation will become more embedded the State's generation mix
3 and intertwined with conventional generation.⁶ When that occurs, a continuation of
4 the current exemption from Backup Service charges for renewable generation may
5 no long be appropriate. At that point, the pricing structure I propose herein could be
6 extended to provide cost-based backup service for those facilities.

7

8 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

9 **A.** Yes, it does.

⁶ Newly emerging technologies that are seeking to better integrate conventional and renewable generation through a single system can be expected to raise questions regarding the portion of the Backup Service requirements for such a facility that would be exempted from Backup Service rates.

National Grid - Electric Backup Rates

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**Sensitivity Analysis: Billed Distribution Demand Charges* For Customers
With Varying Percentages of Self Generation**

National Grid Scenario 1 *(No Outages of Customer-Owned Generation)*

<u>Self-Generation As% of Total Capacity Requirements</u>	<u>Current B-62 Billing for Customer With Generation</u>	<u>G-62 Billing for Customer With Generation</u>	<u>Division Proposal</u>
0%	\$ 102,960.00	\$ 102,960.00	\$ 102,960.00
20%	\$ 102,960.00	\$ 82,368.00	\$ 84,427.20
40%	\$ 102,960.00	\$ 61,776.00	\$ 65,894.40
50%	\$ 102,960.00	\$ 51,480.00	\$ 56,628.00
60%	\$ 102,960.00	\$ 41,184.00	\$ 47,361.60
80%	\$ 102,960.00	\$ 20,592.00	\$ 28,828.80
100%	\$ 102,960.00	\$ -	\$ 10,296.00

National Grid Scenario 2 *(Outage of Customer-Owned Generation in First Month)*

<u>Self-Generation As% of Total Capacity Requirements</u>	<u>Current B-62 Billing for Customer With Generation</u>	<u>G-62 Billing for Customer With Generation</u>	<u>Division Proposal</u>
0%	\$ 102,960.00	\$ 102,960.00	\$ 102,960.00
20%	\$ 102,960.00	\$ 79,365.00	\$ 85,971.60
40%	\$ 102,960.00	\$ 79,365.00	\$ 68,983.20
50%	\$ 102,960.00	\$ 79,365.00	\$ 60,489.00
60%	\$ 102,960.00	\$ 79,365.00	\$ 51,994.80
80%	\$ 102,960.00	\$ 79,365.00	\$ 35,006.40
100%	\$ 102,960.00	\$ 79,365.00	\$ 18,018.00

* Billed Distribution Demand Charges represent totals of demand charges for Backup and Supplemental Service.