
Vectren would like to thank the Staff Subcommittee on Rate Design for providing stakeholders the opportunity to submit comments on the Draft Distributed Energy Resource (“DER”) Compensation Manual, and for the efforts made by the Staff Subcommittee, including the public town hall meeting held on July 23, 2016 at the NARUC Summer Committee Meetings, to facilitate a dialogue examining the issue of rate design and DERs.

It is important, and Vectren recommends, that the manual, preferably in the introductory comments, address the question: “How did we get here?” At its inception, Net Energy Metering (“NEM”) was implemented in response to policy aimed at facilitating the increased installation of DERs, primarily distributed solar. Utilities established NEM as a rather simplistic mechanism which satisfied this policy objective at a minimal cost. As the draft manual accurately states on page 41, “Net Energy Metering is the simplest and least costly method to implement a compensation methodology for DER.” However, at the time DERs began to develop, utility sales growth continued to fund new investment, the price signals sent through rates and NEM were ignored, and the focus rested primarily on policy implementation. In today’s utility operating landscape, in which average use per customer is now decreasing due to a multitude of factors, including increased penetration of DERs, establishing rates and/or DER compensation levels that convey appropriate price signals that reflect the nature of the underlying cost to serve and the cost of the product/service consumed is critical and should be addressed.

The draft manual is “intended to assist jurisdictions in developing policies related to DER compensation” and “to provide regulators with possible options that a jurisdiction may want to consider.” While the compensation levels provided to DER have triggered this discussion and the creation of the manual, it is important that the conversation evolves into a broad evaluation beyond DER compensation levels and to one examining changing rate structures for all customers with the goal of sending appropriate price signals that create a level playing field for all technologies and energy efficiency, encourage customers to use electricity more efficiently, reduce peak demands on utility systems, and move toward eliminating intra- and inter-class subsidies. In other words, appropriate rate design generally should be considered a pre-requisite for appropriate DER compensation.

Rates send appropriate price signals when they accurately portray the fixed or variable nature of utility costs, and thus the value of a kWh saved through energy efficiency/conservation or produced by customer owned DERs. The draft manual appropriately raises the issue of whether and which utility costs should be considered fixed or variable. As stated on page 55 of the draft manual, “understanding and identifying what are “fixed costs” is a key component to determining compensation to DERs.” Recovering fixed costs through volumetric rates fails to send customers a price signal that reflects the nature of the costs incurred by utilities to provide service. Ideally, rates should, where possible, be unbundled to appropriately demonstrate the fixed/variable nature of costs - perhaps by utility function. Fixed capacity related charges are appropriately recovered through the use of demand charges based on the level of customer coincident or non-coincident peak demand. When limited by metering constraints, these capacity-related charges should be recovered through a fixed charge rate component.
Volumetric charges should recover the variable costs of producing energy. Contrary to the beliefs of some, this type of fixed/variable pricing arrangement is not new to customers. There are a variety of industries that provide service to customers using this type of pricing arrangement including telephone, cable, and internet services. It should be noted that, in most instances, Rural Electric Membership Cooperatives, which, in Indiana, set their rates through a board/membership process, choose to utilize a rate structure with a higher fixed customer charge, more reflective of fixed/variable pricing. It is also important that the manual not support the related and common misconception that time varying rates are a valid alternative to fixed/variable pricing or the use of three part rate designs. Time of Use ("TOU") rates are capable of reflecting variations in the price of energy, but fixed, capacity-related costs do not vary once investments are placed into service. Another common fixed/variable cost debate is the appropriate time horizon to be used when establishing rates. Economic theory suggests that all costs are variable in the long run, and many stakeholders involved in this discussion support this view; however, utility rates are set in the short run based on a snapshot of the current cost to serve. Changing customer usage patterns and service requirements can cause significant impacts to both the utility and to other customers in the short term. While utilities are able to manage the effects of declining use per customer through rate cases, a greater concern is the equity issue of intra-class subsidies caused by declining use per customer as a result of flawed rate design/compensation levels.

