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September 19, 2025

Mr. Drew Bohan
Executive Director
Energy Data and Analytics Office
California Energy Commission
714 P Street
Sacramento, California 95814

RE: Pioneer Community Energy's Revised Load Management Standards Compliance Plan

Dear Mr. Bohan,

Pioneer Community Energy (Pioneer) submits the attached revised Load Management Standards Compliance Plan (Revised Plan) in accordance with section 1623.1(a)(3)(B) of the Load Management Standards (LMS), the June 19, 2025 California Energy Commission's (CEC's) Executive Director's Request for Revision of Pioneer's LMS Compliance Plan (CEC Letter), and the June 25, 2025 electronic message from CEC Staff providing an extension of up to one week from approval to submit the Revised Plan. This Revised Plan was approved and authorized for submission by Pioneer's Board of Directors (Board) in a duly noticed public meeting held on September 18, 2025.

Pioneer appreciates the CEC's thorough review of the LMS Compliance Plan originally submitted on March 26, 2024 (Original Plan) and continues to support the goals of the LMS rules.¹ However, Pioneer clarifies that by submitting these revisions, it does not concede either that its Original Plan was noncompliant with LMS rules or that the CEC maintains jurisdiction over Pioneer's rates and programs.

In its Original Plan, after carefully considering the factors identified in section 1623.1(a)(1)(A), Pioneer found that a marginal cost-based rate would not be cost effective, technologically feasible, or equitable for its customers, particularly low-income customers.² Pioneer instead identified a list of programs that it offers or is developing that align with the goals of a marginal cost-based rate offering under the LMS rules. Pioneer developed these programs pursuant to its authority to establish its own rates and programs and consistent with the priorities of the communities that comprise it as a community choice aggregator (CCA).

¹ Section 1623.1(a)(1).

² Regarding the other factors concerning benefits to the grid and benefits to customers, Pioneer explained that such benefits are speculative at this point. The Original Plan also specifically found evidence did not show that marginal cost-based rates effectively shift energy usage from peak periods, obviating the need to apply to Pioneer's Board for approval of a marginal cost-based rate under section 1623.1(b)(2).

Given the findings endorsed by Pioneer's Board in the Original Plan, multiple provisions of the LMS rules provide alternatives to offering a marginal cost-based rate.³ However, the CEC Letter finds that the Original Plan "is consistent with 20 CCR sections 1623.1(a)(1) and 1623.1(a)(2) with the exception that it does not provide for marginal, cost-based rates to customers, such as a commitment to participate in dynamic rate pilot programs that [Pioneer] is considering joining or other pathways to compliance." The CEC Letter acknowledges that the Plan's analysis of the factors provided in section 1623.1(a)(1) is reasonable and supported by objective data and that the Plan is consistent with section 1623.1(a)(2).

The CEC Letter does not acknowledge the authority of Pioneer's Board over its own rates, including, but not limited to, the authority memorialized in section 1623.1(a)(2) for the Board to modify the requirements of section 1623.1(b)-(c) "to provide a more technologically feasible, equitable, safe or cost-effective way to achieve the requirements of this article or the plan's goals." It was consistent with this authority for Pioneer to decline to offer marginal cost-based rates in its Original Plan. Accordingly, Pioneer maintains that its Original Plan, including the absence of marginal cost-based rate proposals, is consistent with both the LMS regulations and broader authority over rates dedicated to CCAs under the law.⁴

While it is Pioneer's position that its Original Plan complied with the LMS rules, it submits these revisions in response to the CEC Letter because they are consistent with actions already taken pursuant to Pioneer Board approval. This includes offering the Hourly Flex Pricing pilot program to agricultural customers and working with other load serving entities and the CEC as practicable to help implement the statewide RIN tool. In addition, consistent with the goals of the LMS program and the priorities of its member communities, Pioneer will continue to review opportunities to provide beneficial rates and programs to its customers, under the direction of its Board.

If you have any questions, or additional information is required, please contact me at Lee.Ewing@PioneerCommunityEnergy.org or call me at (916) 626-9909.

Sincerely,
Lee Ewing
Legislative and Regulatory Manager
Lee.Ewing@PioneerCommunityEnergy.org

³ See section 1623.1(a)(1)(B) (permitting a plan to propose programs that enable automated response to marginal cost signal(s) in lieu of marginal cost-based rates); *see also* section 1623.1(a)(2) (permitting the rate approving body of a CCA to delay or modify compliance with sections 1623.1(b) & (c), including with regard to developing marginal cost-based rates, if it determines that the plan makes one of several demonstrations, such as that the marginal cost-based rates are not technologically feasible or cost effective); *see also* section 1623.1(b)(2)(A) (providing that CCAs must only apply for approval of marginal cost-based rates that their rate-approving body determines "materially reduce peak load").

⁴ Public Utilities Code Section 366.2(c)(3).

Load Management Standards Compliance Plan (Revised)

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1. Introduction

Pursuant to California Energy Commission’s (CEC) amended Load Management Standards (LMS), this document (Plan) demonstrates how Pioneer Community Energy (Pioneer) intends to meet the articulated goals of the regulation. Pioneer does not accept CEC’s belief that they hold jurisdiction over Community Choice Aggregators (CCAs), and it is participating in this decision voluntarily.

I. About CEC & LMS

The CEC was established and granted specific load planning and management powers by the Warren-Alquist Act of 1974 (known as Load Management Standards). In 2022, LMS was amended, and new regulations were implemented with the broader goals of encouraging the use of electrical energy at off-peak hours, encouraging the control of daily and seasonal peak loads to improve electric system efficiency and reliability, lessening or delaying the need for new electrical capacity, and reducing fossil fuel consumption and greenhouse gas emissions¹.

The following is Pioneer’s roadmap for compliance in the form of a table listing the new requirements, their deadlines, and their respective statuses:

Relevant Section	Requirement	Deadline	Status
§1623.1(c)	Upload time-dependent rates in the Market Informed Demand Automation Server (MIDAS)	July 1, 2023	Complete
§1623.1(a)(1)	Evaluate and implement a marginal cost-based rate or, in the alternative, a plan of programs designed to achieve the same goals	April 1, 2024	Addressed with this plan
§1623.1(a)(3)(A)	Submit the plan to CEC within 30 days of Board adoption. Respond to any requests for additional information or requests for plan revisions within 90 days.	30 days after Pioneer Board approval	Complete
§1623(c)(4)	Within 1 year of the LMS effective date,	April 1, 2024	Complete

¹ §1623.1(a)(1).

	provide customers access to their Rate Identification Numbers (RIN) on billing statements and in online accounts using both and QR code.		
§1623(c)(2)(A)	Develop and submit to the CEC, in conjunction with the other obligated utilities, a single statewide standard tool for authorized rate data access by third parties along with the terms and conditions for use of the tool. Upon CEC approval, the tool will be live and obligated LSEs must maintain and improve the tool.	October 1, 2024	In Progress
§1623.1(b)(3)	Submit to CEC a list of load flexibility programs deemed cost-effective with at least one option for automating response to MIDAS signals for each customer class.	October 1, 2024	Complete
§1623.1(a)(3)(C)	Submit annual reports to CEC demonstrating implementation of the Plan, as approved by the Board.	One year after compliance plan adoption and annual thereafter	In Progress
§1623.1(b)(2)	Submit at least one marginal cost-based rate or program to the Pioneer Board for approval for any customer class where such a rate will materially reduce peak load.	July 1, 2025	In Progress
§1623.1(b)(5)	Conduct a public information campaign to inform and educate customers on why marginal cost-based rates or load flexibility	No deadline provided	In Progress

	programs are needed, how they are used, and how these rates and programs can save customers money.		
§1623.1(a)(1)(C)	Review the Plan at least once every 3 years after the Plan is adopted by the Pioneer board. Submit any updates of the Plan to the Board if there is a material change.	Triennially	Ongoing

(Updated September 2025)

II. About Pioneer

Pioneer is a CCA that serves unincorporated Placer and El Dorado County along with the Town of Loomis and the cities of Auburn, Colfax, Grass Valley, Lincoln, Nevada City, Placerville, and Rocklin². Pioneer is governed by a Board of Directors made up of elected officials from its member agencies³. It currently serves approximately 166,000 accounts consuming approximately 2,000 gigawatt hours annually. Pioneer has a relatively small staff compared to other CCAs⁴. Currently, the staff is made up of fourteen individuals. Many necessary business functions are handled by outside contractors.

As mentioned previously, per the amended LMS regulations Pioneer must provide a plan that describes how Pioneer will meet the goals of encouraging the use of electrical energy at off-peak hours, encouraging the control of daily and seasonal peak loads to improve electric system efficiency and reliability, lessening or delaying the need for new electrical capacity, and reducing fossil fuel consumption and greenhouse gas emissions⁵. Specifically, the plan must evaluate marginal cost-based rates for each customer class in terms of cost effectiveness, equity, technological feasibility, benefits to the grid, and benefits to customers⁶. After weighing these factors, Pioneer may decide that marginal cost-based rates are not necessary and may instead propose programs that enable automated response to marginal cost signal(s) for each customer class and evaluate them based on the previously mentioned factors⁷.

² Amendment No. 5 to the Amended and Restated Joint Exercise of Powers Agreement for Pioneer Community Energy, Res. No. 2022-26 (2022).

³ *Id.*

⁴ <https://pioneercommunityenergy.org/>, (last visited March 7, 2024).

⁵ §1623.1(a)(1).

⁶ §1623.1(a)(1)(A).

⁷ §1623.1(a)(1)(B).

III. Format of Analysis

The LMS Regulation requires an analysis of marginal time-based rates and any subsequent programs for each customer class⁸. In consideration of CEC guidance, Pioneer has divided Customer Class into two distinct classes – residential and industrial/commercial. Pursuant to the LMS regulations, marginal time-based rates and the subsequent programs will be analyzed under the following factors:

- Cost Effectiveness,
- Technological Feasibility,
- Benefits to the Grid,
- Benefits to Customers, and
- Equity.

Cost Effectiveness will be broken down individually into Cost and Effectiveness. Where analysis and discussion for each customer class is substantially the same, the sections will be combined.

2. Rates

CCA governing boards have jurisdiction over rate setting for their customers⁹. This provides CCAs with flexibility in how they want to procure energy and correspondingly set rates for the communities that they serve. With that concept in mind, Pioneer has a strong emphasis on keeping ratepayers' costs low.

Implementing new rates involve considerable costs to Pioneer. The Pioneer Board of Directors (Pioneer Board) is required to review rates annually¹⁰. However, staff can bring suggested rate changes first to the Finance Committee and then to the Board of Directors. In assessing rates, Pioneer has many considerations. These include traditional business costs such as operating expenses, paying for power supply and regulatory products, and maintaining creditworthiness. However, unlike traditional utilities, CCAs must also consider the ability of a ratepayer to opt out of service. Because of this, Pioneer (like many other CCAs) relies on a strategy of mirroring Large Investor-Owned Utility (IOU) rates with a targeted discount.

