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**Draft Scoping Order for the 2023 IEPR - final**

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**BEFORE THE CALIFORNIA ENERGY COMMISSION  
DIVISION OF THE CALIFORNIA NATURAL RESOURCES AGENCY**

In the matter of:

Preparation of the  
2023 Integrated Energy Policy Report

Docket No. 23-IEPR-01

**COMMENTS OF THE SOLAR ENERGY INDUSTRIES ASSOCIATION  
ON THE DRAFT SCOPING ORDER  
FOR THE 2023 INTEGRATED ENERGY POLICY REPORT**

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**COMMENTS OF THE SOLAR ENERGY INDUSTRIES ASSOCIATION  
ON THE DRAFT SCOPING ORDER  
FOR THE 2023 INTEGRATED ENERGY POLICY REPORT**

The Solar Energy Industries Association (SEIA) appreciates the opportunity to comment on the proposed scope for the California Energy Commission’s (Commission) *2023 Integrated Energy Policy Report* (2023 IEPR). SEIA is the national trade association of the United States solar industry. Through advocacy and education, SEIA and its 1,000 member companies are working to expand markets for solar energy, remove market barriers, strengthen the industry, and educate the public on the benefits of solar energy. SEIA’s members have a strong interest in the adoption and implementation of innovative, forward-looking policies and programs that will accelerate the development of solar photovoltaic (PV) generation across the full range of project sizes, from residential rooftops to utility-scale solar power plants. SEIA and its members are active participants before many state regulatory agencies in California, including this Commission.

**1. The Foundational Importance of Timely Interconnection**

SEIA could not agree more with the Commission’s choice for the focus of the 2023 IEPR: identifying barriers and solutions to accelerate the connection of clean energy technologies to the electric grid. As a result of the comprehensive planning activities of this Commission and its sister agencies, California understands the magnitude and timing of the deployment of clean energy technologies necessary for the state to reach its ambitious climate and clean energy goals. Those plans focus on electrification – both increasing the supply of new renewable generation and encouraging the greater use of clean electricity across all sectors of the state’s economy. The challenge now is executing on those plans – with a central question being the ability of the electric grid to connect and to serve both the future supply and the expected higher demand for clean electricity.

SEIA and its members are proud of their contribution to growing California’s solar market into the largest in the U.S. That growth now needs to accelerate, which will not happen without significant streamlining of the processes for interconnecting new clean generation to the state’s electric grid. The large interconnection queue of the California Independent System Operator (CAISO) shows the depth and competitiveness of the market for new utility-scale

renewables. However, the benefits of that large, robust market will not be realized if projects are delayed as a result of an unwieldy interconnection study process and a lack of accurate information on where interconnection capacity is available on the state's grid. An even greater barrier may be a too-slow recognition by the utilities and regulators that additional transmission capacity – which can require years to develop and build – is needed in the areas of the state that can support significant new renewables development.

Today, SEIA member companies are finding that it is increasingly difficult and costly to bring new generation projects online, and the timelines to develop and build projects is increasing. From our perspective, the central issues and barriers that are contributing to these trends include the following:

1. **Utility Delays.** California's transmission-owning utilities have fallen behind in upgrading their systems to allow projects to be interconnected. This has resulted in multi-year delays. This is caused by a lack of resources and attention on this issue and will need to be monitored closely going forward.
2. **State Delays.** California's transmission planning has not been adequate to address the need to bring new resources online at the scale and in the time frames required to meet the state's reliability and clean energy needs. The state's energy agencies have begun to address this through improvements to the CPUC's Integrated Resource Planning (IRP) process and the CAISO's 20-year Transmission Plan, but it remains to be seen whether these new advance planning efforts will result in more timely expansions of the state's transmission system.
3. **CEC Land Use Screens.** This Commission's newly proposed land use screens will further limit the available areas for solar development in the state, concentrating development in regions such as the Central Valley. This intensifies the need to make sure that adequate transmission and interconnection capacity is available in these areas.
4. **Focus on Deliverability.** The CAISO's interconnection Clusters 14 and 15 are record breaking in size, which greatly complicates the interconnection study process. At the same time, the CPUC has prioritized the procurement of new resources that can provide firm deliverable capacity as soon as possible, to meet the state's immediate need to enhance reliability in the peak summer months. As a result, the CAISO's Interconnection Process Enhancement effort is looking at prioritizing projects that have power purchase contracts in hand and that can show they will be located near transmission upgrades where deliverability is available. The pressure to meet these immediate needs for new capacity may obscure the need to examine more fundamental changes to the

interconnection and deliverability study processes, in light of the changes in the resource mix and load profiles that the electric grid must serve in the coming years and in the scale of the future need for new clean resources.

