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## Introduction

Clean Wisconsin appreciates the opportunity to comment on the Staff Memorandum concerning the Focus on Energy Quadrennial Planning Process IV – Phase II (Docket 5-FE-104), issued on July 7, 2022. In the Staff memorandum, Staff sought stakeholder comments on numerous topics under two separate sections titled “Priorities” and “Budgets.” Clean Wisconsin, assisted by Synapse Energy Economics, offers the following recommendations for the Commission’s consideration.

## I. PRIORITIES

### A. How Should Overall Energy Goals be Stated and Tracked?

#### *a. General comments*

The state has aggressive carbon reduction goals including 100 percent carbon-free electricity by 2050 and an economy wide emission reduction target based on the 2015 Paris Climate Accord (i.e., 26-28 percent GHG emissions reductions below 2005 levels by 2025). As Clean Wisconsin discussed in its previous comments during the Phase I process, it is important for Focus to align its performance targets and metrics with the state’s carbon reduction goal.<sup>1</sup> This means establishing targets in terms of GHG emissions reduction is most appropriate. However, establishing GHG targets would require an economy-wide analysis to determine the share of GHG reductions that should be the responsibility of the building sector, and of the building sector’s share, what portion should be assigned to Focus. Thus, Clean Wisconsin recommended that Focus use a fuel-neutral metric like MMBtu as the primary target metric until the time when the state conducts an economy-wide GHG reduction strategies and establish GHG emission reduction targets for different entities based on the study.

#### *b. Alternatives in the Staff memorandum*

The Staff memorandum offers a number of alternatives for two different sub-topics: (i) Overall Savings Goals and Specific Goals for kWhs and therms and (ii) Lifecycle vs. Annual Savings Goals. We provide our recommendations for these two sub-topics below.

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<sup>1</sup> Clean Wisconsin’s Phase I Comments (PSC REF#: 434025 in Staff’s Phase II memorandum), page 3.



### **Overall Savings Goals and Specific Goals for kWhs and therms**

For this topic, Staff outlines the following three alternatives along with several sub-alternatives under the Alternative 1.

**Alternative (Alt.) 1:** Status Quo. Establish an overall MMBtu savings goal with minimum performance requirement (MPR) thresholds for kWh and therm savings.

**Sub-Alt. A:** Status Quo. Minimum performance requirement thresholds set at 90 percent of fuel-specific goals.

**Sub-Alt. B:** Minimum performance requirement thresholds set at 80 percent of fuel-specific goals.

**Sub-Alt. C:** Minimum performance requirement thresholds set at 75 percent of fuel-specific goals.

**Sub-Alt. D:** Minimum performance requirement thresholds set at another percent consistent with the Commission's discussion.

**Sub-Alt. E:** Defer the selection of minimum performance requirement thresholds until Phase III of Quadrennial Planning Process IV.

**Alt. 2:** Establish an overall MMBtu goal without kWh and therm MPRs.

**Alt. 3:** Do not establish an overall MMBtu goal. Set kWh and therm specific goals instead.

**We recommend Alternative 1** because this option is well aligned with Clean Wisconsin's recommendation mentioned above.

**Among the sub-alternatives, we support the Sub-Alternative B or C**, which have minimum performance requirement (MPR) thresholds that are lower than the current 90 percent value. We agree with Staff's view that lower MPR values would allow Focus a greater level of flexibility to achieve its primary MMBtu targets. We believe that lowering the threshold is necessary for a number of reasons. First, as Staff discusses in its memorandum, a lower threshold would better accommodate the impacts of fluctuating gas prices on the program. Gas price fluctuation affects the economics of energy efficiency measures, which in turn affects customer adoption rates. Thus, a lower threshold would allow Focus to shift efforts to target higher-cost energy sources (including electricity) that attract more program participants. Second, a lower threshold would enable Focus to support a greater amount of beneficial electrification measures. This is because beneficial electrification can cost-effectively save fossil fuels but reduce electricity savings, making it harder to achieve kWh savings targets.

### **Lifecycle vs. Annual Savings Goals**

Under this topic, Staff outlines the following two alternatives.

**Alt. 1:** Status Quo. Maintain a four-year savings goal expressed in lifecycle savings.



**Alt. 2:** Establish a four-year savings goal based on first-year savings.

**Alternative 1** maintains the status quo of using lifecycle savings as the main energy savings goal while continuing to make first-year savings data available to the public for reporting purposes. Clean Wisconsin supports this option because the use of lifetime savings captures all expected savings and thus is more comprehensive. Further, as Staff noted, we agree that this approach “encourages the Program Administrator to deliver programs and offerings that emphasize longer-lived technologies.”<sup>2</sup> This also ensures that the benefits for program participants and for the state from energy efficiency programs are long-lived.

## **B. Time-Varying Value of Energy Efficiency and Renewable Resources**

### **a. General comments**

Focus currently uses annual values for avoided costs to estimate net benefits of its programs. This approach does not accurately capture actual benefits of the programs offered by Focus because the value of energy and capacity and the associated avoided costs vary by season and the time of a day. There are many jurisdictions that estimate time-varying avoided costs. For example, California and the New England states have been using time-varying avoided costs to evaluate their energy efficiency programs.<sup>3</sup> Time-varying avoided costs are important for avoided energy, generation capacity and transmission and distribution capacity.

### **b. Alternatives in the Staff memorandum**

Under the topic of “Time-Varying Value of Energy Efficiency and Renewable Resources Staff” Staff outlines a number of alternatives for two different sub-topics: (i) Emphasis between Energy and Demand and (ii) Time-Varying Value of Energy Efficiency and Renewable Resources. We provide our recommendations for these two sub-topics below.

#### **Emphasis between Energy and Demand**

For the first sub-topic, Staff offers two alternatives (Alternative One and Alternative Two) along with one sub-alternative for the first alternative.

**Alt. 1:** Status Quo. Establish Focus goals based on reductions in energy use and peak demand with more emphasis on energy use savings and associated emissions reductions. The Quad IV Program Administrator performance contract shall be structured to reflect this priority.

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<sup>2</sup> Staff memorandum, page 12.

<sup>3</sup> Synapse Energy Economics. n.d. “Avoided Energy Supply Costs in New England (AESC).” Available at: <https://www.synapse-energy.com/avoided-energy-supply-costs-new-england-aesc>; Energy+Environmental Economics. n.d. “Avoided Cost Calculator for Distributed Energy Resources (DER).” Available at: [https://www.ethree.com/public\\_proceedings/energy-efficiency-calculator/](https://www.ethree.com/public_proceedings/energy-efficiency-calculator/).



**Sub-Alt. A:** Direct Focus to perform additional research in Quad IV. At minimum, the objectives of this research shall be to position the program to assess strategies for enhancing programs to achieve greater demand savings and understanding the value of additional demand savings.

**Alt. 2:** Establish goals based on reductions in energy use and peak demand reduction and increase the program's emphasis on demand reduction.

Focus' program evaluation, in particular its cost-effectiveness evaluation, should take into account the value of peak load impacts from energy efficiency and renewable energy measures as well as fuel switching measures. This does not necessarily mean that Focus needs to establish a separate target metric for peak load reduction. At this point, it is not clear whether Focus should establish such a metric. Thus, we recommend the **Alternative 1**, which is to maintain the status quo. We also recommend the **Sub-Alternative A** as additional research will provide us more information about the peak reduction values for Focus' programs.