The LMS regulations requires the Pioneer Board to assess for approval at least one marginal cost-based rate by June 30, 2027¹¹. Pioneer may apply for approval of a marginal cost-based rate

⁸ §1623.1(a)(1)(A).

⁹ Public Utilities Code Section 366.2(c)(3).

¹⁰ *Financial Policies*, (Oct. 21, 2021), <https://pioneercommunityenergy.org/wp-content/uploads/2022/04/2021-10-21-Financial-Policies.pdf>.

¹¹ §1623.1(b)(2).

offered by PG&E¹². PG&E stated their intent to provide one marginal cost-based rate by January 2027 which Pioneer can mirror upon its implementation¹³. In the meantime, Pioneer commits to making a marginal cost-based rate available to its agricultural customers in the form of PG&E's Hourly Flex Pricing Pilot (HFP Pilot), formerly referred to as the Flexible Irrigation Pilot Program for Agriculture (AgFIT). The HFP Pilot is an expanded marginal cost-based PG&E CalFUSE pilot authorized in CPUC Decision D. 24-01-032. By offering the HFP Program, Pioneer is providing one marginal cost-based rate for its agricultural customers. With that in mind, per the requirements of the regulations, Pioneer must assess developing a marginal cost-based rate outside of mirroring one developed by PG&E. Pioneer will consider offering further marginal cost-based rates as appropriate and consistent with its authority over its own rates, subject to the limitations identified below.

I. Marginal Cost-Based Rates

Marginal cost is calculated as “the sum of the marginal energy cost, the marginal capacity cost (generation, transmission, and distribution), and any other appropriate time- and location-dependent marginal costs, including the locational marginal cost of associated greenhouse gas emissions, on a time interval of no more than one hour¹⁴. Energy cost computations shall reflect locational marginal cost pricing as determined by the associated balancing authority, such as the California Independent System Operator, the Balancing Authority of Northern California, or other balancing authority¹⁵. Marginal capacity cost computations shall reflect the variations in the probability and value of system reliability of each component (generation, transmission, and distribution).¹⁶” There is an immediate issue with the provided definition of marginal cost-based rates – Pioneer does not control the transmission and distribution in its service territory so it cannot accurately compute a marginal cost-based rate. Additionally, it is hard to quantify greenhouse gas emission costs. It appears that the regulations intend for these rates to be dynamic, responding to demand on the grid. For ease of reference, this Plan will refer to marginal cost-based rates as Dynamic Pricing.

A. Cost Effectiveness

As mentioned previously, Pioneer relies heavily on outside contractors. Any implementation of dynamic pricing would require amending contracts with multiple contractors. This means that overall cost will be unquantifiable, as the contract amendments will need to be negotiated. To weigh cost against effectiveness, Pioneer believes it is best to assess the effectiveness of Dynamic Pricing first in order to ascertain any unforeseen costs.

¹² *Id.*

¹³ 2023 COMPLIANCE PLAN for the LOAD MANAGERMENTS STANDARDS, D 23-LMS-01.

¹⁴ §1623.1(b)(1).

¹⁵ *Id.*

¹⁶ *Id.*

i. Effectiveness

Pioneer will analyze “Effectiveness” on whether the implemented rate will consistently lead to the desired load shifting outcome.

In November of 2023, Lawrence Berkeley Lab released a report titled "The use of price-based demand response as a resource in electricity system planning."¹⁷ This paper analyzed twelve utilities use of time-based rates. They included Time of Use Pricing, Real Time Pricing, Variable Peak Pricing, Critical Peak Pricing, and Critical Peak Rebate in their analysis of price-based demand response.

Approximately one-third of the utilities studied did not include price-based demand response in the Integrated Resource Plan (IRP) as they found that there was not sufficient participation to deem it significant in impacting demand¹⁸. Furthermore, of the customers that did participate, their response to price signals was often erratic and hard to predict¹⁹.

In studying participation rate, one utility studied showed a five-fold increase in customer participation from an opt-out model compared to an opt-in model²⁰. This shows that these pricing schemes are generally unpopular for ratepayers. Consumer advocates have raised serious concerns about opt-out pricing as they can be especially burdensome for low-income ratepayers (See *Equity*). For CCAs, an opt-out approach presents serious business risks as the ratepayer may choose to opt out of the CCA completely if they are upset with the dynamic rate. A large amount of unexpected opt-outs of CCA service have credit implications which in turn leads to higher procurement costs. This in turn leads to higher rates in order to maintain the financial stability of the CCA.

For the opt-in model, participation ranged from three percent to thirty percent²¹. Similarly, a 2016 Department of Energy sponsored study of several utilities found a fifteen percent opt-in rate for dynamic pricing rates²². This is consistent with several other studies mentioned in the Lawrence Berkeley Lab report, with no dynamic pricing rate exceeding thirty percent enrollment for opt-in participation²³.

In the Lawrence Berkeley Lab study, only one utility reported load reduction for opt-in participation²⁴. Residential ratepayers of that utility showed load reduction levels eighty to ninety percent lower than other residential customers²⁵. However, for commercial and industrial

¹⁷ Juan Pablo Carvallo and Lisa Schwartz, *The use of price-based demand response as a resource in electricity system planning*, Energy Markets & Policy, Nov. 2023.

¹⁸ *Id* at Pg. 5

¹⁹ *Id*.

²⁰ *Id* at Pg.7.

²¹ *Id*.

²² Dept. of Energy, *Customer Acceptance, Retention, and Response to Time-Based Rates from the Consumer Behavior Studies*, Electricity Delivery & Energy Reliability, Nov. 2016.

²³ Carvallo, *supra* note 17.

²⁴ *Id*.

²⁵ *Id*.

ratepayers, the utility found only a ten percent higher load reduction compared to other commercial and industrial ratepayers²⁶.

As mentioned previously, studies show inconsistent results in using dynamic pricing to achieve consistent demand response. One study showed that automated demand response programs are overridden on average 14% of the time²⁷. This study also found that the longer a demand response event lasts, the more likely automation will be overridden with events lasting from the two to four-hour range being overridden up to 30% of the time²⁸.

a. Discussion - Residential

To offset any risk to Pioneer's business model, any dynamic pricing rate would need to be opt-in. As mentioned above, an opt-out model could lead to a large number of unexpected opt-outs of CCA service. This would have credit implications which in turn would increase procurement costs for the CCA. These costs would then be passed on to the remaining ratepayers in future rate changes, which is a fundamentally inequitable result.

As the studies show, an opt-in model would lead to at best thirty percent participation. However, for this percentage to strongly show load reduction based on price signals, the participating ratepayers would need smart thermostats²⁹. For ratepayers that do not have this technology, a method of providing notice (such as automated texts) would need to be developed.

In sum, current evidence does not show that Dynamic Pricing results in consistently shifting energy usage. Furthermore, it shows that that Dynamic Pricing is not popular with ratepayers, which means its aggregate effects may not be substantial. These conclusions mean that Cost should be comparably light for Pioneer to find the exercise a worthwhile endeavor.

b. Discussion – Commercial/Industrial

Much of the same logic for residential holds true that any Dynamic Pricing that any program would need to be opt-in rather than opt-out. Depending on the size of the customer, serious automation investments would need to be made. Furthermore, the only datapoint available to determine if there would be actual load reductions and shifts to off-peak hours demonstrates only a ten percent reduction compared to opted out customers. This may be because many commercial/industrial accounts cannot, for business reasons, shift their energy consumption (e.g. Target could not shut off its HVAC from 4 p.m. to 9 p.m. without discouraging shoppers from

²⁶ *Id.*

²⁷ Pamela Jordan Wildstein, *Quantifying the Impact of Override Behavior on the Performance of a Summer Direct Load Control Program*, Uni. Of Michigan, April 2022.

²⁸ *Id.*

²⁹ Carvallo, *supra* note 17, at Pg. 9

spending time in their store). In sum, there is not enough evidence to show that Dynamic Pricing for commercial/industrial customers would be effective in shifting energy consumption to off-peak hours.

ii. Costs

Pioneer will assess “Costs” based on the actual financial cost to Pioneer.

In creating a new rate class, per regulatory requirements, Pioneer would need to develop the class from the ground up rather than mirroring PG&E classes. This would require first a rate study to determine the amount of ratepayers likely to enroll in the class and the cost the rate needs to be to recoup all expenses related to the rate. The latter factor becomes considerably harder to determine when the rate is dynamic rather than fixed which in turn makes the study more complicated and more expensive. This study would also have to assess the impact the new dynamic rate would have on enrollment in existing classes.

Pioneer is contracted with Calpine to handle billing matters. To institute a new rate class, Pioneer would then need to amend that contract. Outside of the negotiation period, Calpine estimates that instating a dynamic pricing rate would take approximately six months or more. Concurrent with this implementation would be a marketing and outreach campaign to educate ratepayers on the rate and their ability to opt-in to the rate. This would require amending Pioneer’s contract with JSR Strategies, Pioneer’s marketing consulting vendor.

A. Discussion – Residential & Commercial/Industrial

As mentioned above, process costs for this initiative are unquantifiable as it would require amending several contracts with outside contractors. However, in assessing staff time to renegotiate the contracts and to participate in the initiative itself, the cost would be especially burdensome. Time taken to initiate the dynamic pricing rate and related customer education campaign takes from other pressing matters that Pioneer’s staff must handle. As mentioned above, Pioneer has a lean staff model, so staff generally have limited bandwidth outside of their normal job duties. Taking significant time away from core job functions could have unintended cascading effects which could impact Pioneer’s business model. In sum, the process costs are especially high for Pioneer to implement a Dynamic Pricing rate at this time. Pioneer will monitor and consider offering, as part of the triennial plan review, new IOU dynamic rates or our own rates and programs, as more data from the PG&E HFP Pilot is gathered and the rates are reviewed for cost effectiveness.

B. Technological Feasibility

Pioneer will assess “Technological Feasibility” based on whether the requisite technology is commercial and not experimental.

Pioneer is contracted with Calpine to handle billing matters. As a CCA, Pioneer does not have real time access to customer meters. Instead, meter data is handled by PG&E which is then transmitted to Calpine to generate customer invoices. In order to determine if it is technically feasible to implement hourly and sub-hourly rates, Pioneer would need to know if customer meters are capable of handling hourly and sub-hourly intervals in their service area (Advanced Metering Infrastructure). This information is not readily available and requires instituting a query through Calpine which Pioneer would have to pay for.

The ability to react to price signals depends entirely on notice. It is fundamentally unfair to expect a ratepayer to react to price signals if they are unaware of them. That is why there must be sufficient technology to 1) provide notice to customers and 2) enable automation devices to react to said price signals.

i. Discussion - Residential

Pioneer would not be able to accurately determine total technological feasibility without incurring additional cost. Furthermore, to ensure that the initiative is a success, Pioneer would need to contract with a third party for the ability to text opt-in customers when they need to shift their load and would need to help ratepayers obtain a smart thermostat. Pioneer would also need to work with PG&E, and Calpine to create a way to access meter data in real time. In sum, Dynamic Pricing may be technologically feasible for residential customers, but Pioneer cannot make an accurate determination without incurring additional costs.

ii. Discussion – Commercial/Industrial

Similarly, Pioneer cannot determine whether all Commercial/Industrial meters are capable of reading hourly and sub-hourly without incurring additional cost. Furthermore, Pioneer is not in a position to speculate on what technology upgrades for a Commercial/Industrial customer to be able to react and shift their energy consumption based on price signals. Also, as stated above, Pioneer would need to work with PG&E and Calpine to develop a way to access meter data in real time. In sum, Dynamic Pricing may be technically feasible for Commercial/Industrial customers, but Pioneer cannot make an accurate determination without incurring additional costs.