Modifying rate structures will always impact customers within the same rate class differently. Some customers will see bill increases while others will experience decreases. As appropriately stated in the manual on page 28, “there have always been winners and losers in rate design.” There are cost/benefit reasons for this. It would be entirely cost-prohibitive to calculate the cost to serve each customer and bill them accordingly. Utilities group customers with similar characteristics into separate rate classes and rates are designed based on class averages. The result is that customers whose usage deviates above or below the class average will be impacted differently by any rate design, absent recovery of 100% of the utility’s costs via a fixed charge. One advantage of moving to a straight fixed variable rate design is that these customer impacts can be diminished by making incremental changes over time in accordance with the often-cited ratemaking principle of gradualism.

Finally, the manual should also properly reflect the value the electric grid provides to DERs and the potential for increased utility investment to integrate higher levels of DERs on the utility’s system. An indisputable characteristic of DERs is that they are intermittent resources, leaving DER-owning customers reliant upon the electric grid for their electricity needs when their resources are not producing energy. Utilities are obligated to provide service to customers within their service territories at all times and at desired service levels. This obligation means the utility must maintain adequate equipment to serve all customers’ - including DER customers’ peak demands; which for Residential customers typically occur mid-evening at a time when distributed solar panels are no longer generating energy. In addition, as seen in states with higher levels of DER penetration, utilities are subject to significant investment in distribution equipment in order to accommodate energy that is exported to the grid when DER production exceeds the customer’s on-site consumption and in peaking generation to
meet the late afternoon/early evening ramp up in electricity demand that occurs when solar generation is reduced.

Another technical aspect of this issue is that DERs fail to meet the initial demand requirements associated with some common and highly relied upon household appliances. Generally, for a DER installation sized to meet 100% of a home’s annual net energy consumption, a fully functioning installation will only meet around half of the initial 5 to 8 second kW current to start the compressor motor of an air conditioner or heat pump. This “start-up” or “in-rush current” must be taken into account when designing and building the grid’s distribution system. Without the grid’s kW current support, the home would require comparable batteries to provide the DERs kW current shortfall. Without some form of kW current support for those 5 to 8 seconds, the compressor motor and other large appliances in the home will likely not operate properly and will fail prematurely.

**Specific Items/Edit Recommendations**

In addition to the general summary comments above, Vectren provides the following specific edits and recommendations (with suggested language changes in boldface print):

**Page 9 – Paragraph 2**

“A decreasing or declining block rate ("DBR") structure is designed to charge customers a lower per unit rate as the customer’s usage increases within a billing cycle. DBRs are still sometimes used to reflect decreasing fixed costs as output increases; a higher initial rate would recover initial fixed costs, and rates would decrease over the blocks as the rate reflects more variable costs. However, by lowering the savings potential, DBRs discourage conservation, energy efficiency, and customer adoption of technologies that may reduce consumption or otherwise reflect costs.”

This paragraph should be revised to clarify that fixed costs don’t actually decrease, but the amount of fixed costs per unit recovered in the upper rate tiers declines. “**Recognizing that fixed costs do not change**, DBR’s are still sometimes used to reflect decreasing fixed costs **per unit** as output increases;...”

**Page 9, Paragraph 3, Line 1**

“Time variant rates are designed to recognize differences in a utility’s cost of service and marginal costs at varying times during the day.”

This sentence should read “Time variant rates are designed to recognize differences in a utility’s cost of service, **both fixed and variable**, and marginal costs at varying times during the day”

**Page 12, Paragraph 1, Line 3**
“Decoupling eliminates revenue fluctuation resulting from the installation of energy efficiency and demand response technology, distributed energy resources, and external factors such as weather, economic conditions, and power outages.”