### **Time-Varying Value of Energy Efficiency and Renewable Resources**

For the second sub-topic, Staff outlines the following alternatives:

**Alt. 1:** Investigate opportunities to integrate the time-varying value of energy efficiency and renewable energy into program operations.

**Sub-Alt. A:** The Focus Delegated Commissioner shall determine the appropriate source of funds for this research at a later date.

**Sub-Alt. B:** This research shall be funded from the Quad IV Focus Evaluation contract budget.

**Sub-Alt. C:** This research shall be funded from the Quad IV EERD budget.

**Alt. 2:** Do not investigate opportunities to integrate the time-varying value of energy efficiency and renewable energy into program operations.

As we discussed at the beginning of this section, the state needs to investigate further time-varying values for Focus' programs. Thus, we recommend **Alternative 1**. Among the sub-alternatives, we recommend the **Sub-Alternative A** as it is unclear for us as to which source of funding is appropriate for this type of study.

## **C. Winter Peak Electric Period Definition**

### **a. General Comments**

Whether to develop winter peak periods is part of the discussion under Topic B as discussed above. Further, in our Quad IV Phase I comments, we discussed the importance of valuing winter peaks as part



of the discussion on winter peak demand response.<sup>4</sup> Furthermore, the commission staff noted that MISO has made a proposal to the FERC to use a seasonal capacity framework; Staff expects that if FERC accepts this proposal, seasonal resource adequacy reporting and assessment could begin in 2024. Thus, it is important to start investigating winter peak capacity values for this purpose. Lastly, as we discussed under Topic B above, evaluating the value of clean energy resources is important not only for capacity, but also for energy.

#### ***b. Alternatives in the Staff memorandum***

Staff outlines the following two alternatives regarding winter electric peak.

**Alt 1:** Adopt a winter electric peak period definition and begin quantifying and tracking winter electric peak savings.

**Alt. 2:** Do not adopt a winter electric peak period definition.

Based on our discussion in the previous sub-section, we recommend **Alternative 1**. However, we further recommend that this should not only include capacity savings during winter peak hours, but also energy savings at different time periods and seasons.

### **D. Peak Natural Gas**

#### ***a. General comments***

Time-differentiated values for natural gas savings are becoming increasingly important for evaluating avoided natural gas costs for clean energy measures, including beneficial electrification, for a number of reasons. First, more local opposition has made it increasingly difficult to build new gas infrastructure. This opposition is driven by concerns about environmental and health impacts of gas production, delivery, and consumption, including methane leaks. Second, measuring savings during the winter peak period is vital to accurately value the benefits of beneficial electrification in the building sector.

Staff noted that the Energy Trust of Oregon has estimated the value of peak gas reductions. While it is not common for natural gas efficiency programs to use winter peak avoided costs, we are also aware of several other jurisdictions that are valuing winter peak gas savings, including the New England states, New York, and Iowa. In New York, ConEdison assesses gas peak capacity reductions using a \$/Dth/day metric.<sup>5</sup> ConEdison's Gas Benefit-Cost Analysis (BCA) Handbook describes the use of different time periods for estimating avoided gas commodity costs, depending on the type of end-use measures.

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<sup>4</sup> Clean Wisconsin Phase I comments, page 12

<sup>5</sup> ConEdison. 2020. *Gas Benefit-Cost Analysis Handbook*. (Attachment A to Con Edison's Sep 15, 2020 filing) Available at: <https://documents.dps.ny.gov/public/MatterManagement/CaseMaster.aspx?MatterCaseNo=19-G-0066> or <https://documents.dps.ny.gov/public/MatterManagement/CaseMaster.aspx?MatterCaseNo=19-G-0066>.



In New England, the regional Avoided Energy Supply Component (AESC) study has been developing detailed avoided costs for the region, including for gas. The long-standing approach for avoided gas is to estimate different avoided costs by end-use type (e.g., space heating, water heating), which takes into account the end-use load shapes and time-varying natural gas prices. The study also estimates avoided gas costs for various cost periods including baseload, winter/shoulder, winter, top 90 days, top 30 days, and top 10 days.<sup>6</sup>

In Iowa, MidAmerican is including avoided gas distribution capacity costs, which reflect peak period deliveries, as part of the avoided gas cost methodology for its energy efficiency programs.<sup>7</sup>

**b. Alternatives in the Staff memorandum**

Staff outlines the following two alternatives regarding peak natural gas along with two sub-alternatives under the alternative 1.

**Alt. 1:** Adopt a winter natural gas peak period definition and begin quantifying and tracking winter natural gas peak demand savings.

**Sub-Alt. A:** Evaluation Working Group (EWG) shall investigate and develop recommendations to quantify avoided cost benefits from peak natural gas savings.

**Sub-Alt. B:** Investor-owned utilities (IOUs) shall coordinate with Commission staff and the Focus Evaluator to submit peak natural gas avoided costs in support of evaluating cost-effectiveness of Focus

**Alt. 2:** Do not adopt a winter natural gas peak period definition.

We recommend **Alternative 1** based on our discussion in the previous section. We propose a **modified Sub-Alternative A**, that an outside entity, such as Regulatory Assistance Project (RAP), conducts the research and develops recommendations.

**E. Emphasis between Business and Residential Programs (PR)**

**a. General Comments**

Since Quadrennial II, Focus has allocated approximately 60 percent of its budget to business customer classes, with the remaining 40 percent going to residential. Staff states that this funding allocation is

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The calculation of electricity impacts from CHP is consistent with the methodologies as used in the Electric BCA Handbook.

<sup>6</sup> Synapse Energy Economics, et al. 2021. *Avoided Energy Supply Components in New England: 2021 Report*. page 336 to 350. Available at: <https://www.synapse-energy.com/project/aesc-2021-materials>.

<sup>7</sup> MidAmerican. 2021. Exhibit F - Detailed Cost Benefit Results\_2057417\_210429-133012. filed on April 29, 2021. Docket EEP-2018-0002.



consistent with the proportion each customer class pays into the program. Staff goes on to discuss the results of the *2021 EE Potential Study*,<sup>8</sup> which concluded that while residential savings are likely to decline, they will still be cost effective at the current allocation.<sup>9</sup> In addition, it is important to note that the *2021 EE Potential Study* used the modified total resource cost test, which is limited in its scope. This implies that if the scope of benefits is expanded in the cost-effectiveness test (e.g., adding low-income customer specific benefits or participants' non-energy benefits), we would find a greater number of benefits. We will discuss cost effectiveness tests in more detail in sub-sections G and H under the Priorities section.

**b. Alternatives in the Staff memorandum**

The staff memorandum outlines two alternatives for allocating Focus fundings between its business and residential program participants. These include:

**Alt. 1:** Status Quo. Allocate 60 percent of Focus funding to business program ratepayers and 40 percent to residential program ratepayers.

**Alt. 2:** Choose a different formula for allocating Focus funding to business and residential programs based on revised priorities.

We support **Alternative 1**. There does not appear to be reason to advocate for a different allocation method, and the real benefits for residential programs are likely to be greater than is projected.

**F. Resource Acquisition and Market Transformation**

**a. General Comments**

As noted by Staff in its Phase II memorandum, market transformation initiatives “seek to overcome barriers to adoption for targeted markets in support of increased market shares of energy efficiency and renewable resources products and services.”<sup>10</sup> We believe that Focus is best positioned to promote market transformation initiatives among entities in Wisconsin because of its service coverage across the state and the fact that market transformation activities necessarily cover markets that cross individual utility boundaries.