C. Benefits to the Grid

Pioneer will assess “Benefits to the Grid” on whether the proposed rate will reduce periods of high demand which constrain the grid.

An opt-in dynamic pricing rate may provide many benefits to the grid. CAISO energy prices are subject to supply and demand economic principles. Periods of high pricing are due to substantially greater demand than supply. A dynamic pricing rate would incentivize ratepayers to reduce their demand and there are supply constraints. Similarly, transmission costs are subject to supply and demand economic principles. To reduce demand for energy generation would also reduce demand

for energy transmission. Finally, a dynamic pricing rate could reduce greenhouse gas emissions as times of high demand are when fossil fuels are generally used the most.

i. Discussion - Residential

There are many theoretical benefits to the grid. If these benefits are realized, it would be in line with Pioneer's commitment to keep costs low for their ratepayers. However, these benefits are purely speculative as there is no reliable data showing Dynamic Pricing has resulted in consistent reductions in peak demand.

ii. Discussion – Commercial/Industrial

The same logic also applies to Commercial/Industrial customers. The only reliable data point we have demonstrated a ten percent reduction during peak times. This is not enough data to draw a determination that Dynamic Pricing will provide consistent benefits to the grid.

D. Benefits to Customers

Pioneer will assess "Benefits to Customers" on whether the proposed rate will result in lower costs to Pioneer customers.

Dynamic Pricing provides an incentive for customers to shift their energy consumption to times when it is cheaper. As mentioned above, this similarly impacts transmission prices. However, there are currently no available studies showing consistent energy savings when customers are on a Dynamic Pricing rate. Of the studies Pioneer reviewed, all were designed to show potential savings – not demonstrate actual savings.

i. Discussion – Residential & Commercial/Industrial

Any benefits to customers of either class are purely speculative. Pioneer has been unable to find any studies that show consistent energy consumption shifting due to Dynamic Pricing. Furthermore, Pioneer has not found any studies demonstrating consistent savings to a ratepayer by utilizing a Dynamic Pricing rate.

E. Equity

Pioneer will assess "Equity" on whether the proposed rate will disproportionately burden certain populations.

Customers may see benefits on their bills. The ability to shift energy consumption to periods of lower costs would mean lower bills. However, as mentioned above, for the program to truly be successful it would require the ability of the ratepayer to receive notice and for them to have access to smart thermostat technology which can react to price signals.

i. Discussion – Residential & Commercial/Industrial

The equitable benefits of a dynamic price rate are contingent on many factors. The evidence that these factors aligning will result in the desired behavior is so far not substantive.

As noted above, utility consumer advocates have noted that Dynamic Pricing is disproportionately burdensome on the poor. The poor are more likely to have less efficient appliances and would have to pay for text messages sent to them to receive notice of the price fluctuations. During heat wave events when air conditioning must be used for health reasons, the poor would be forced to choose between high rates or their own health. If a low-income customer mistakenly leaves an appliance on, the resulting bill could be catastrophic, having direct impacts on their budgetary considerations for food, health, and shelter³⁰. In sum, the equitable benefits are hypothetical while the burden on the poor is concrete.

F. Conclusion - Rates

The LMS goals, articulate in §1623.1(a)(1) of the amended regulations, are to encourage the use of electricity at off-peak hours, encouraging the control of daily and seasonal peak loads to improve electric system efficiency and reliability, lessening, or delaying the need for new electrical capacity, and reducing fossil fuel consumption and greenhouse gas emissions. In weighing all the factors (Cost Effectiveness, Technological Feasibility, Benefits to the Grid, Benefits to Customers, and Equity), implementing a marginal cost-based rate would not be cost effective at achieving these goals. Studies show that at most thirty percent of residential ratepayers would utilize the program with the actual outcome in reducing demand being highly contingent on access to certain technologies. This outcome is also based solely on the reporting of one IOU. Furthermore, Pioneer has not seen any studies showing that Dynamic Pricing works in consistently shifting consumption. In contrast, Pioneer would need to invest significant money and staff time to ensure that the program is a success. Furthermore, Pioneer cannot ascertain the technological feasibility of instituting the rate without incurring additional cost. As noted above, a key issue with technological feasibility is that Pioneer does not have real time access to the meters in its service area. There may be benefits to the grid, but studies show that these benefits are not consistent. For customers, Dynamic Pricing could be beneficial, but it could equally be punitive and lead to inequitable results for lower income customers. For these reasons, Pioneer will not institute a marginal cost-based rate at this time. In the alternative, Pioneer will proceed with instituting the following load flexibility programs and offering PG&E's HFP Pilot, the expanded marginal cost-based CalFUSE pilot authorized in CPUC Decision D. 24-01-032..

³⁰ Stephanie Kelly, Peter Szekely, Jennifer Hiller, *Texas freeze raises concerns about 'ridiculous' variable rate bills*, Reuters, Fe. 22, 2021

3. Load Flexibility Programs

As mentioned previously, Pioneer has a lean staff model. The Pioneer Programs Manager position was not filled until July 2023. Pioneer staff have developed the following roadmap for program implementation of programs that enable automated response to marginal cost signals. These programs are analyzed under the same framework as Dynamic Pricing (Cost Effectiveness, Cost, Technological Feasibility, Benefits to the Grid, Benefits to Customers, and Equity). Effectiveness and Cost will be truncated. They will be broken down into the following categories and analyzed together:

- Programs that help customers obtain hardware that helps shift energy usage.
- Programs that incentivize energy usage behaviors.
- Existing government programs not administered by Pioneer staff.

I. Hardware Programs

The following are programs that help customers obtain hardware that help customers shift their energy usage. The table has the name of the program, a brief description of the program, Pioneer staff's progress on the program, and the expected date of implementation:

Program Provider	Program Description	Progress	Date of Implementation
Participate Energy	Pioneer customers contract with Participate Energy for leased home solar and storage products. These customers are aggregated into a virtual power plant. It shifts energy usage by charging the battery when times are cheapest (compared to self-generation) and then uses power from the battery at high-cost hours.	Pioneer Board approved program	Second Quarter of 2024
Thule Energy Storage	Pioneer customers install Thule's proprietary technology in line with the air conditioning system at low upfront cost to the customer. This	Under Development	Second Quarter of 2025

	technology freezes water into ice during periods of low demand and then thaws the ice as part of the air conditioning system during periods of high demand.		
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A. Cost Effectiveness

Pioneer will assess “Effectiveness” whether the program will consistently lead to the desired load shifting outcome. “Cost” will also be assessed based on the actual cost to Pioneer.

These are all programs that have demonstrated effectiveness in consistently shifting energy habits without incurring significant costs from Pioneer. Participate Energy’s program to help customers install a battery on their home allows for customers to pull from their own reserve of power during high-cost times. Similarly, Thule Energy Storage would use periods of cheap grid energy to freeze ice, which in turn is used in conjunction with air conditioning to lessen the amount of energy needed by the air conditioning unit during periods of high energy cost. Pioneer believes that while none of these programs is a silver bullet in consistently reducing demand, when aggregated together they can provide consistent demand reduction. Furthermore, since these programs are done in partnership with a third party, Pioneer would not need to invest significant time and resources to get the programs running.

B. Technological Feasibility

Pioneer will assess “Technological Feasibility” based on whether the requisite technology is commercial and not experimental.

All listed programs in the section rely on proven technology. Participate Energy is partnered with Tesla to use Tesla’s battery and photovoltaic technology. Thule Energy Storage’s technology have logged more than 60 million operating hours at over 300 locations since 2005³¹. Thule Energy Storage has previously partnered with Southern California Edison for a successfully implemented load shifting program relying on their technology.

C. Benefits to the Grid

³¹ <https://www.thuleenergystorage.com/projects/>, last visited March 7, 2024.

Pioneer will assess “Benefits to the Grid” on whether the proposed rate will reduce periods of high demand which constrain the grid.

The programs mentioned have a proven track record of providing benefits to the grid. Residential solar and storage helps reduce demand from the grid during high demand hours and residents can draw from their battery instead of the grid³². Similarly, the Thule Ice Energy shifts energy use for air conditioning to low demand hours.

D. Benefits to Customers

Pioneer will assess “Benefits to Customers” on whether the proposed programs will result in lower costs to Pioneer customers.

These programs were specifically sought out due to their ability to help Pioneer customers. This program allows Pioneer customers to have solar and storage systems that normally would not be able to. As mentioned above, Participate Energy handles all maintenance and upkeep of the system and covers upfront installation costs. Thule Energy Storage would also be administered at low upfront cost to the customer.

E. Equity

Pioneer will assess “Equity” on whether the proposed program will disproportionately burden certain populations.

These programs are also structured to reduce upfront costs for customers which means that lower income individuals can take advantage of the program. This creates an equal opportunity for all populations to participate and realize the benefits of these load shifting programs.

F. Conclusion – Hardware Programs

The LMS goals, articulate in §1623.1(a)(1) of the amended regulations, are to encourage the use of electricity at off-peak hours, encouraging the control of daily and seasonal peak loads to improve electric system efficiency and reliability, lessening or delaying the need for new electrical capacity, and reducing fossil fuel consumption and greenhouse gas emissions. In weighing all the factors (Cost Effectiveness, Technological Feasibility, Benefits to the Grid, Benefits to Customers, and Equity), these programs will achieve the aims of the LMS regulations in a consistently effective manner without leading to inequitable results. They are cost effective as they rely on proven technologies and do not require substantial staff time to implement. Similarly, they are technologically feasible as the technologies are commercially available and not experimental. Studies show they provide proven benefits to the grid. Customers are able to benefit as these programs are designed to be provided to customers with little or no upfront cost.

³² Hou Sheng Zhou, *A case study on the behavior of residential battery energy storage systems during network demand peaks*, Renewable Energy, Dec. 2021.

Finally, for the same rationale, these programs are equitable as lower income ratepayers can access the programs at little or no upfront cost.

II. Incentive Based Program Paired with Software

Pioneer believes that an incentive-based program would be more successful in consistently shifting energy usage than a punitive based one. With this in mind, Pioneer staff has been meeting with Sonoma Clean Power staff to implement a program similar to their GridSavvy program. This program offers customers that reduce their load during peak hours compensation that can be redeemed or donated to a participating nonprofit organization. An alert is sent to participating customers in advance of an anticipated peak load period. The compensation is based on kWh reduced during the event and there is no penalty if the customer decides to continue their usage as usual. This program is expected to launch by the second quarter of 2025.

In conjunction with this program, Pioneer is exploring leveraging software to automate smart appliances. As mentioned above, studies show that technology is required to consistently shift load for demand response. The software would also be combined with an EV charging optimization program.