This line should read “Decoupling eliminates revenue fluctuation at the utility level” In addition, a sentence should be added following line 3 stating that decoupling addresses the utility’s risk of fixed cost recovery associated with DER but does not address inherent intra-class subsidies. In fact, volumetric decoupling typically has a compounding effect on cost shifting subsidies.

Page 21, last sentence on the page

“The issues presented by DER in the current regulatory landscape primarily involve the costs that DER impose on the grid, and recovering the cost of the grid from DER customers; properly incorporating and compensating the benefits DER provide; dealing with other physical challenges that the technologies imposes on the physical grid; and ownership issues.”

Vectren would like to specifically express its agreement with this statement

Page 22, Paragraph 2 under Revenue Erosion heading, Line 2

“This netting does not necessarily reduce any of the utility’s costs, but negatively impacts its revenue collection, though the effect is different in vertically integrated jurisdictions versus restructured jurisdictions.”

The word necessarily should be removed, and “utility’s costs” should be changed to “utility’s fixed costs”

Page 23, Paragraph 1

This entire paragraph should be removed from the manual. A discussion of Return on Equity (“ROE”) should not be included in a rate design/compensation manual. Ideal rate design should be risk neutral. The manual should address cost recovery and price signals and not risk/ROE. There is similar language included in page 34 in the second paragraph; that paragraph should also be removed

Page 24, Paragraph 2

“In sum, under the traditional ratemaking model and commonly used rate design, if the utility passes its relevant threshold of DER penetration, it may face significant intra-class cost shifting and erosion of revenue in the short-run. If left unaddressed, it could face pressures in the long term that would prohibit it from recovering its sunk costs necessary to provide adequate service.”

Comment:
It is questionable whether DER penetration should be considered, as any level of DER impacts fixed cost recovery. There should also be additional language added to this paragraph acknowledging that grandfathering current DERs establishes a permanent – or at least a long-term- subsidy.

Page 24, Paragraph 4, last sentence

“In this regard, DER can act as if sizable loads are coming on and off of the system, and makes utility and RTO demand forecasting problematic.”

“utility system design” should be inserted after “utility and”, “both challenging and problematic” should be inserted after “RTO Demand forecasting”

Page 25, Paragraph 2, 3rd sentence

“On the other hand, if the regulator seeks to better integrate and identify how to address DER impacts, the regulator should first decide whether he or she is interested in using rate design options to promote DER and calculating these attendant benefits.”

This sentence should be removed as rate design should not be used to promote or discourage DERs. This sentiment should also be included in the first paragraph of page 41

Page 28, Paragraph 3, 5th sentence

“There is a strong argument to be made for changing the rate structure that applies to all customers, as sending all customers the most appropriate price signal should result in the most economically efficient outcomes related to energy consumption.”

Vectren would simply express its agreement with this statement.

Page 30, Paragraph 3, 2nd sentence

“It can also be argued that the majority or entirety of a utility’s costs are affected by the way customers utilize the service provided, making the costs variable.”

This sentence should be removed. Regardless of how customers use the service, utilities incur fixed costs.

Page 33, last paragraph, 2nd sentence

“As these costs were prudent when incurred, and are currently being recovered in rates, they are usually permitted to be recovered in rates until fully depreciated.”

The words “they are usually” should be replaced with “they should be”

Page 35, last paragraph, 6th sentence

“Energy throughput is not a good proxy for cost causation on a distribution network.”
Vectren expresses its agreement with this statement.

**Page 36, Paragraph 1, last two sentences**

“Such a charge can be developed either by creating a DER rate class or by creating a DER surcharge within a rate class. Such a charge can be fixed, equivalent to a demand charge, or variable but should be designed to just compensate the utility and keep it whole.”

**Comment:**

The idea of establishing a compensatory charge applicable to DER customers should be expanded upon. There are examples of these types of charges such as interconnection and metering charges. Establishing these types of charges is preferable to establishing a separate DG rate class. Including these examples in this discussion would be beneficial to the manual.