As Staff noted, greater emphasis on market transformation activities may mean less funding is available to achieve energy savings in the near-term.<sup>11</sup> However, market transformation activities are important for developing the foundation for growing new energy efficiency markets for certain end-use measures

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<sup>8</sup> Cadmus. 2021. *2021 Focus on Energy Efficiency Potential Study Report*.

<sup>9</sup> Staff memorandum, page 43.

<sup>10</sup> Staff memorandum, page 52.

<sup>11</sup> Staff memorandum, page 52.



and such activities would allow Focus to attain a greater amount of energy and emissions savings in the long-term. A case in point is the market for cold climate heat pumps. There are still many contractors and other trade allies who are not familiar with this technology. Many distributors and retailers keep a very small inventory for such technologies. Thus, in order to grow the market, Focus should engage in market transformation activities in this area in addition to simply providing financial incentives.

A 2018 Market Transformation Summit recommends the following market transformation initiatives that seek long-term market impacts.<sup>12</sup>

- Code-compliance initiative
- Residential HVAC quality install
- ENERGY STAR Retail Products Platform
- Commercial benchmarking and transparency initiatives
- Strategic energy management programs
- Building Operator Certification program

We recommend that Focus implement these initiatives or enhance existing ones (if Focus already has it in place, e.g., Strategy energy management programs).

Lastly, Focus should ramp up its midstream incentive programs. In its Phase II memorandum, Staff noted appropriately that midstream incentive programs have characteristics of both resource acquisition and market transformation.<sup>13</sup> Midstream programs not only produce tangible energy and emissions savings immediately but also encourage distributors to increasingly stock energy efficient equipment as a standard practice, thereby transforming the markets. Midstream incentive programs achieve these outcomes without taking funding away from resource acquisition activities.

#### ***b. Alternatives in the Staff memorandum***

Staff outlines the following two alternatives regarding the balance between resource acquisition and market transformation initiatives.

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<sup>12</sup> Harris, Jan. 2018. "Market transformation: Moving beyond traditional energy efficiency programs to cement change." Available at: <https://www.utilitydive.com/news/market-transformation-moving-beyond-traditional-energy-efficiency-programs/557985/>; Navigant. 2019. *Energy Efficiency Market Transformation Summit Report*. Available at: <https://s3.amazonaws.com/ilsag/market-transformation-summit-report-navigant-feb-2019.pdf>.

<sup>13</sup> Staff memorandum. Page 49.





**Alt. 1:** Continue emphasizing near-term savings and prioritizing program designs that simultaneously achieve near-term savings while targeting long-term market changes.

**Alt. 2:** Continue emphasizing near-term savings but increase the program’s emphasis on market transformation by identifying ways to adapt Focus’ existing portfolio to achieve long-term market effects. The Focus Evaluator shall report on progress to adapt existing portfolio activities to achieve long-term market effects.

**Sub-Alt. A:** Direct Commission staff to propose a heat pump adoption target in Phase III of Quad IV Planning.

**Sub-Alt. B:** Direct the Focus Evaluator to develop an assessment of the Focus’ market transformation potential in coordination with the Program Administrator and Commission staff.

As we stated in the previous section, Focus should expand market transformation activities. Thus, we recommend **Alternative 2**.

Alternative 2 has two sub-alternatives. **We support both sub-alternatives.** Regarding **Sub-Alternative A**, it is important to set targets for heat pumps because heat pumps are one of the most important technologies for achieving building decarbonization. Knowing the adoption rate by setting the targets would help us assess its progress toward the state’s building decarbonization goals and facilitate course-correction if needed. Thus, a growing number of jurisdictions including Maine, New York, and California have adopted and are successfully implementing heat pump targets.<sup>14</sup> We want to note that heat pump adoption for rural homes currently using propane is ineligible for incentives, resulting in a significant gap in incentives for rural customers and a barrier in achieving Wisconsin’s decarbonization goals.

Regarding the **Sub-Alternative B**, we believe a market transformation potential study would identify which strategies would be more effective and cost-effective for transforming energy markets.

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<sup>14</sup> State of Maine Office of Governor Janet T. Mills. 2021. “Governor Mills: A major milestone towards my target of installing 100,000 new heat pumps by 2025.” Available at: [https://www.maine.gov/governor/mills/news/radio\\_address/governor-mills-major-milestone-towards-my-target-installing-100000-new-heat](https://www.maine.gov/governor/mills/news/radio_address/governor-mills-major-milestone-towards-my-target-installing-100000-new-heat); NRDC. 2022. “CA Building Decarbonization: What’s Coming in 2022?” Available at: <https://www.nrdc.org/experts/kiki-velez/ca-building-decarbonization-whats-coming-2022>; S&P Global. 2022. “NY governor unveils plan to electrify homes, achieve zero-emissions construction.” Available at: <https://www.spglobal.com/commodityinsights/en/market-insights/latest-news/electric-power/010622-ny-governor-unveils-plan-to-electrify-homes-achieve-zero-emissions-construction>.



## **G. Cost Effectiveness Decisions**

### ***a. General Comments***

In this section Staff outlined the decisions made by the Commission with regard to cost-effectiveness testing. The most important decision is to administer cost-effectiveness thresholds at the portfolio level. The remaining decisions are directives for the Commission to review and determine which cost-effectiveness test(s) to require and which inputs should be included in each cost-effectiveness test.

### ***b. Alternatives in the Staff memorandum***

There are no alternatives presented in this section.

## **H. Primary and Secondary Cost-Effectiveness Tests**

### ***a. General Comments***

In Section H of the Phase II Memorandum, Staff discussed the various types of cost-effectiveness tests, the Commission's prior approaches to assessing cost-effectiveness, practices in other states for assessing cost-effectiveness, and finally multiple alternatives for how the Commission could move forward with choosing a primary cost-effectiveness test. Staff stated in the prior section that cost-effectiveness will be assessed at the portfolio-level, but that it had yet to determine which cost-effectiveness test will serve as the primary test. We appreciate the comprehensive summary provided by staff, because choosing a primary cost-effectiveness test that fits well with the goals of the state and Commission is an essential step in delivering a successful energy efficiency program.

Within Section H, Staff provided the following table summarizing the various costs and benefits associated with each cost-effectiveness test.



**Table 1. Benefits and Costs Included in Cost-Effectiveness Tests**

	Total Resource Cost (TRC)	Modified TRC	Expanded TRC	Societal (SCT)	Utility (UCT)	Participant (PCT)	Ratepayer Impact (RIM)
<b>Benefits</b>							
Utility Avoided Costs	X	X	X	X	X		X
Avoided Emissions		X	X	X			
Economic Benefits			X	X			
Non-Energy Benefits				X			
Incentive Payment						X	
Bill Savings						X	
<b>Costs</b>							
Program Admin. & Delivery	X	X	X	X	X		X
Incremental Costs to Participants	X	X	X	X		X	
Program Incentives Paid					X		X
Lost Utility Revenues							X
<i>Test Currently Conducted by Focus?</i>	Yes	Yes, Primary Test	Yes	Yes	Yes	No	Yes

Source: 5-FE-104 Quad IV Phase II CO Memo with Attach and Request for Comments Cover Ltr. Page 61.