The table has the name of the program, a brief description of the program, Pioneer staff's progress on the program, and the expected date of implementation:

Program Provider	Program Description	Progress	Date of Implementation
Pioneer would need to issue an RFO for a provider.	Incentivization based program which pays Pioneer customers who shift their energy usage during peak demand times.	Under Development	Second Quarter of 2025
Virtual Peaker	Operates a Distributed Energy Resource Management System (DERMS) platform. This platform connects with customers smart devices to help shift energy habits to low-cost hours.	Under Development	Second Quarter of 2026
Pioneer would need to issue an RFO for a provider.	EV Charging Optimization.	Under Development	Fourth Quarter of 2024

A. Cost Effectiveness

Pioneer will assess “Effectiveness” whether the program will consistently lead to the desired load shifting outcome. “Cost” will also be assessed based on the actual cost to Pioneer.

Studies show that incentive-based approaches effectively reduce peak load during heatwave events without harm to vulnerable groups³³. Notably, in a study of incentive-based demand response in China, researchers found that the repeated and frequent implementation of the program did not result in an attenuation of the effect³⁴. This demonstrates that incentive-based demand response can lead to consistent results in shifting energy usage.

In order to gauge the complete financial cost and solicit competitive proposals, Pioneer would need to issue a Request for Offers. This process aims to assess the feasibility and pricing structures associated with implementing an incentive-based program to shift energy usage. At this current juncture, in preliminary conversations with other CCAs with similar programs, costs are not presumed to be substantial.

B. Technological Feasibility

Pioneer will assess “Technological Feasibility” based on whether the requisite technology is commercial and not experimental or theoretical.

These programs have been shown to be technologically feasible in other CCA service areas³⁵. These appliances and software have been on the market now for many years. If the program intends to make the periods of load shifting more granular (i.e sub-hourly) Pioneer would need to determine how many meters in our service area are AMI.

C. Benefits to the Grid

Pioneer will assess “Benefits to the Grid” on whether the proposed programs will reduce periods of high demand which constrain the grid.

These programs will help shift load during peak load hours which in turn reduces strain on the grid. As seen in the previously mentioned study, incentive-based programs result in consistent load reduction³⁶. These load reductions, especially in periods of high demand, mean less price volatility and lowers the change of a brown out.

³³ Wang, Lu, Want, Qiu, Zhang, Li, Li, and Zhao, *Incentive based emergency demand response effectively reduces peak load during heatwave without harm to vulnerable groups*, Nature Communications, Oct. 2023

³⁴ *Id.*

³⁵ <https://sonomacleanpower.org/programs/gridsavvyrewards>, last viewed March 7, 2024.

³⁶ Wang, *supra* at note 34.

D. Benefits to Customers

Pioneer will assess “Benefits to Customers” on whether the proposed programs will result in lower costs to Pioneer customers.

This program will provide customers with the ability to either earn money from their shift in energy consumption or donate to a participating nonprofit. Rather than being punitive, these programs reward behavior with money that can go back into their account. Though this rebate program, Pioneer customers will realize lower costs.

E. Equity

Pioneer will assess “Equity” on whether the proposed program will disproportionately burden certain populations.

As mentioned above, studies show that these types of programs are more equitable than punitive based programs³⁷. Rather than risk losing money, they can instead earn money by changing their habits. A customer will not have to worry about a large bill due to factors outside their control (say a medically necessary reason to keep an air conditioner running). Because of this model, no population can be disproportionately burdened with the costs of shifting energy usage.

F. Conclusion - Incentive Based Program Paired with Software

The LMS goals, articulate in §1623.1(a)(1) of the amended regulations, are to encourage the use of electricity at off-peak hours, encouraging the control of daily and seasonal peak loads to improve electric system efficiency and reliability, lessening or delaying the need for new electrical capacity, and reducing fossil fuel consumption and greenhouse gas emissions. In weighing all the factors (Cost Effectiveness, Technological Feasibility, Benefits to the Grid, Benefits to Customers, and Equity), these programs will achieve the aims of the LMS regulations in a consistently effective manner without leading to inequitable results. They are cost effective as studies show incentive based cost shifting programs lead to consistent load shifting. The programs rely on commercially available technology which means they are technologically feasible. Studies show that these types of programs lead to consistent load shifting behavior which provides benefits to the grid. The programs are beneficial to customers as they are rewarded, rather than penalized for shifting their behavior. Finally, for the same reason, these programs are equitable as low-income individuals are able to avoid the risk of a catastrophic electricity bill.

III. Existing Government Programs

The table has the name of the government program, a brief description of the program, Pioneer staff’s progress on the program, and the expected date of implementation:

³⁷ *Id.*

Program Name	Program Description	Progress	Date of Implementation
AgFIT	The Flexible Irrigation Pilot Program for Agriculture (AgFIT) was successfully piloted by Valley Clean Energy. The D.24-01-032 ruling expanded the program to all agricultural customers and allows all CCAs in PG&E service territory to participate until its conclusion on December 31, 2027. This program would be administered by PG&E and would use automation technology and/or a notice to shift agriculture pumping times.	Pioneer must submit an Advice Letter stating their intent to participate by March 2025	The Second Quarter of 2025
ELRP	A program administered by the IOUs which pays customers who voluntarily reduce electricity demand during a grid emergency. The program also pays customers who produce energy during a grid emergency under certain conditions.	Currently ongoing	Set to expire December 31, 2025

A. Cost Effectiveness

Pioneer will assess “Effectiveness” whether these programs consistently lead to the desired load shifting outcome. “Cost” will also be assessed based on the actual cost to Pioneer.

These programs have been proven to be effective at shifting energy consumption to off-peak hours for irrigation. It is due to their effectiveness that CPUC expanded these programs³⁸. Since these programs are administered by the IOUs, they would be administered at no cost to Pioneer.

B. Technological Feasibility

Pioneer will assess “Technological Feasibility” based on whether the requisite technology is commercial and not experimental or theoretical.

Since these are programs that have already been piloted or are currently running, they have proven technological feasibility. Any requisite technology is commercially available.

C. Benefits to the Grid

Pioneer will assess “Benefits to the Grid” on whether the proposed programs will reduce periods of high demand which constrain the grid.

The AgFIT program shifts load to times of low demand which reduces strain on the grid. The ELRP is a more traditional demand response program but is incentive based rather than punitive. Both are designed to reduce demand from the grid which helps stabilize prices and reduce the risk of brown out.

D. Benefits to Customers

Pioneer will assess “Benefits to Customers” on whether the proposed programs will result in lower costs to Pioneer customers.

Both of these programs provide benefits to customers as they reduce demand during peak periods. Reductions like help stabilize costs which in turn helps keep Pioneer rates low. Furthermore, Pioneer customers that are part of the ELRP program are compensated for the reductions in energy usage, which in turn means they realize lower energy costs.

E. Equity

Pioneer will assess “Equity” on whether the proposed program will disproportionately burden certain populations.

Both of these programs are opt-in incentive based rather than punitive, fostering a more balance and fair outcome. This approach not only encourages compliance but also promotes a positive and cooperative relationship between customers and the LSE, leading to outcomes seen as fairer and more equitable. As mentioned previously, incentive-based programs lead to more equitable outcomes³⁹.

³⁸ *Staff Proposal on Existing Dynamic Rate Pilot Expansion*, R.22-07-005, Aug. 15, 2023.

³⁹ Wang, *supra* at note 34.

F. Conclusion – Existing Government Programs

The LMS goals, articulate in §1623.1(a)(1) of the amended regulations, are to encourage the use of electricity at off-peak hours, encouraging the control of daily and seasonal peak loads to improve electric system efficiency and reliability, lessening or delaying the need for new electrical capacity, and reducing fossil fuel consumption and greenhouse gas emissions. In weighing all the factors (Cost Effectiveness, Technological Feasibility, Benefits to the Grid, Benefits to Customers, and Equity), these programs will achieve the aims of the LMS regulations in a consistently effective manner without leading to inequitable results. These programs are cost effective as the CPUC has found them to be effective at consistently shifting load. They are also not administered by Pioneer, so cost is negligible. As they are existing programs, they are shown to be technologically feasible. The programs provide proven benefits to the grid by shifting load times away from peak periods. Since these are incentive based, they provide benefits to customers as they see a gain from shifting behavior rather than a penalty. Finally, for a similar rationale, they are incentive based so the programs do not lead to inequitable outcomes.

4. Summary

The amended LMS regulations require Pioneer to assess implementing a marginal cost-based rate, and if that implementation would result in the goals of the regulation. These goals are to encourage the use of electricity at off-peak hours, encouraging the control of daily and seasonal peak loads to improve electric system efficiency and reliability, lessening, or delaying the need for new electrical capacity, and reducing fossil fuel consumption and greenhouse gas emissions. In assessing the if the implementation will achieve these goals, Pioneer must weigh cost effectiveness, technological feasibility, benefits to the grid, benefits to customers, and equity. If, after weighing these factors, Pioneer chooses not to implement a marginal cost-based rate, Pioneer must instead provide load shifting programs designed to achieve the previously state goals.

Pioneer assessed the implementation of a marginal cost-based rate and found that the rate scheme is not cost effective in achieving the stated goals of the regulation. There is not substantive enough evidence that a marginal cost-based rate would lead to consistent energy shifting behavior for the large cost that would be incurred by Pioneer. Currently, Pioneer does not have access to real time meter data which is required for the implementation of a rate like this. Accessing that data would require significant costs and staff time for Pioneer. The rate also may be punitive and lead to inequitable outcomes for lower income customers. With that in mind, Pioneer has developed the following list of programs which will achieve the goals of the regulation:

Program Provider	Program Description	Progress	Date of Implementation
Participate Energy	Pioneer customers contract with Participate Energy for leased home solar and storage products	Pioneer (GridGen) launched in 2024.	Fourth Quarter of 2024 Expanded in

	with no upfront costs and no credit check. Customers are aggregated into a virtual power plant that shifts energy usage by charging the battery when rates are lower (compared to self-generation) and then uses power from the battery at higher-cost hours.	The program was expanded to offer battery-only retrofits and access for CARE/FERA customers. To date: • 6 completed installs • 11 customers achieved permission to operate (PTO) • 87 customers in the active pipeline	Third Quarter of 2025
Demand Response	Incentivize-based program that pays customers who shift their energy usage during times of peak demand/grid strain.	Program (PowerShift Rewards) launched fall 2024 and runs May through October. Customers receive an incentive for enrolling in the program and additional incentives for reducing energy consumption during times of peak demand or when the grid is strained. To date, more than 1,400 customers are enrolled, resulting in a 1.4 MWh energy reduction.	Third Quarter of 2024
PG&E	The Hourly Flex Pricing Pilot Program, formerly known as AgFIT, was successfully piloted by Valley Clean Energy. The D.24-01-032 ruling expanded the program to all agricultural customers and allows all CCAs in PG&E service territory to participate until its conclusion on December 31, 2027. This program uses	Program launched in late 2024, but the application period closed abruptly in spring. Applications period was reopened in spring due to CCA concerns. However, incentive funding is limited and likely will reach capacity soon. Pioneer currently has two customers with a	Fourth Quarter of 2024

	automation technology and/or a notice to shift agriculture pumping times.	combined 19 meters enrolled in the program.	
Ice Energy Storage	Pioneer customers install Ice Energy's technology to the air conditioning unit at low upfront costs. The technology freezes water into ice during periods of low energy demand, then uses the ice during periods of high demand to reduce energy use by taking pressure off the condenser, thereby using less energy.	Program launched in spring • 22 Participation Agreements under review ◦ Roughly 130 units would be installed • 35 site surveys	Second Quarter of 2025
Pioneer would issue an RFO for a provider or partner with an existing project	EV Charging Optimization/Accessibility	Under development	Third Quarter of 2026

(Updated September 2025)

Finally, Pioneer has been working with the other load serving entities (LSEs) on creating the statewide RIN tool pursuant to 20 CCR Section 1623(c). A proposed plan for the tool was submitted to the CEC for review on October 1, 2024. Pioneer will continue to work with the other LSEs and the CEC to implement and maintain the statewide RIN tool in a timely manner subject to the tool's approval by the CEC.