**Page 36, last paragraph**

“A regulator may need to determine whether it is in the best interest to all ratepayers to transition DER customers from one rate schedule to another. This is sometimes known as “Grandfathering” customers into or out of a rate scheme.”

**Comment:**

Grandfathering, while perhaps fair to early adopters of DER, permanently creates a benefit for a select few. Further waiting to address rate design simply increases the number of grandfathered customers, exacerbating subsidies paid by non-DER customers.

**Page 37, Paragraph 3, first two sentences**

“The primary arguments supporting shielding current DER customers from a change in rates/policy (possibly due to meeting a regulatory or statutory threshold) is that customers desire and expect some level of certainty when making decisions about their individual investments in DER. While individual investment decisions are personal, a regulator should consider whether the policies of the jurisdiction require/desire to use ratemaking as a policy and technology support tool.”

**Comments:**

First, should utilities expect certainty when making decisions about investments, including those that are driven by outside forces?

Second, in today’s regulatory environment, electric utilities are reacting to changing regulations, new technologies, declining average customer use, and declining natural gas and renewable energy costs. All of these factors are driving change in the industry, and at a pace that is historically unprecedented. This inevitably results in uncertainty. Customers must be made aware by utilities and DER providers that utility rates are subject to change. The manual should be very clear on this subject and should
encourage regulators to ensure that this goal is met within their jurisdictions. These statements also create confusion when compared to statements found under the Value of Resource heading on page 45. For example, on page 45, the manual states “it is important to note that the value of DER changes over time based on a variety of factors: relative location and concentration, natural gas prices, and the price of utility-scale renewables amongst other things. Consequently, setting a fixed value for a long period of time may be unwise.” It would appear from the statement found on page 45 that there is the potential for a great deal of uncertainty in valuing DERs. The manual should be consistent and reflect that utility rates, as well as, the value of DER, are subject to these same factors and setting a fixed value for DER and making any assumption of static utility rates is unwise.

Page 38, Paragraph 4, first two sentences

“Prior to the time when an investment in DER is made, customers have certain expectations regarding the rate treatment for energy exported to the grid from DERs. These expectations affect the payback time of the investment in the DER.”

Comments:

As stated above, customers should always take into consideration the possibility of future rate/rate design changes when making investments in DER. Utility rates should be designed to ensure proper price signals and efficient use of resources, not to ensure a payback for any customer investment, including DER.

Page 42, Paragraph 3, last two sentences

“Besides saving the system the cost of generating the electric energy that the customer generation offsets, customer generation also unloads the distribution system (and to some degree the transmission system), thereby reducing system losses and forestalling required expansion and/or upgrades. Proponents argue such savings to the system (and therefore to all system users), though difficult to calculate, justify granting customers the full benefit of reduced bills, including not only reduced energy costs but also any margin built into the kWh charge.”

Comment:

Unloading of the distribution system (and to some degree the transmission system) does nothing to avoid the current sunk cost and is only relevant with a material demand reduction affecting a future system design.

Pages 48 and 49 regarding demand charges

The manual should reflect that demand charges are a way to achieve appropriate cost recovery based on causation. In addition, page 49, paragraph 6, 3rd sentence, which reads, “In this way it reduces risk for the utility”, should be stricken from the draft. Again, the manual should focus on cost recovery and price signals, not subjective evaluations of rate design impacts to utility risk.
Page 53, Paragraph 4

This paragraph should be removed as it is taking too much of an advocacy position; moreover, there is in fact sufficient data related to mandatory demand charges...just not for the residential class, yet the draft makes no distinction.

Page 55, Paragraph 2, last sentence

“Understanding and identifying what are “fixed costs” is a key component to determining compensation to DER, revenue recovery for the utility, and how to best balance utility financial health and the growth of DER.”

This sentence should be revised as follows:

“Understanding and identifying what are ‘fixed costs’ is a key component to determining compensation to DER and revenue recovery for the utility; the societal benefit of utility financial health should not be dependent upon or at the mercy of, DER growth.”