While we find this table beneficial, we find the definition of the Total Resource Cost (TRC) test within the first three columns inconsistent with the National Standard Practice Manual (NSPM) for Distributed Energy Resources.<sup>15</sup> As traditionally defined, the TRC test and the SCT should include Program Incentives Paid on the Costs side in addition to the Incremental Costs to Participants. By definition, the TRC test and SCT should include the *total* incremental cost of the measure, which equals the sum of the incremental participant cost and the utility cost (participant incentive) with some exceptions.<sup>16</sup>

As noted in Table 1, the Commission historically required Focus to pass a modified TRC test as the primary determinant of cost-effectiveness, which adds avoided emissions benefits to the standard TRC test.

**b. Alternatives in the Staff memorandum**

The Staff memorandum outlines eight alternatives for primary cost-effectiveness tests. These include:

**Alt. 1:** The Focus portfolio shall meet a Modified TRC Test of net cost-effectiveness.

**Alt. 2:** The Focus portfolio shall meet an Expanded TRC Test of net cost-effectiveness.

<sup>15</sup> NESP. 2020. *NSPM for Benefit-Cost Analysis of Distributed Energy Resources*. Page E-3. Available at: <https://www.nationalenergyscreeningproject.org/national-standard-practice-manual/>

<sup>16</sup> When a utility provides incentives that exceed 100 percent of the measure incremental cost, this formula does not apply.



**Alt. 3:** The Focus portfolio shall meet a Utility Cost Test of net cost-effectiveness.

**Alt. 4:** The Focus portfolio shall meet a Societal Test of net cost-effectiveness.

**Alt. 5:** The Focus portfolio shall meet a RIM Test of net cost-effectiveness.

**Alt. 6:** The Focus portfolio shall meet a TRC Test of net cost-effectiveness

**Alt. 7:** The Focus portfolio shall meet a Participant Cost Test of net cost-effectiveness.

**Alt. 8:** Remand the matter back to staff for more information.

We recommend that Focus develop a new test based on the regulatory perspective following the NSPM’s recommendation. The regulatory perspective represents the perspective of regulators or similar entities that oversee the state’s energy efficiency and other distributed energy resource investments. According to the NSPM, this perspective is important “to ensure proper accounting of the jurisdiction’s applicable policy goals – as guided by statutes, regulations, organizational policies, utility resource planning principles and policies, and/or other codified forms under which utilities or energy providers operate.”<sup>17</sup> However, it takes time to develop a new test based on the regulatory perspective. Thus, for the time being until the state develops such a new cost-effectiveness test, we support **Alternative 4**, a SCT, which includes the costs and benefits from the perspective of society because this perspective aligns more closely with the state’s clean energy policies than other tests.

The benefits added to the Modified TRC test and the Expanded TRC test, which are emissions benefits and economic impacts, are more appropriately valued from the perspective of society and regulators, rather than the combined perspective of the utility and the participant. However, we recommend that Focus follow the recommendation by the NSPM about macroeconomic impacts and present such impacts (e.g., jobs, gross state product or GSP, and income) separately from the cost-effectiveness test results because they represent a different type of economic impact as stated by the NSPM.<sup>18</sup> A 2022 report prepared by the National Energy Screening Project which supports the NSPM also states that combining the two types of economic impacts could result in double-counting of economic impacts because “the cost of the goods and services purchased (or not purchased) as a result of the utility investment are included in the [Benefit Cost Analysis], and they are also included in the macroeconomic development analyses in terms of the direct and indirect economic activity.”<sup>19</sup> Thus, Focus should

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<sup>17</sup> NESP. 2020. Page v.

<sup>18</sup> NESP. 2020. Page 4-22.

<sup>19</sup> NESP. 2022. *Methods, Tools and Resources - A Handbook for Quantifying Distributed Energy Resource Impacts for Benefit-Cost Analysis*, page 165 – 167. Available at: <https://www.nationalenergyscreeningproject.org/resources/quantifying-impacts/>.



present indicators of macroeconomic impacts separately using standard metrics such as change in jobs, GSP, and income.

The SCT is a simpler test to conceptualize than the TRC, and the costs and benefits are more likely to be symmetrical.<sup>20</sup> A transition to the SCT would also encourage Focus to monetize non-electric fuel benefits and participant Non-Energy Benefits (NEBs), which should have been included in the TRC test, as well as any additional societal NEBs beyond avoided emissions and economic benefits.

## **I. Avoided Costs**

### ***a. General comments***

Staff provided comments on methodologies to estimate various avoided costs under the section on avoided costs. Avoided costs are key components for assessing the benefits of Focus on Energy's clean energy programs. As avoided costs differ based on the varying conditions of the market and energy systems, it is important to conduct in-depth and periodic assessments to develop credible avoided costs.

### ***b. Alternatives in the Staff memorandum***

Under the topic of "Avoided Costs," Staff outlines a number of alternatives for the following five types of avoided costs: (1) electric avoided energy costs; (2) electric avoided capacity costs; (3) electric avoided transmission and distribution (T&D) costs; (4) natural gas avoided costs; and (5) natural gas capacity avoided costs. We provide our recommendations for these sub-topics below.

#### **(1) Electric avoided energy costs**

Staff provides the following two alternatives on electric avoided energy costs.

**Alt. 1:** Status Quo. Maintain the current approach to calculating electric avoided energy costs.

**Alt. 2:** Direct EWG to propose an alternative method.

We recommend an approach that is in **between the Alternative 1 and the Alternative 2**. The current approach mentioned for the Alternative 1 uses MISO's locational marginal price (LMP) forecasts developed as part of the MISO Transmission Expansion Planning (MTEP) process. MISO conducts a MTEP process on an annual basis and identifies specific transmission infrastructure improvements in order to address future grid needs. MTEP's LMP forecast is a reasonable approach to develop credible avoided cost values for Focus' Quadrennial IV plan. However, the current approach does not differentiate avoided costs by time of the day and season. As we discussed in Section B above, it is important to use time-differentiated avoided costs to estimate more accurate benefits for clean energy measures. Thus, while we support the use of MTEP's LMP forecasts, we recommend that Focus estimate time-

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<sup>20</sup> NESP. 2020. Table 2.1, Principle 3.



differentiated avoided costs at least for peak and off-peak hours and for two separate seasons (i.e., summer and winter).

**(2) Electric avoided capacity costs**

Staff provides the following two alternatives on electric avoided capacity costs.

**Alt. 1:** Status Quo. Maintain the current approach to calculating avoided electric capacity costs.

**Alt. 2:** Maintain the current approach to calculating avoided electric capacity costs and also incorporate the unit costs of baseload and intermediate capacity.

We support a **modified version of Alternative 1**. In Alternative 1, which represents the status quo, Focus estimates avoided capacity costs using the MISO Cost of New Entry (CONE) values for peaker power plants for Local Resource Zone 1 and 2 as well as a weighted average of the net revenues estimated by MISO's Narrow Constrained Area (NCA) Mitigation Threshold Report.<sup>21</sup> This approach was proposed by the EWG and approved by the Commission. While the use of CONE represents an industry best practice, we are not aware of any other jurisdictions that include any value associated with NCA or any transmission congestion related revenue as part of avoided generation capacity costs. It is also not clear to us if a power plant owner would receive any additional revenues toward their annual fixed costs associated with the capacity if the owner would receive the gross CONE. This represents the long-term avoided capacity cost. Therefore, we recommend that Focus only use a CONE to estimate avoided costs of capacity.

**(3) Electric avoided T&D costs**

Staff provides the following four alternatives on electric avoided T&D costs.

**Alt. 1:** Status Quo. Maintain the current approach to calculating avoided transmission and distribution costs.

**Alt. 2:** Direct EWG to propose an alternative method for calculating avoided transmission and distribution costs for the Commission's consideration.