Load Management Standards Compliance Plan (Revised)

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1. Introduction

Pursuant to California Energy Commission’s (CEC) amended Load Management Standards (LMS), this document (Plan) demonstrates how Pioneer Community Energy (Pioneer) intends to meet the articulated goals of the regulation. Pioneer does not accept CEC’s belief that they hold jurisdiction over Community Choice Aggregators (CCAs), and it is participating in this decision voluntarily.

I. About CEC & LMS

The CEC was established and granted specific load planning and management powers by the Warren-Alquist Act of 1974 (known as Load Management Standards). In 2022, LMS was amended, and new regulations were implemented with the broader goals of encouraging the use of electrical energy at off-peak hours, encouraging the control of daily and seasonal peak loads to improve electric system efficiency and reliability, lessening or delaying the need for new electrical capacity, and reducing fossil fuel consumption and greenhouse gas emissions¹.

The following is Pioneer’s roadmap for compliance in the form of a table listing the new requirements, their deadlines, and their respective statuses:

Relevant Section	Requirement	Deadline	Status
§1623.1(c)	Upload time-dependent rates in the Market Informed Demand Automation Server (MIDAS)	July 1, 2023	Complete
§1623.1(a)(1)	Evaluate and implement a marginal cost-based rate or, in the alternative, a plan of programs designed to achieve the same goals	April 1, 2024	Addressed with this plan
§1623.1(a)(3)(A)	Submit the plan to CEC within 30 days of Board adoption. Respond to any requests for additional information or requests for plan revisions within 90 days.	30 days after Pioneer Board approval	In Progress Complete
§1623(c)(4)	Within 1 year of the LMS effective date,	April 1, 2024	In Progress Complete

¹ §1623.1(a)(1).

	provide customers access to their Rate Identification Numbers (RIN) on billing statements and in online accounts using both and QR code.		
§1623(c)(2)(A)	Develop and submit to the CEC, in conjunction with the other obligated utilities, a single statewide standard tool for authorized rate data access by third parties along with the terms and conditions for use of the tool. Upon CEC approval, the tool will be live and obligated LSEs must maintain and improve the tool.	October 1, 2024	In Progress
§1623.1(b)(3)	Submit to CEC a list of load flexibility programs deemed cost-effective with at least one option for automating response to MIDAS signals for each customer class.	October 1, 2024	In Progress Complete
§1623.1(a)(3)(C)	Submit annual reports to CEC demonstrating implementation of the Plan, as approved by the Board.	April 1, 2025, and annually thereafter One year after compliance plan adoption and annual thereafter	In Progress
§1623.1(b)(2)	Submit at least one marginal cost-based rate or program to the Pioneer Board for approval for any customer class where such a rate will materially reduce peak load.	July 1, 2025	In Progress
§1623.1(b)(5)	Conduct a public information campaign to inform and educate customers on why marginal cost-based rates or load flexibility	No deadline provided	In Progress

	programs are needed, how they are used, and how these rates and programs can save customers money.		
§ 1623.1(a)(1)(C)	Review the Plan at least once every 3 years after the Plan is adopted by the Pioneer board. Submit any updates of the Plan to the Board if there is a material change.	Triennially	Ongoing

(Updated September 2025)

II. About Pioneer

Pioneer is a CCA that serves unincorporated Placer and El Dorado County along with the Town of Loomis and the cities of Auburn, Colfax, Grass Valley, Lincoln, Nevada City, Placerville, and Rocklin². Pioneer is governed by a Board of Directors made up of elected officials from its member agencies³. It currently serves approximately 166,000 accounts consuming approximately 2,000 gigawatt hours annually. Pioneer has a relatively small staff compared to other CCAs⁴. Currently, the staff is made up of fourteen individuals. Many necessary business functions are handled by outside contractors.

As mentioned previously, per the amended LMS regulations Pioneer must provide a plan that describes how Pioneer will meet the goals of encouraging the use of electrical energy at off-peak hours, encouraging the control of daily and seasonal peak loads to improve electric system efficiency and reliability, lessening or delaying the need for new electrical capacity, and reducing fossil fuel consumption and greenhouse gas emissions⁵. Specifically, the plan must evaluate marginal cost-based rates for each customer class in terms of cost effectiveness, equity, technological feasibility, benefits to the grid, and benefits to customers⁶. After weighing these factors, Pioneer may decide that marginal cost-based rates are not necessary and may instead propose programs that enable automated response to marginal cost signal(s) for each customer class and evaluate them based on the previously mentioned factors⁷.

² Amendment No. 5 to the Amended and Restated Joint Exercise of Powers Agreement for Pioneer Community Energy, Res. No. 2022-26 (2022).

³ *Id.*

⁴ <https://pioneercommunityenergy.org/>, (last visited March 7, 2024).

⁵ § 1623.1(a)(1).

⁶ § 1623.1(a)(1)(A).

⁷ § 1623.1(a)(1)(B).

III. Format of Analysis

The LMS Regulation requires an analysis of marginal time-based rates and any subsequent programs for each customer class⁸. In consideration of CEC guidance, Pioneer has divided Customer Class into two distinct classes – residential and industrial/commercial. Pursuant to the LMS regulations, marginal time-based rates and the subsequent programs will be analyzed under the following factors:

- Cost Effectiveness,
- Technological Feasibility,
- Benefits to the Grid,
- Benefits to Customers, and
- Equity.

Cost Effectiveness will be broken down individually into Cost and Effectiveness. Where analysis and discussion for each customer class is substantially the same, the sections will be combined.

2. Rates

CCA governing boards have jurisdiction over rate setting for their customers⁹. This provides CCAs with flexibility in how they want to procure energy and correspondingly set rates for the communities that they serve. With that concept in mind, Pioneer has a strong emphasis on keeping ratepayers' costs low.

Implementing new rates involve considerable costs to Pioneer. The Pioneer Board of Directors (Pioneer Board) is required to review rates annually¹⁰. However, staff can bring suggested rate changes first to the Finance Committee and then to the Board of Directors. In assessing rates, Pioneer has many considerations. These include traditional business costs such as operating expenses, paying for power supply and regulatory products, and maintaining creditworthiness. However, unlike traditional utilities, CCAs must also consider the ability of a ratepayer to opt out of service. Because of this, Pioneer (like many other CCAs) relies on a strategy of mirroring Large Investor-Owned Utility (IOU) rates with a targeted discount.

The LMS regulations requires the Pioneer Board to assess for approval at least one marginal cost-based rate by June 30, 2027¹¹. Pioneer may apply for approval of a marginal cost-based rate

⁸ §1623.1(a)(1)(A).

⁹ Public Utilities Code Section 366.2(c)(3).

¹⁰ *Financial Policies*, (Oct. 21, 2021), <https://pioneercommunityenergy.org/wp-content/uploads/2022/04/2021-10-21-Financial-Policies.pdf>.

¹¹ §1623.1(b)(2).

offered by PG&E¹². PG&E stated their intent to provide one marginal cost-based rate by January 2027 which Pioneer can mirror upon its implementation¹³. In the meantime, Pioneer commits to making a marginal cost-based rate available to its agricultural customers in the form of PG&E's Hourly Flex Pricing Pilot (HFP Pilot), formerly referred to as the Flexible Irrigation Pilot Program for Agriculture (AgFIT). The HFP Pilot is an expanded marginal cost-based PG&E CalFUSE pilot authorized in CPUC Decision D. 24-01-032. By offering the HFP Program, Pioneer is providing one marginal cost-based rate for its agricultural customers. With that in mind, per the requirements of the regulations, Pioneer must assess developing a marginal cost-based rate outside of mirroring one developed by PG&E. Pioneer will consider offering further marginal cost-based rates as appropriate and consistent with its authority over its own rates, subject to the limitations identified below.

I. Marginal Cost-Based Rates

Marginal cost is calculated as “the sum of the marginal energy cost, the marginal capacity cost (generation, transmission, and distribution), and any other appropriate time- and location-dependent marginal costs, including the locational marginal cost of associated greenhouse gas emissions, on a time interval of no more than one hour¹⁴. Energy cost computations shall reflect locational marginal cost pricing as determined by the associated balancing authority, such as the California Independent System Operator, the Balancing Authority of Northern California, or other balancing authority¹⁵. Marginal capacity cost computations shall reflect the variations in the probability and value of system reliability of each component (generation, transmission, and distribution).¹⁶” There is an immediate issue with the provided definition of marginal cost-based rates – Pioneer does not control the transmission and distribution in its service territory so it cannot accurately compute a marginal cost-based rate. Additionally, it is hard to quantify greenhouse gas emission costs. It appears that the regulations intend for these rates to be dynamic, responding to demand on the grid. For ease of reference, this Plan will refer to marginal cost-based rates as Dynamic Pricing.

A. Cost Effectiveness

As mentioned previously, Pioneer relies heavily on outside contractors. Any implementation of dynamic pricing would require amending contracts with multiple contractors. This means that overall cost will be unquantifiable, as the contract amendments will need to be negotiated. To weigh cost against effectiveness, Pioneer believes it is best to assess the effectiveness of Dynamic Pricing first in order to ascertain any unforeseen costs.

¹² *Id.*

¹³ 2023 COMPLIANCE PLAN for the LOAD MANAGERMENTS STANDARDS, D 23-LMS-01.

¹⁴ §1623.1(b)(1).

¹⁵ *Id.*

¹⁶ *Id.*

i. Effectiveness

Pioneer will analyze “Effectiveness” on whether the implemented rate will consistently lead to the desired load shifting outcome.

In November of 2023, Lawrence Berkeley Lab released a report titled "The use of price-based demand response as a resource in electricity system planning."¹⁷ This paper analyzed twelve utilities use of time-based rates. They included Time of Use Pricing, Real Time Pricing, Variable Peak Pricing, Critical Peak Pricing, and Critical Peak Rebate in their analysis of price-based demand response.