**Alt. 3:** Avoided transmission and distribution costs shall not be estimated for the purposes of evaluating Focus.

**Alt. 4:** Other action.

We recommend a **modified Alternative 2**: that EWG works in partnership with the Regulatory Assistance Project to propose an alternative method for calculating avoided T&D costs since we have a

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<sup>21</sup> Staff memorandum, page 79.



number of concerns with the ways avoided T&D costs are currently estimated. First of all, as Staff noted in its Phase II memorandum, the current estimates do not include avoided distribution costs.<sup>22</sup> In addition, our understanding is that the costs of substations are also omitted in the current avoided T&D estimates. According to the Evaluation Working Group's filing regarding T&D avoided costs, the EWG used transmission line statistics that are provided by Investor-Owned Utility (IOU) Annual Reports on the PSC website.<sup>23</sup> The transmission line statistics do not appear to include any costs associated with transmission substations. Thus, we recommend that Focus consider developing avoided costs for both distribution facilities (including distribution substations) and transmission substations. Staff Phase II memorandum raised concerns about data availability of distribution facility costs. If this data issue persists, we recommend that Focus consider taking one of the following two approaches:

- (a) Use historical distribution investment data to develop avoided distribution and transmission substation investments. FERC Form 1 provides historical investment data by utility. The Regulatory Assistance Project (RAP) developed a detailed methodology to estimate avoided distribution costs including substation costs in a 2002 report titled "*State Electricity Regulatory Policy and Distributed Resources: Distribution System Cost Methodologies for Distributed Generation.*"<sup>24</sup> We recommend that Focus follow RAP's suggested approach to estimate avoided distribution costs.
- (b) Develop a proxy avoided distribution cost based on a literature review of avoided distribution costs in other jurisdictions. If resources are too constrained to conduct an in-depth study in Wisconsin, Focus could investigate avoided distribution costs used by other jurisdictions and develop a value suitable for Wisconsin. We suggest Focus use this value as a placeholder until it estimates Wisconsin specific avoided distribution costs. We believe that this approach is better than the current approach because assuming no value for avoided distribution costs is certainly incorrect and is under-valuing the benefits of the clean energy measures promoted by Focus.

The value of avoided transmission costs (approximately \$66/kW-year) that Focus is currently using appears to be reasonable.<sup>25</sup> However, we recommend that Focus consider making some improvements to its avoided transmission methodology. First, Focus should consider using projected transmission investments that are available in MISO Transmission Expansion Plan. Second, Focus should focus on load-growth related investments to estimate avoided transmission costs because energy efficiency and renewable energy primarily avoid or defer the future investments related to load growth.

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<sup>22</sup> Staff memorandum, page 84.

<sup>23</sup> Evaluation Working Group. 2021. *Quadrennial Planning Process III - Evaluation Work Group Recommendations to the Commission of a Method for Calculating Avoided Transmission and Distribution Capacity Costs (5-FE-101)*, Page 7. Available at: <https://apps.psc.wi.gov/ERF/ERFview/viewdoc.aspx?docid=403255>.

<sup>24</sup> Available at: <https://www.osti.gov/biblio/15001124>.

<sup>25</sup> Evaluation Working Group. 2021. page 10.



In the recent Parallel Generation Tariff Modifications cases (6680-TE-107 and 4220-TE-109), Ms. Divita Bhandari submitted testimony on behalf of Renew Wisconsin that provided a detailed methodology for estimating avoided transmission costs as well as avoided transmission cost estimates for Wisconsin.<sup>26</sup> Ms. Bhandari estimated that avoided transmission costs are \$35.93/kW-year for Northern States Power Company and \$70.82 /kW-year for the American Transmission Company (ATC). For estimating avoided transmission investments, Ms. Bhandari provided the following general approach, which is also used in the AESC study mentioned above:

- Step 1: Select a time period for the analysis, which may be historical, prospective, or a combination of the two. (A prospective period is preferred if data are available.)
- Step 2: Determine the actual or expected relevant load growth in the analysis period, in megawatts (MW).
- Step 3: Estimate the load-related transmission investments in dollars incurred to meet that load growth.
- Step 4: Divide the result of Step 3 by the result of Step 2 to determine the cost of load growth in \$/MW or \$/kW.
- Step 5: Multiply the results of Step 4 by a levelized annual carrying charge to derive an estimate of the avoidable capital cost in \$/kW per year.
- Step 6: Add an allowance for operation and maintenance (O&M) of the equipment, to derive the total avoidable cost in \$/kW per year.

We recommend that Focus consider adopting the avoided transmission cost methodology as well as the avoided transmission values provided in Ms. Bhandari's testimony.

#### **(4) Natural gas avoided costs**

Staff provides the following two alternatives on natural gas avoided costs.

**Alt 1:** Status Quo. Maintain the current approach to calculating avoided natural gas costs.

**Alt. 2:** Direct EWG to propose an alternative method for calculating avoided natural gas costs.

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<sup>26</sup> Divita Bhandari. 2022a. Direct Testimony of Divita Bhandari. Application of Wisconsin Power and Light Company, a Wisconsin Corporation, for Approval of Parallel Generation Tariff Modifications and Avoided Costs (6680-TE-107); Divita Bhandari. 2022b. Direct Testimony of Divita Bhandari. Application of Northern States Power Company, a Wisconsin Corporation, for Approval of Parallel Generation Tariff Modifications and Avoided Costs (4220-TE-109).





We recommend **Alternative 2**. Under the current approach, Focus estimates avoided natural gas costs based on EIA forecasts, with some adjustments based on Wisconsin City Gate prices and retail prices in the state. This approach is generally reasonable but could be improved. One critical improvement is to use the latest NYMEX Henry Hub futures forecast for short-term prices for the next 3 years, consistent with the approach taken by the Avoided Energy Supply Component (AESC) study for New England. The NYMEX prices represent “an independent and collective view of the market supply and demand balances over the next three years.”<sup>27</sup> In addition, we recommend that Focus develop time-varying avoided natural gas costs or different avoided costs by major end-use types (i.e., space heating, water heating, etc) in a similar manner to the way that the AESC study estimates avoided natural gas costs. Further, we recommend that Focus develop natural gas capacity avoided costs using time frames like peak day, top 10 days and top 30 days as used by the AESC study. This level of granular avoided gas capacity costs is crucial to properly evaluate the benefits of gas demand response measures as well as beneficial electrification measures that are displacing natural gas.

## **J. Carbon Value**

### **a. General comments**

Wisconsin has historically assumed a monetary value for avoided emissions in its cost effectiveness testing. In the previous two Quadrennial periods, the Commission adopted a value of carbon, \$15 per ton, based on market prices.<sup>28</sup> In the current Phase, the Staff memo raises the question of whether a market-price based value of carbon or a Social Cost of Carbon (SCC) is more appropriate to include in cost effectiveness testing going forward. The SCC is a monetary value representing current and future damages caused by emissions of greenhouse gases (GHGs).

As the Staff memo notes, it has become increasingly common for states to use a SCC to account for the impact of GHG emissions and to better align decision making with energy policy goals.<sup>29</sup> For Wisconsin, use of a SCC in resource planning is consistent with policy goals. Executive Order #38 committed the state to achieving 100 percent carbon-free electricity by 2050 and fulfilling the carbon reduction goals of the 2015 Paris Climate Accord. A SCC will better align resource decision-making toward achieving these commitments by better reflecting the value that energy efficiency and other carbon-free resources bring to the table.

The value of the SCC estimated by the federal agencies has varied over time. In 2021, the Biden administration issued interim guidance that recommended a value of about \$51/metric ton for 2022,

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<sup>27</sup> Synapse Energy Economics, et al. 2021. *Avoided Energy Supply Components in New England: 2021 Report*. page 26. Available at: <https://www.synapse-energy.com/project/aesc-2021-materials>.

<sup>28</sup> Staff memorandum, p. 88.

<sup>29</sup> Staff memorandum, p. 91.



using a 3 percent discount rate, consistent with the 2016 guidance from the Obama Administration.<sup>30,31</sup> While the 2021 interim guidance on the SCC has been challenged by Louisiana and other states, the Supreme Court recently rejected their emergency request to block the use of it.<sup>32</sup> The final guidance is still pending.

Meanwhile, various states are using the federal agency's social costs of carbon for evaluating the emissions reduction benefits of clean energy programs. In New York, the Department of Environmental Conservation established social costs of carbon based on the federal social cost of carbon in its guideline document titled "Establishing a Value of Carbon." The New York SCC was calculated using a lower discount rate of 2 percent and includes the impacts of all relevant GHG's, such as methane and NO<sub>x</sub> in addition to CO<sub>2</sub>. The resulting cost ranges from \$116 in 2020 to \$165 in 2050.<sup>33</sup>

While the SCC applies to carbon dioxide (CO<sub>2</sub>), it may be modified so that it applies to methane and other GHGs.<sup>34</sup> The Global Warming Potential (GWP) of methane (the primary component of natural gas) is much higher than CO<sub>2</sub>, but over a shorter period of time. Therefore, it is more appropriate to use the 20-year GWP of methane. Applying this in regulations, New York is currently in the process of determining appropriate equivalent emissions values assuming a 20-year GWP for methane.<sup>35</sup>

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<sup>30</sup> The Obama administration's guidance valued the SCC at \$49 per short ton in 2021 dollars with an escalation over time. (Interagency Working Group on Social Cost of Greenhouse Gases. 2016. Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis – Under Executive Order 12866. Available at: [https://obamawhitehouse.archives.gov/sites/default/files/omb/inforeg/scc\\_tsd\\_final\\_clean\\_8\\_26\\_16.pdf](https://obamawhitehouse.archives.gov/sites/default/files/omb/inforeg/scc_tsd_final_clean_8_26_16.pdf).

<sup>31</sup> The White House. January 20, 2021. "Executive Order on Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis." Available at <https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/20/executive-order-protecting-public-health-and-environment-and-restoring-science-to-tackle-climate-crisis/>. See also, Interagency Working Group on the Social Cost of Greenhouse Gases 2021. Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide Interim Estimates under Executive Order 13990. Available at, [https://www.whitehouse.gov/wp-content/uploads/2021/02/TechnicalSupportDocument\\_SocialCostofCarbonMethaneNitrousOxide.pdf](https://www.whitehouse.gov/wp-content/uploads/2021/02/TechnicalSupportDocument_SocialCostofCarbonMethaneNitrousOxide.pdf).

<sup>32</sup> Clark, Leslie and Niina Farah. "Federal agencies can use social cost of carbon — for now." ClimateWire: 05/27/2022. <https://www.eenews.net/articles/federal-agencies-can-use-social-cost-of-carbon-for-now/>

<sup>33</sup> Takahashi, Kenji et al. 2021 (Nov. update). *Missed Opportunities: The Impacts of Recent Policies on Energy Efficiency Programs in Midwestern States*. Synapse Energy Economics, page B-20. Available at: [https://www.synapse-energy.com/sites/default/files/Missed-Opportunities-Midwest-EE-Policy-Impacts\\_Final\\_2021-Nov-Update.pdf](https://www.synapse-energy.com/sites/default/files/Missed-Opportunities-Midwest-EE-Policy-Impacts_Final_2021-Nov-Update.pdf).

<sup>34</sup> Synapse Energy Economics, et al. 2021. *Avoided Energy Supply Components in New England: 2021 Report*. Available at: <https://www.synapse-energy.com/project/aesc-2021-materials>

<sup>35</sup> New York State Climate Action Council presentation on July 22, 2021. Available at: <https://climate.ny.gov/CAC-Meetings-and-Materials>.



Staff mentions the Evaluation Work Group’s investigation into time-based valuation of avoided carbon emissions. We appreciate this effort. Further, we suggest that use of a tool like Lawrence Berkeley National Laboratory’s Time-Sensitive Value Calculator may facilitate differentiating emissions values.<sup>36</sup>

**b. Alternatives in the Staff memorandum**

Staff outlines the following alternatives for incorporating a value for carbon in cost effectiveness testing:

**Alt. 1:** Status Quo. Focus cost-effectiveness tests shall value avoided CO<sub>2</sub> emissions using a market-based value of \$15.00 per ton.

**Alt. 2:** Focus cost-effectiveness tests shall value avoided CO<sub>2</sub> emissions using an updated market-based value. No later than September 30, 2023, the EWG shall provide a report to the Commission on alternatives for an appropriate market-based carbon value, at which time the Commission will select the preferred valuation.

**Alt. 3:** Focus cost-effectiveness tests shall value avoided CO<sub>2</sub> emissions using a social cost of carbon using the U.S. Government’s Interagency Working Group’s “central” estimates.

**Alt. 4:** Focus cost-effectiveness tests shall value avoided CO<sub>2</sub> emissions using a different value, or another estimate provided by the U.S. Government’s Interagency Working Group, consistent with the Commission’s discussion.

We support a **modified Alternative 3**, using the federal social cost of carbon provided by the U.S. Government’s Interagency Working Group but with a 2 percent discount rate, to be consistent with the current discount rate used by Focus. This is also consistent with the approach taken by New York.

**K. Discount Rate**

**a. General comments**

Applying a discount rate enables consideration of the timing of cost and benefit impacts. A low discount rate gives more weight to long-term impacts. For example, a societal discount rate (typically in the range of 0 to 3 percent) considers intergenerational equity. A higher discount rate (e.g., 5 to 8 percent, in line with the utility cost of capital) gives more weight to near-term impacts.<sup>37</sup>

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<sup>36</sup> Lawrence Berkeley National Laboratory 2022. *Time-Sensitive Value Calculator*. Available at: <https://emp.lbl.gov/publications/time-sensitive-value-calculator>.

<sup>37</sup> National Efficiency Screening Project. 2017. *National Standard Practice Manual for Assessing Cost-Effectiveness of Energy Efficiency Resources*. Available at [https://www.nationalenergyscreeningproject.org/wp-content/uploads/2017/05/NSPM\\_May-2017\\_final.pdf](https://www.nationalenergyscreeningproject.org/wp-content/uploads/2017/05/NSPM_May-2017_final.pdf).



Policy goals should inform the choice of a discount rate.<sup>38</sup> As climate change is a long-term phenomenon, efforts to reduce greenhouse gases provide benefits over a long period. Given Wisconsin’s carbon and energy goals, the use of a low discount rate for valuing the carbon-reduction benefits of energy efficiency is appropriate. We also note that a low discount rate is consistent with the use of a Societal Cost Test.

***b. Alternatives in the Staff memorandum***

Staff outlines the following alternatives regarding the choice of discount rate:

**Alt. 1:** Use a discount rate of zero percent in Focus’ cost-effectiveness tests.

**Alt. 2:** Status Quo. Use a discount rate of 2.0 percent in Focus’ cost-effectiveness tests.

**Alt. 3:** Use a discount rate of 7.3 percent in Focus’ cost-effectiveness tests.

**Alt. 4:** Use a different discount rate consistent with the Commission’s discussion.

We recommend the continued use of the 2.0 percent discount rate, consistent with **Alternative 1**.