Approximately one-third of the utilities studied did not include price-based demand response in the Integrated Resource Plan (IRP) as they found that there was not sufficient participation to deem it significant in impacting demand¹⁸. Furthermore, of the customers that did participate, their response to price signals was often erratic and hard to predict¹⁹.

In studying participation rate, one utility studied showed a five-fold increase in customer participation from an opt-out model compared to an opt-in model²⁰. This shows that these pricing schemes are generally unpopular for ratepayers. Consumer advocates have raised serious concerns about opt-out pricing as they can be especially burdensome for low-income ratepayers (See *Equity*). For CCAs, an opt-out approach presents serious business risks as the ratepayer may choose to opt out of the CCA completely if they are upset with the dynamic rate. A large amount of unexpected opt-outs of CCA service have credit implications which in turn leads to higher procurement costs. This in turn leads to higher rates in order to maintain the financial stability of the CCA.

For the opt-in model, participation ranged from three percent to thirty percent²¹. Similarly, a 2016 Department of Energy sponsored study of several utilities found a fifteen percent opt-in rate for dynamic pricing rates²². This is consistent with several other studies mentioned in the Lawrence Berkeley Lab report, with no dynamic pricing rate exceeding thirty percent enrollment for opt-in participation²³.

In the Lawrence Berkeley Lab study, only one utility reported load reduction for opt-in participation²⁴. Residential ratepayers of that utility showed load reduction levels eighty to ninety percent lower than other residential customers²⁵. However, for commercial and industrial

¹⁷ Juan Pablo Carvallo and Lisa Schwartz, *The use of price-based demand response as a resource in electricity system planning*, Energy Markets & Policy, Nov. 2023.

¹⁸ *Id.* at Pg. 5

¹⁹ *Id.*

²⁰ *Id.* at Pg. 7.

²¹ *Id.*

²² Dept. of Energy, *Customer Acceptance, Retention, and Response to Time-Based Rates from the Consumer Behavior Studies*, Electricity Delivery & Energy Reliability, Nov. 2016.

²³ Carvallo, *supra* note 17.

²⁴ *Id.*

²⁵ *Id.*

ratepayers, the utility found only a ten percent higher load reduction compared to other commercial and industrial ratepayers²⁶.

As mentioned previously, studies show inconsistent results in using dynamic pricing to achieve consistent demand response. One study showed that automated demand response programs are overridden on average 14% of the time²⁷. This study also found that the longer a demand response event lasts, the more likely automation will be overridden with events lasting from the two to four-hour range being overridden up to 30% of the time²⁸.

a. Discussion - Residential

To offset any risk to Pioneer's business model, any dynamic pricing rate would need to be opt-in. As mentioned above, an opt-out model could lead to a large number of unexpected opt-outs of CCA service. This would have credit implications which in turn would increase procurement costs for the CCA. These costs would then be passed on to the remaining ratepayers in future rate changes, which is a fundamentally inequitable result.

As the studies show, an opt-in model would lead to at best thirty percent participation. However, for this percentage to strongly show load reduction based on price signals, the participating ratepayers would need smart thermostats²⁹. For ratepayers that do not have this technology, a method of providing notice (such as automated texts) would need to be developed.

In sum, current evidence does not show that Dynamic Pricing results in consistently shifting energy usage. Furthermore, it shows that that Dynamic Pricing is not popular with ratepayers, which means its aggregate effects may not be substantial. These conclusions mean that Cost should be comparably light for Pioneer to find the exercise a worthwhile endeavor.

b. Discussion – Commercial/Industrial

Much of the same logic for residential holds true that any Dynamic Pricing that any program would need to be opt-in rather than opt-out. Depending on the size of the customer, serious automation investments would need to be made. Furthermore, the only datapoint available to determine if there would be actual load reductions and shifts to off-peak hours demonstrates only a ten percent reduction compared to opted out customers. This may be because many commercial/industrial accounts cannot, for business reasons, shift their energy consumption (e.g. Target could not shut off its HVAC from 4 p.m. to 9 p.m. without discouraging shoppers from

²⁶ *Id.*

²⁷ Pamela Jordan Wildstein, *Quantifying the Impact of Override Behavior on the Performance of a Summer Direct Load Control Program*, Uni. Of Michigan, April 2022.

²⁸ *Id.*

²⁹ Carvallo, *supra* note 17, at Pg. 9

spending time in their store). In sum, there is not enough evidence to show that Dynamic Pricing for commercial/industrial customers would be effective in shifting energy consumption to off-peak hours.

ii. Costs

Pioneer will assess “Costs” based on the actual financial cost to Pioneer.

In creating a new rate class, per regulatory requirements, Pioneer would need to develop the class from the ground up rather than mirroring PG&E classes. This would require first a rate study to determine the amount of ratepayers likely to enroll in the class and the cost the rate needs to be to recoup all expenses related to the rate. The latter factor becomes considerably harder to determine when the rate is dynamic rather than fixed which in turn makes the study more complicated and more expensive. This study would also have to assess the impact the new dynamic rate would have on enrollment in existing classes.

Pioneer is contracted with Calpine to handle billing matters. To institute a new rate class, Pioneer would then need to amend that contract. Outside of the negotiation period, Calpine estimates that instating a dynamic pricing rate would take approximately six months or more. Concurrent with this implementation would be a marketing and outreach campaign to educate ratepayers on the rate and their ability to opt-in to the rate. This would require amending Pioneer’s contract with JSR Strategies, Pioneer’s marketing consulting vendor.

A. Discussion – Residential & Commercial/Industrial

As mentioned above, process costs for this initiative are unquantifiable as it would require amending several contracts with outside contractors. However, in assessing staff time to renegotiate the contracts and to participate in the initiative itself, the cost would be especially burdensome. Time taken to initiate the dynamic pricing rate and related customer education campaign takes from other pressing matters that Pioneer’s staff must handle. As mentioned above, Pioneer has a lean staff model, so staff generally have limited bandwidth outside of their normal job duties. Taking significant time away from core job functions could have unintended cascading effects which could impact Pioneer’s business model. In sum, the process costs are especially high for Pioneer to implement a Dynamic Pricing rate at this time. [Pioneer will monitor and consider offering, as part of the triennial plan review, new IOU dynamic rates or our own rates and programs, as more data from the PG&E HFP Pilot is gathered and the rates are reviewed for cost effectiveness.](#)

B. Technological Feasibility

Pioneer will assess “Technological Feasibility” based on whether the requisite technology is commercial and not experimental.

Pioneer is contracted with Calpine to handle billing matters. As a CCA, Pioneer does not have real time access to customer meters. Instead, meter data is handled by PG&E which is then transmitted to Calpine to generate customer invoices. In order to determine if it is technically feasible to implement hourly and sub-hourly rates, Pioneer would need to know if customer meters are capable of handling hourly and sub-hourly intervals in their service area (Advanced Metering Infrastructure). This information is not readily available and requires instituting a query through Calpine which Pioneer would have to pay for.

The ability to react to price signals depends entirely on notice. It is fundamentally unfair to expect a ratepayer to react to price signals if they are unaware of them. That is why there must be sufficient technology to 1) provide notice to customers and 2) enable automation devices to react to said price signals.

i. Discussion - Residential

Pioneer would not be able to accurately determine total technological feasibility without incurring additional cost. Furthermore, to ensure that the initiative is a success, Pioneer would need to contract with a third party for the ability to text opt-in customers when they need to shift their load and would need to help ratepayers obtain a smart thermostat. Pioneer would also need to work with PG&E, and Calpine to create a way to access meter data in real time. In sum, Dynamic Pricing may be technologically feasible for residential customers, but Pioneer cannot make an accurate determination without incurring additional costs.

ii. Discussion – Commercial/Industrial

Similarly, Pioneer cannot determine whether all Commercial/Industrial meters are capable of reading hourly and sub-hourly without incurring additional cost. Furthermore, Pioneer is not in a position to speculate on what technology upgrades for a Commercial/Industrial customer to be able to react and shift their energy consumption based on price signals. Also, as stated above, Pioneer would need to work with PG&E and Calpine to develop a way to access meter data in real time. In sum, Dynamic Pricing may be technically feasible for Commercial/Industrial customers, but Pioneer cannot make an accurate determination without incurring additional costs.

C. Benefits to the Grid

Pioneer will assess “Benefits to the Grid” on whether the proposed rate will reduce periods of high demand which constrain the grid.

An opt-in dynamic pricing rate may provide many benefits to the grid. CAISO energy prices are subject to supply and demand economic principles. Periods of high pricing are due to substantially greater demand than supply. A dynamic pricing rate would incentivize ratepayers to reduce their demand and there are supply constraints. Similarly, transmission costs are subject to supply and demand economic principles. To reduce demand for energy generation would also reduce demand

for energy transmission. Finally, a dynamic pricing rate could reduce greenhouse gas emissions as times of high demand are when fossil fuels are generally used the most.

i. Discussion - Residential

There are many theoretical benefits to the grid. If these benefits are realized, it would be in line with Pioneer's commitment to keep costs low for their ratepayers. However, these benefits are purely speculative as there is no reliable data showing Dynamic Pricing has resulted in consistent reductions in peak demand.

ii. Discussion – Commercial/Industrial

The same logic also applies to Commercial/Industrial customers. The only reliable data point we have demonstrated a ten percent reduction during peak times. This is not enough data to draw a determination that Dynamic Pricing will provide consistent benefits to the grid.

D. Benefits to Customers

Pioneer will assess "Benefits to Customers" on whether the proposed rate will result in lower costs to Pioneer customers.

Dynamic Pricing provides an incentive for customers to shift their energy consumption to times when it is cheaper. As mentioned above, this similarly impacts transmission prices. However, there are currently no available studies showing consistent energy savings when customers are on a Dynamic Pricing rate. Of the studies Pioneer reviewed, all were designed to show potential savings – not demonstrate actual savings.

i. Discussion – Residential & Commercial/Industrial

Any benefits to customers of either class are purely speculative. Pioneer has been unable to find any studies that show consistent energy consumption shifting due to Dynamic Pricing. Furthermore, Pioneer has not found any studies demonstrating consistent savings to a ratepayer by utilizing a Dynamic Pricing rate.

E. Equity

Pioneer will assess "Equity" on whether the proposed rate will disproportionately burden certain populations.

Customers may see benefits on their bills. The ability to shift energy consumption to periods of lower costs would mean lower bills. However, as mentioned above, for the program to truly be successful it would require the ability of the ratepayer to receive notice and for them to have access to smart thermostat technology which can react to price signals.

i. Discussion – Residential & Commercial/Industrial

The equitable benefits of a dynamic price rate are contingent on many factors. The evidence that these factors aligning will result in the desired behavior is so far not substantive.

As noted above, utility consumer advocates have noted that Dynamic Pricing is disproportionately burdensome on the poor. The poor are more likely to have less efficient appliances and would have to pay for text messages sent to them to receive notice of the price fluctuations. During heat wave events when air conditioning must be used for health reasons, the poor would be forced to choose between high rates or their own health. If a low-income customer mistakenly leaves an appliance on, the resulting bill could be catastrophic, having direct impacts on their budgetary considerations for food, health, and shelter³⁰. In sum, the equitable benefits are hypothetical while the burden on the poor is concrete.