## **II. BUDGETS**

### **A. Overall Focus Budget Determination**

***c. General Comments***

In this section Staff explained how the funding level for Focus’ energy efficiency and renewable programs are determined and how much of the funding is allocated for oversight functions.

***d. Alternatives in the Staff memorandum***

There are no alternatives presented in this section.

### **B. Renewables**

***a. General Comments***

Staff gives a brief historical overview of the Renewables Program and its funding. According to the Staff memorandum, the demand for this program has been increasing as the price of solar panels have come down substantially over time. In response, Focus reduced incentives per participants. Yet Focus’ recent

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<sup>38</sup> National Efficiency Screening Project. 2017.



analysis for CY 2021 still found an increased level of free ridership ratio for the program compared to a study done for CY 2019. This implies that Focus should modify its renewable energy program design to reduce the level of free ridership.<sup>39</sup>

Staff mentions that having a cap on the budget, and particularly a penalty for exceeding said cap, results in overly conservative utilization of funds, reducing the overall benefit of the program. The Staff memo also cites a lack of Trade Ally labor as a reason for the Residential and Business Renewable Rewards offerings failing to achieve their goals.<sup>40</sup>

***b. Alternatives in the Staff memorandum***

The staff memorandum outlines four alternatives with numerous sub-alternatives for the Commission to consider in deciding the budget for the Renewables Program.

**Alt. 1:** Allocate \$5.5 million annually for renewables

**Sub-Alt. A:** Status Quo. \$5.5 million is for incentives only, non-incentive costs taken out of Core efficiency budget.

**Sub-Alt. B:** \$5.5 million is for incentive and non-incentive costs

**Sub-Alt. C:** Direct the Program Administrator to propose a renewable energy workforce development KPI

in Phase III of Quad IV Planning.

**Alt. 2:** Allocate a different annual dollar amount for renewables based on the Commission's discussion.

**Sub-Alt. A:** The allocated amount is for incentives only, non-incentive costs taken out of Core efficiency budget.

**Sub-Alt. B:** The allocated amount is for incentives and non-incentive costs.

**Sub-Alt. C:** Direct the Program Administrator to propose a renewable energy workforce development KPI for the Commission's consideration in Phase III of the Quad IV Planning Process.

**Alt. 3:** Set a four-year maximum budget KPI to give the Program Administrator the flexibility to shift funds between the Renewable and Core Efficiency budgets with

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<sup>39</sup> Staff memorandum, page 112-113.

<sup>40</sup> Staff memorandum, page 109.



approval from Commission staff. Total renewable expenditures over the quadrennium shall not exceed the maximum budget KPI.

**Sub-Alt. A:** The maximum budget KPI is for incentives only, non-incentive costs are to be spent from the Core Efficiency budget.

**Sub-Alt. B:** The maximum budget KPI is for incentive and non-incentive costs.

**Sub-Alt. C:** Set a four-year maximum budget KPI of \$22 million.

**Sub-Alt. D:** Set a four-year maximum budget KPI that is consistent with the Commission's discussion.

**Sub-Alt. E:** Direct the Program Administrator to propose a renewable energy workforce development KPI in Phase III of Quad IV Planning.

**Alt. 4:** Do not set a spending maximum for renewables and allow the Program Administrator to allocate funding as necessary to meet the Commission's goals as long as spending aligns with Focus' statutory obligations and Commission policies.

We support a **modified Alternative 1, Sub-Alternatives A and C**. Due to the high free ridership ratio for the renewable energy program, it does not appear that any additional budget would be needed. Instead, we believe that Focus should target specific customer segments who need financial support or would provide greater electric system or societal benefits. Potential target areas could include low-income customers, environmental justice communities, tribal communities, critical facilities, or areas that experience distribution network congestion. We recognize the bottleneck that a lack of Trade Ally labor imposes on installations, so we support directing Focus to propose a KPI for renewable energy workforce development.

## **C. Underserved Rural and Other Customers**

### **a. General Comments**

The Staff memorandum gives a brief historical overview of the Rural program and the benefits it offers customers. Staff mentions administrative complexity in accounting the Rural and Core Efficiency program overlap, however this is to be expected as the Rural program is a complement to the Core Efficiency program for rural customers, not a replacement.<sup>41</sup>

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<sup>41</sup> Staff memorandum, page 122-124.



**b. Alternatives in the Staff memorandum**

The Staff memorandum outlines three alternatives for deciding how Focus should aim to reach underserved customers:

**Alt. 1:** Status Quo. Continue the current rural program with an equal emphasis on industrial and agriculture with some residential programs and an annual budget of \$8 million.

**Alt. 2:** Develop a KPI to target the percentage of incentive spend that is proportional to the percentage of eligible rural customers in designated zip codes.

**Alt. 3:** Direct the Program Administrator to conduct analysis during the first year of Quad IV to better identify underserved customers, target program offerings and develop KPIs. Report back to the Commission by March 31, 2024.

**Sub-Alt. A:** The analysis shall emphasize underserved customers facing the highest energy burdens.

**Sub-Alt. B:** The analysis shall emphasize small business customers.

**Sub-Alt. C:** The analysis shall emphasize a different customer segment consistent with the Commission’s discussion.

We support **Alternative 3, Sub-Alternative A**, with the caveat that the program should continue in a business-as-usual fashion while Focus works to gather information on underserved customers by March 31, 2024. As shown in Figure 15 in the Staff memorandum,<sup>42</sup> there are areas in Wisconsin whose average energy burden is in excess of 16 percent, many of which are in tribal areas. While these locations are likely being served by the existing Rural program, it is worthwhile to further investigate how Focus can serve these and other disadvantaged communities better.

**D. Environmental and Economic Research and Development Program**

**a. General Comments**

According to the Staff Phase II memo, the goal of the Environmental and Economic Research and Development Program (EERD) is to “contribute practical and useful knowledge to planning the state’s energy future by funding research projects that fill gaps in existing knowledge. EERD addressed the interconnections between energy use, environmental quality, and economic development.”<sup>43</sup> Similarly, Focus’ website states that “EERD research projects allow Wisconsin to further its efforts towards

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<sup>42</sup> Staff Memorandum, page 128.

<sup>43</sup> Staff memo, p. 130.



reducing energy waste, costs, and environmental impacts.”<sup>44</sup> Projects that were awarded funding since 2013 are shown in Table 2.