F. Conclusion - Rates

The LMS goals, articulate in §1623.1(a)(1) of the amended regulations, are to encourage the use of electricity at off-peak hours, encouraging the control of daily and seasonal peak loads to improve electric system efficiency and reliability, lessening, or delaying the need for new electrical capacity, and reducing fossil fuel consumption and greenhouse gas emissions. In weighing all the factors (Cost Effectiveness, Technological Feasibility, Benefits to the Grid, Benefits to Customers, and Equity), implementing a marginal cost-based rate would not be cost effective at achieving these goals. Studies show that at most thirty percent of residential ratepayers would utilize the program with the actual outcome in reducing demand being highly contingent on access to certain technologies. This outcome is also based solely on the reporting of one IOU. Furthermore, Pioneer has not seen any studies showing that Dynamic Pricing works in consistently shifting consumption. In contrast, Pioneer would need to invest significant money and staff time to ensure that the program is a success. Furthermore, Pioneer cannot ascertain the technological feasibility of instituting the rate without incurring additional cost. As noted above, a key issue with technological feasibility is that Pioneer does not have real time access to the meters in its service area. There may be benefits to the grid, but studies show that these benefits are not consistent. For customers, Dynamic Pricing could be beneficial, but it could equally be punitive and lead to inequitable results for lower income customers. For these reasons, Pioneer will not institute a marginal cost-based rate at this time. In the alternative, [Pioneer will proceed with instituting the following load flexibility programs and offering PG&E's HFP Pilot, the expanded marginal cost-based CalFUSE pilot authorized in CPUC Decision D. 24-01-032.](#) ~~Pioneer will proceed with instituting the following load flexibility programs.~~

³⁰ Stephanie Kelly, Peter Szekely, Jennifer Hiller, *Texas freeze raises concerns about 'ridiculous' variable rate bills*, Reuters, Fe. 22, 2021

3. Load Flexibility Programs

As mentioned previously, Pioneer has a lean staff model. The Pioneer Programs Manager position was not filled until July 2023. Pioneer staff have developed the following roadmap for program implementation of programs that enable automated response to marginal cost signals. These programs are analyzed under the same framework as Dynamic Pricing (Cost Effectiveness, Cost, Technological Feasibility, Benefits to the Grid, Benefits to Customers, and Equity). Effectiveness and Cost will be truncated. They will be broken down into the following categories and analyzed together:

- Programs that help customers obtain hardware that helps shift energy usage.
- Programs that incentivize energy usage behaviors.
- Existing government programs not administered by Pioneer staff.

I. Hardware Programs

The following are programs that help customers obtain hardware that help customers shift their energy usage. The table has the name of the program, a brief description of the program, Pioneer staff's progress on the program, and the expected date of implementation:

Program Provider	Program Description	Progress	Date of Implementation
Participate Energy	Pioneer customers contract with Participate Energy for leased home solar and storage products. These customers are aggregated into a virtual power plant. It shifts energy usage by charging the battery when times are cheapest (compared to self-generation) and then uses power from the battery at high-cost hours.	Pioneer Board approved program	Second Quarter of 2024
Thule Energy Storage	Pioneer customers install Thule's proprietary technology in line with the air conditioning system at low upfront cost to the customer. This	Under Development	Second Quarter of 2025

	technology freezes water into ice during periods of low demand and then thaws the ice as part of the air conditioning system during periods of high demand.		
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A. Cost Effectiveness

Pioneer will assess “Effectiveness” whether the program will consistently lead to the desired load shifting outcome. “Cost” will also be assessed based on the actual cost to Pioneer.

These are all programs that have demonstrated effectiveness in consistently shifting energy habits without incurring significant costs from Pioneer. Participate Energy’s program to help customers install a battery on their home allows for customers to pull from their own reserve of power during high-cost times. Similarly, Thule Energy Storage would use periods of cheap grid energy to freeze ice, which in turn is used in conjunction with air conditioning to lessen the amount of energy needed by the air conditioning unit during periods of high energy cost. Pioneer believes that while none of these programs is a silver bullet in consistently reducing demand, when aggregated together they can provide consistent demand reduction. Furthermore, since these programs are done in partnership with a third party, Pioneer would not need to invest significant time and resources to get the programs running.

B. Technological Feasibility

Pioneer will assess “Technological Feasibility” based on whether the requisite technology is commercial and not experimental.

All listed programs in the section rely on proven technology. Participate Energy is partnered with Tesla to use Tesla’s battery and photovoltaic technology. Thule Energy Storage’s technology have logged more than 60 million operating hours at over 300 locations since 2005³¹. Thule Energy Storage has previously partnered with Southern California Edison for a successfully implemented load shifting program relying on their technology.

C. Benefits to the Grid

³¹ <https://www.thuleenergystorage.com/projects/>, last visited March 7, 2024.

Pioneer will assess “Benefits to the Grid” on whether the proposed rate will reduce periods of high demand which constrain the grid.

The programs mentioned have a proven track record of providing benefits to the grid. Residential solar and storage helps reduce demand from the grid during high demand hours and residents can draw from their battery instead of the grid³². Similarly, the Thule Ice Energy shifts energy use for air conditioning to low demand hours.

D. Benefits to Customers

Pioneer will assess “Benefits to Customers” on whether the proposed programs will result in lower costs to Pioneer customers.

These programs were specifically sought out due to their ability to help Pioneer customers. This program allows Pioneer customers to have solar and storage systems that normally would not be able to. As mentioned above, Participate Energy handles all maintenance and upkeep of the system and covers upfront installation costs. Thule Energy Storage would also be administered at low upfront cost to the customer.

E. Equity

Pioneer will assess “Equity” on whether the proposed program will disproportionately burden certain populations.

These programs are also structured to reduce upfront costs for customers which means that lower income individuals can take advantage of the program. This creates an equal opportunity for all populations to participate and realize the benefits of these load shifting programs.

F. Conclusion – Hardware Programs

The LMS goals, articulate in §1623.1(a)(1) of the amended regulations, are to encourage the use of electricity at off-peak hours, encouraging the control of daily and seasonal peak loads to improve electric system efficiency and reliability, lessening or delaying the need for new electrical capacity, and reducing fossil fuel consumption and greenhouse gas emissions. In weighing all the factors (Cost Effectiveness, Technological Feasibility, Benefits to the Grid, Benefits to Customers, and Equity), these programs will achieve the aims of the LMS regulations in a consistently effective manner without leading to inequitable results. They are cost effective as they rely on proven technologies and do not require substantial staff time to implement. Similarly, they are technologically feasible as the technologies are commercially available and not experimental. Studies show they provide proven benefits to the grid. Customers are able to benefit as these programs are designed to be provided to customers with little or no upfront cost.

³² Hou Sheng Zhou, *A case study on the behavior of residential battery energy storage systems during network demand peaks*, Renewable Energy, Dec. 2021.

Finally, for the same rationale, these programs are equitable as lower income ratepayers can access the programs at little or no upfront cost.

II. Incentive Based Program Paired with Software

Pioneer believes that an incentive-based program would be more successful in consistently shifting energy usage than a punitive based one. With this in mind, Pioneer staff has been meeting with Sonoma Clean Power staff to implement a program similar to their GridSavvy program. This program offers customers that reduce their load during peak hours compensation that can be redeemed or donated to a participating nonprofit organization. An alert is sent to participating customers in advance of an anticipated peak load period. The compensation is based on kWh reduced during the event and there is no penalty if the customer decides to continue their usage as usual. This program is expected to launch by the second quarter of 2025.

In conjunction with this program, Pioneer is exploring leveraging software to automate smart appliances. As mentioned above, studies show that technology is required to consistently shift load for demand response. The software would also be combined with an EV charging optimization program.

The table has the name of the program, a brief description of the program, Pioneer staff's progress on the program, and the expected date of implementation:

Program Provider	Program Description	Progress	Date of Implementation
Pioneer would need to issue an RFO for a provider.	Incentivization based program which pays Pioneer customers who shift their energy usage during peak demand times.	Under Development	Second Quarter of 2025
Virtual Peaker	Operates a Distributed Energy Resource Management System (DERMS) platform. This platform connects with customers smart devices to help shift energy habits to low-cost hours.	Under Development	Second Quarter of 2026
Pioneer would need to issue an RFO for a provider.	EV Charging Optimization.	Under Development	Fourth Quarter of 2024

A. Cost Effectiveness

Pioneer will assess “Effectiveness” whether the program will consistently lead to the desired load shifting outcome. “Cost” will also be assessed based on the actual cost to Pioneer.

Studies show that incentive-based approaches effectively reduce peak load during heatwave events without harm to vulnerable groups³³. Notably, in a study of incentive-based demand response in China, researchers found that the repeated and frequent implementation of the program did not result in an attenuation of the effect³⁴. This demonstrates that incentive-based demand response can lead to consistent results in shifting energy usage.

In order to gauge the complete financial cost and solicit competitive proposals, Pioneer would need to issue a Request for Offers. This process aims to assess the feasibility and pricing structures associated with implementing an incentive-based program to shift energy usage. At this current juncture, in preliminary conversations with other CCAs with similar programs, costs are not presumed to be substantial.

B. Technological Feasibility

Pioneer will assess “Technological Feasibility” based on whether the requisite technology is commercial and not experimental or theoretical.

These programs have been shown to be technologically feasible in other CCA service areas³⁵. These appliances and software have been on the market now for many years. If the program intends to make the periods of load shifting more granular (i.e sub-hourly) Pioneer would need to determine how many meters in our service area are AMI.

C. Benefits to the Grid

Pioneer will assess “Benefits to the Grid” on whether the proposed programs will reduce periods of high demand which constrain the grid.

These programs will help shift load during peak load hours which in turn reduces strain on the grid. As seen in the previously mentioned study, incentive-based programs result in consistent load reduction³⁶. These load reductions, especially in periods of high demand, mean less price volatility and lowers the change of a brown out.

³³ Wang, Lu, Want, Qiu, Zhang, Li, Li, and Zhao, *Incentive based emergency demand response effectively reduces peak load during heatwave without harm to vulnerable groups*, Nature Communications, Oct. 2023

³⁴ *Id.*

³⁵ <https://sonomacleanpower.org/programs/gridsavvyrewards>, last viewed March 7, 2024.

³⁶ Wang, *supra* at note 34.

D. Benefits to Customers

Pioneer will assess “Benefits to Customers” on whether the proposed programs will result in lower costs to Pioneer customers.

This program will provide customers with the ability to either earn money from their shift in energy consumption or donate to a participating nonprofit. Rather than being punitive, these programs reward behavior with money that can go back into their account. Though this rebate program, Pioneer customers will realize lower costs.

E. Equity

Pioneer will assess “Equity” on whether the proposed program will disproportionately burden certain populations.

As mentioned above, studies show that these types of programs are more equitable than punitive based programs³⁷. Rather than risk losing money, they can instead earn money by changing their habits. A customer will not have to worry about a large bill due to factors outside their control (say a medically necessary reason to keep an air conditioner running). Because of this model, no population can be disproportionately burdened with the costs of shifting energy usage.