**Table 2. EERD Projects Awarded Funding by Year, 2013-2021**

<b>Year Awarded</b>	<b>Project</b>	<b>Contractor</b>	<b>Budget</b>
2013	<i>Motivating High Energy Users to Save Energy-</i>	Cool Choices, Inc.	\$79,192
2013	<i>Wisconsin Building Code Analysis: Identifying Low Cost, High Impact Measures</i>	Sustainable Engineering Group	\$90,000
2013	<i>Biogas Storage for On-Farm Anaerobic Digesters in Wisconsin: Technical Assessment, Market Assessment, and Focus on Energy Opportunity</i>	Tetra Tech	\$98,649
2015	<i>Ductless Mini-split Heat Pumps</i>	Tetra Tech	\$63,140
2016	<i>New Homes Baseline and Market Characterization Study</i>	Seventhwave	\$100,000
2016	<i>Mid-sized Business Characterization</i>	EMI Consulting	\$98,388
2016	<i>Embedded Data Centers</i>	Seventhwave	\$71,889
2017	<i>Characterizing the Renewable Energy Landscape in Wisconsin</i>	Tetra Tech	\$78,400
2017	<i>Light Level Analysis in Buildings</i>	Seventhwave	\$69,694
2020	<i>Multifamily and Single Family Air Source Heat Pumps</i>	Center for Energy & Environment (CEE)	\$114,500
2020	<i>Residential Dehumidification in Wisconsin</i>	CEE	\$69,088
2020	<i>Behavioral and Technology Based Load Management Opportunity Case Studies</i>	Illume	\$65,000
2020	<i>Cold Climate Variable Refrigerant Flow Systems</i>	Slipstream	\$85,000
2020	<i>Next Generation C&amp;I Programs: Energy Management Information Systems (EMIS)</i>	Slipstream	\$66,900
2021	<i>Focus on Energy Rooftop Solar Potential Study Report</i>	Cadmus	\$181,017
<b>TOTAL</b>			<b>\$1,330,857</b>

Source: Staff memorandum, p. 133.

As discussed in Staff’s memo, this program received initial, large infusions of funds but diminishing allocations later on. The current funding level is \$100,000 per year. Once any surplus EERD funds are used up, this annual funding level will be inadequate to support the types of projects that have been selected recently. Over the 9-year period shown in Table 2, EERD awards average about \$150,000 per

<sup>44</sup> Focus on Energy. n.d. “Research & Pilots.” Available at: <https://focusonenergy.com/about/research>





year—roughly 50 percent higher than the current annual funding level. Further, these deficits may become larger. The funding level has not kept pace with inflation—meaning that the budget has not tracked the cost of these studies.

The EERD is covering work that is important for the longevity of energy efficiency programs, including market characterization studies. Other parties mentioned the need for research on end-use load shapes for differentiating the value of energy savings at different times of the year.<sup>45</sup> Such load shapes will also be important for enabling Focus to target measures with the greatest potential for reducing carbon emissions, consistent with the Commission’s decision in Phase I of this proceeding to place more emphasis on carbon reductions.<sup>46</sup> Such research will also help as the Focus portfolio increasingly moves away from lighting measures as a primary source of savings.

According to the Focus website, EERD projects are selected through a targeted competitive request for proposals process.<sup>47</sup> While the competitive process is likely keeping costs down, the framework for evaluating proposals is not clear. Increased transparency into this process will help to ensure that award decisions are aligned with policy goals. In addition, a framework for considering, approving, and assessing projects should be fleshed out, to help ensure that funded projects build upon previous learnings and provide actionable data that will enable a decision for scaling up the project. This framework should specify minimum elements of the study design and justification, including the following:

- What has already been learned from previous research, and how will these past and potentially ongoing learnings relate to the currently proposed research?
- What are the gaps in understanding that the current proposed research proposes to fill?
- What alternative approaches could be used to fill in these knowledge gaps, and why is the proposed approach better than alternatives?
- What metrics and data will be collected, and how will these data enable Focus to decide whether to recommend rolling out to a full-scale program or offering?
- What is the logic for the pilot study design?
- Are there are opportunities for learning on other, related issues?

***b. Alternatives in the Staff memorandum***

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<sup>45</sup> Staff memo, p. 136.

<sup>46</sup> Staff memo, Attachment C.

<sup>47</sup> Focus on Energy. n.d. “Research & Pilots.” Available at: <https://focusonenergy.com/about/research>



Staff outlines the following alternatives regarding funding for the EERD:

**Alt. 1:** The Commission determines that the annual allocation for EERD should remain at \$100,000.

**Alt. 2:** The Commission determines that the annual allocation for EERD should be increased to \$200,000.

**Alt. 3:** The Commission determines that the annual allocation for EERD should be an amount consistent with its discussion.

**Alt. 4:** The Commission determines that the annual allocation for EERD should remain at \$100,000 but directs Commission staff to identify other potential funding sources besides Focus.

**Alt. 5:** The Commission determines that the annual allocation for EERD should be increased consistent with its discussion and directs Commission staff to identify other potential funding sources besides Focus.

We find that an expansion of the EERD budget to \$200,000 (**Alternative 2**) is reasonable. We also support Commission staff identifying other potential sources of funding (**as in a modified Alt. 5**). Furthermore, based on the discussion above, we find that additional transparency into project selection and processes to ensure that projects build on previous learnings and provide actionable data would be beneficial.

## **E. Behavioral Program Approval by the Commission**

### ***a. General Comments***

The Staff memorandum explains how the Commission has historically dealt with the topic of Behavioral Programs, specifically that the Commission has required Focus to submit individual program proposals for approval in advance of implementation.<sup>48</sup> The Commission first discussed Behavioral Programs in the Quad II planning process. Staff seems generally very supportive of Behavioral Programs, noting Home Energy Reports (HERs) are cost-effective even using a conservative assumption of measure life. Staff says "... these HER programs are tested and generate realized, cost-effective savings."<sup>49</sup>

Staff continues on to explain how Behavioral Programs offer non-energy benefits such as engaging with customers on a more personal level, understanding how they react to marketing tactics, and increasing participation in other program areas and energy efficiency measures. Staff also discusses a pilot that Focus is currently conducting in rural Wisconsin called the Save to Give Challenge. The program is and

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<sup>48</sup> Staff Memorandum, page 139.

<sup>49</sup> Staff Memorandum, page 140.



has been under evaluation for its efficacy, but early survey results show that savings are likely to persist beyond the lifetime of the program. Lastly, Staff mentions that the regulatory delay in requiring Focus to receive Commission approval for Behavioral Programs presents a challenge to capitalizing on savings potential.<sup>50</sup>

**b. Alternatives in the Staff memorandum**

The Staff memorandum outlines three alternatives for planning for behavioral programs:

**Alt. 1:** The Commission determines that Focus funds may be used for behavioral pilots during the quadrennium, at the discretion of the Program Administrator.

**Alt. 2:** The Commission determines that Focus funds may be used for behavioral pilots during the quadrennium. However, any proposed behavioral program design shall be returned to the Commission for approval in advance of implementation.

**Alt. 3:** The Commission determines that Focus funds should not be used for behavioral programs.

We support **Alternative 1**. Behavioral programs have been discussed since Quad II, and yet there has been only one pilot program launched by Focus. Allowing Focus to use funds for a behavioral pilot without requiring special regulatory approval is likely to get this offering to market faster. We recommend that if Focus is to implement a new behavioral pilot that it observes the best practices put forth by Oracle<sup>51</sup> and the ACEEE.<sup>52</sup>

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<sup>50</sup> Staff memorandum, page 143.

<sup>51</sup> Oracle Utilities. n.d. *Best Practices in Behavioral Energy Efficiency: Four Ways to Optimize Your Demand-Side Management Portfolio and Transform the Customer Experience*. Available at: [https://www.oracle.com/webfolder/s/delivery\\_production/docs/FY16h1/doc35/Thought-Leadership-OU-Opower.pdf](https://www.oracle.com/webfolder/s/delivery_production/docs/FY16h1/doc35/Thought-Leadership-OU-Opower.pdf).

<sup>52</sup> Sussman and Chikumbo. 2016. *Behavior Change Programs: Status and Impact*. Available at: <https://www.aceee.org/sites/default/files/publications/researchreports/b1601.pdf>.