F. Conclusion - Incentive Based Program Paired with Software

The LMS goals, articulate in §1623.1(a)(1) of the amended regulations, are to encourage the use of electricity at off-peak hours, encouraging the control of daily and seasonal peak loads to improve electric system efficiency and reliability, lessening or delaying the need for new electrical capacity, and reducing fossil fuel consumption and greenhouse gas emissions. In weighing all the factors (Cost Effectiveness, Technological Feasibility, Benefits to the Grid, Benefits to Customers, and Equity), these programs will achieve the aims of the LMS regulations in a consistently effective manner without leading to inequitable results. They are cost effective as studies show incentive based cost shifting programs lead to consistent load shifting. The programs rely on commercially available technology which means they are technologically feasible. Studies show that these types of programs lead to consistent load shifting behavior which provides benefits to the grid. The programs are beneficial to customers as they are rewarded, rather than penalized for shifting their behavior. Finally, for the same reason, these programs are equitable as low-income individuals are able to avoid the risk of a catastrophic electricity bill.

III. Existing Government Programs

The table has the name of the government program, a brief description of the program, Pioneer staff’s progress on the program, and the expected date of implementation:

³⁷ *Id.*

Program Name	Program Description	Progress	Date of Implementation
AgFIT	The Flexible Irrigation Pilot Program for Agriculture (AgFIT) was successfully piloted by Valley Clean Energy. The D.24-01-032 ruling expanded the program to all agricultural customers and allows all CCAs in PG&E service territory to participate until its conclusion on December 31, 2027. This program would be administered by PG&E and would use automation technology and/or a notice to shift agriculture pumping times.	Pioneer must submit an Advice Letter stating their intent to participate by March 2025	The Second Quarter of 2025
ELRP	A program administered by the IOUs which pays customers who voluntarily reduce electricity demand during a grid emergency. The program also pays customers who produce energy during a grid emergency under certain conditions.	Currently ongoing	Set to expire December 31, 2025

A. Cost Effectiveness

Pioneer will assess “Effectiveness” whether these programs consistently lead to the desired load shifting outcome. “Cost” will also be assessed based on the actual cost to Pioneer.

These programs have been proven to be effective at shifting energy consumption to off-peak hours for irrigation. It is due to their effectiveness that CPUC expanded these programs³⁸. Since these programs are administered by the IOUs, they would be administered at no cost to Pioneer.

B. Technological Feasibility

Pioneer will assess “Technological Feasibility” based on whether the requisite technology is commercial and not experimental or theoretical.

Since these are programs that have already been piloted or are currently running, they have proven technological feasibility. Any requisite technology is commercially available.

C. Benefits to the Grid

Pioneer will assess “Benefits to the Grid” on whether the proposed programs will reduce periods of high demand which constrain the grid.

The AgFIT program shifts load to times of low demand which reduces strain on the grid. The ELRP is a more traditional demand response program but is incentive based rather than punitive. Both are designed to reduce demand from the grid which helps stabilize prices and reduce the risk of brown out.

D. Benefits to Customers

Pioneer will assess “Benefits to Customers” on whether the proposed programs will result in lower costs to Pioneer customers.

Both of these programs provide benefits to customers as they reduce demand during peak periods. Reductions like help stabilize costs which in turn helps keep Pioneer rates low. Furthermore, Pioneer customers that are part of the ELRP program are compensated for the reductions in energy usage, which in turn means they realize lower energy costs.

E. Equity

Pioneer will assess “Equity” on whether the proposed program will disproportionately burden certain populations.

Both of these programs are opt-in incentive based rather than punitive, fostering a more balance and fair outcome. This approach not only encourages compliance but also promotes a positive and cooperative relationship between customers and the LSE, leading to outcomes seen as fairer and more equitable. As mentioned previously, incentive-based programs lead to more equitable outcomes³⁹.

³⁸ *Staff Proposal on Existing Dynamic Rate Pilot Expansion*, R.22-07-005, Aug. 15, 2023.

³⁹ Wang, *supra* at note 34.

F. Conclusion – Existing Government Programs

The LMS goals, articulate in §1623.1(a)(1) of the amended regulations, are to encourage the use of electricity at off-peak hours, encouraging the control of daily and seasonal peak loads to improve electric system efficiency and reliability, lessening or delaying the need for new electrical capacity, and reducing fossil fuel consumption and greenhouse gas emissions. In weighing all the factors (Cost Effectiveness, Technological Feasibility, Benefits to the Grid, Benefits to Customers, and Equity), these programs will achieve the aims of the LMS regulations in a consistently effective manner without leading to inequitable results. These programs are cost effective as the CPUC has found them to be effective at consistently shifting load. They are also not administered by Pioneer, so cost is negligible. As they are existing programs, they are shown to be technologically feasible. The programs provide proven benefits to the grid by shifting load times away from peak periods. Since these are incentive based, they provide benefits to customers as they see a gain from shifting behavior rather than a penalty. Finally, for a similar rationale, they are incentive based so the programs do not lead to inequitable outcomes.

4. Summary

The amended LMS regulations require Pioneer to assess implementing a marginal cost-based rate, and if that implementation would result in the goals of the regulation. These goals are to encourage the use of electricity at off-peak hours, encouraging the control of daily and seasonal peak loads to improve electric system efficiency and reliability, lessening, or delaying the need for new electrical capacity, and reducing fossil fuel consumption and greenhouse gas emissions. In assessing the if the implementation will achieve these goals, Pioneer must weigh cost effectiveness, technological feasibility, benefits to the grid, benefits to customers, and equity. If, after weighing these factors, Pioneer chooses not to implement a marginal cost-based rate, Pioneer must instead provide load shifting programs designed to achieve the previously state goals.

Pioneer assessed the implementation of a marginal cost-based rate and found that the rate scheme is not cost effective in achieving the stated goals of the regulation. There is not substantive enough evidence that a marginal cost-based rate would lead to consistent energy shifting behavior for the large cost that would be incurred by Pioneer. Currently, Pioneer does not have access to real time meter data which is required for the implementation of a rate like this. Accessing that data would require significant costs and staff time for Pioneer. The rate also may be punitive and lead to inequitable outcomes for lower income customers. With that in mind, Pioneer has developed the following list of programs which will achieve the goals of the regulation:

Program Provider	Program Description	Progress	Date of Implementation
Participate Energy	Pioneer customers contract with Participate Energy for leased home solar and storage products	Pioneer (GridGen) launched in 2024.	Fourth Quarter of 2024 Expanded in

	<u>with no upfront costs and no credit check.</u> <u>Customers are aggregated into a virtual power plant that shifts energy usage by charging the battery when rates are lower (compared to self-generation) and then uses power from the battery at higher-cost hours.</u>	<u>The program was expanded to offer battery-only retrofits and access for CARE/FERA customers.</u> <u>To date:</u> <u>• 6 completed installs</u> <u>• 11 customers achieved permission to operate (PTO)</u> <u>• 87 customers in the active pipeline</u>	<u>Third Quarter of 2025</u>
<u>Demand Response</u>	<u>Incentivize-based program that pays customers who shift their energy usage during times of peak demand/grid strain.</u>	<u>Program (PowerShift Rewards) launched fall 2024 and runs May through October.</u> <u>Customers receive an incentive for enrolling in the program and additional incentives for reducing energy consumption during times of peak demand or when the grid is strained.</u> <u>To date, more than 1,400 customers are enrolled, resulting in a 1.4 MWh energy reduction.</u>	<u>Third Quarter of 2024</u>
<u>PG&E</u>	<u>The Hourly Flex Pricing Pilot Program, formerly known as AgFIT, was successfully piloted by Valley Clean Energy. The D.24-01-032 ruling expanded the program to all agricultural customers and allows all CCAs in PG&E service territory to participate until its conclusion on December 31, 2027. This program uses</u>	<u>Program launched in late 2024, but the application period closed abruptly in spring.</u> <u>Applications period was reopened in spring due to CCA concerns. However, incentive funding is limited and likely will reach capacity soon.</u> <u>Pioneer currently has two customers with a</u>	<u>Fourth Quarter of 2024</u>

	<u>automation technology and/or a notice to shift agriculture pumping times.</u>	<u>combined 19 meters enrolled in the program.</u>	
<u>Ice Energy Storage</u>	<u>Pioneer customers install Ice Energy's technology to the air conditioning unit at low upfront costs. The technology freezes water into ice during periods of low energy demand, then uses the ice during periods of high demand to reduce energy use by taking pressure off the condenser, thereby using less energy.</u>	<u>Program launched in spring</u> • <u>22 Participation Agreements under review</u> - o <u>Roughly 130 units would be installed</u> • <u>35 site surveys</u>	<u>Second Quarter of 2025</u>
<u>Pioneer would issue an RFO for a provider or partner with an existing project</u>	<u>EV Charging Optimization/Accessibility</u>	<u>Under development</u>	<u>Third Quarter of 2026</u>

[\(Updated September 2025\)](#)

<u>Program Provider</u>	<u>Program Description</u>	<u>Progress</u>	<u>Date of Implementation</u>
<u>PG&E</u>	<u>The HFP Pilot, formerly known as AgFIT, was successfully piloted by Valley Clean Energy. The D.24-01-032 ruling expanded the program to all agricultural customers and allows all CCAs in PG&E service territory to participate until its conclusion on December 31, 2027. This program would be administered by PG&E and would use automation technology and/or a notice to shift agriculture pumping times.</u>	<u>Pioneer Board approved program</u>	<u>Fourth Quarter of 2024</u>
<u>Participate Energy</u>	<u>Pioneer customers contract with Participate Energy for leased home solar and storage products. These</u>	<u>Pioneer Board approved program</u>	<u>Second Quarter of 2024</u>

	customers are aggregated into a virtual power plant. It shifts energy usage by charging the battery when times are cheapest (compared to self-generation) and then uses power from the battery at high-cost hours.		
Thule Energy Storage	Pioneer customers install Thule's proprietary technology in line with the air conditioning system at low upfront cost to the customer. This technology freezes water into ice during periods of low demand and then thaws the ice as part of the air conditioning system during periods of high demand.	Under Development	Second Quarter of 2025
Pioneer would need to issue an RFO for a provider.	Incentivization-based program which pays Pioneer customers who shift their energy usage during peak demand times.	Under Development	Second Quarter of 2025
Virtual Peaker	Operates a Distributed Energy Resource Management System (DERMS) platform. This platform connects with customers smart devices to help shift energy habits to low-cost hours.	Under Development	Second Quarter of 2026
Pioneer would need to issue an RFO for a provider.	EV Charging Optimization.	Under Development	Fourth Quarter of 2024

Finally, Pioneer has been working with the other load serving entities (LSEs) on creating the statewide RIN tool pursuant to 20 CCR Section 1623(c). A proposed plan for the tool was submitted to the CEC for review on October 1, 2024. Pioneer will continue to work with the other LSEs and the CEC to implement and maintain the statewide RIN tool in a timely manner subject to the tool's approval by the CEC.