SEIA believes that these issues will require more attention and resources dedicated to advance transmission planning and interconnection, better coordination among energy agencies, and a cooperative effort by all stakeholders to identify and advance workable solutions that expand the capabilities of the state’s transmission system. SEIA is committed to working with the Commission and other stakeholders to address these critical issues.

## **2. Connecting Customers as a Key Resource**

California’s citizens will play a central role as key investors and participants in the clean energy transition. 1.7 million California homes & businesses have installed grid-connected rooftop solar,<sup>1</sup> and consumers have made clear that they want the ability – in a world that they recognize is electrifying – to invest in supplying a portion of their electric needs from power generated on their own premises, for reasons of economy, resiliency, and community. Distributed, customer-sited generation and storage can play a major role in moderating the need for new utility-scale generation and high-voltage transmission, and these reductions may be essential to reach levels of utility-scale development that are feasible to achieve. The role for state policymakers is to establish policies and rates that fully value the generation, transmission, and distribution costs that customer-sited generation will allow the utilities to avoid and that recognize the significant reliability and environmental benefits that clean, local, distributed resources can provide.

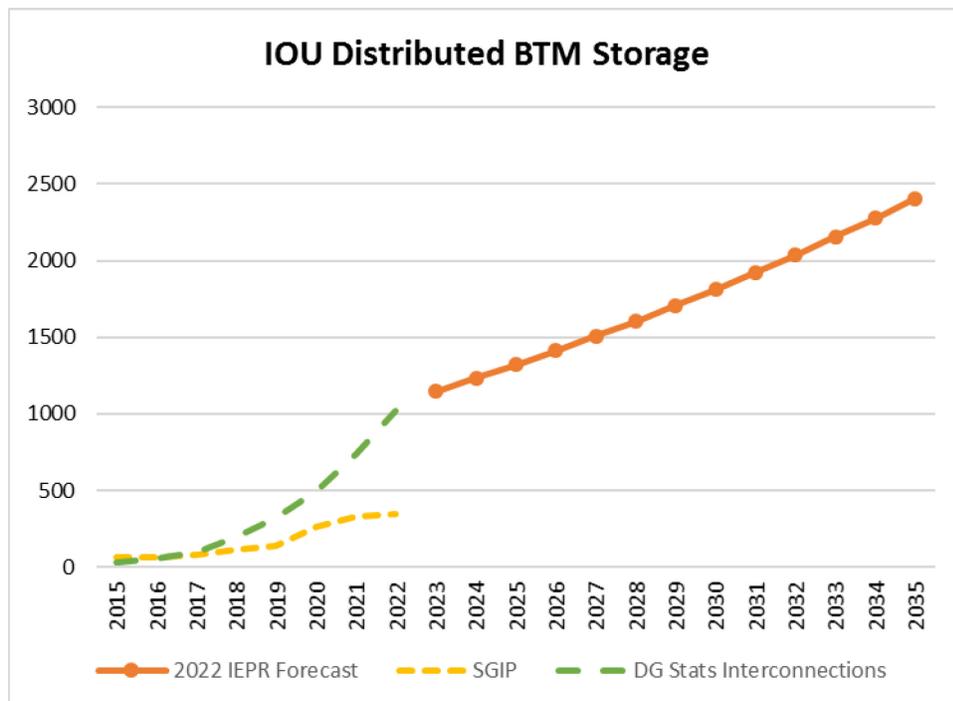
Customers are also the ones that place demand on the grid, and the distributed energy resources that they adopt will be critical in shaping the demand profile that the grid must serve. The growth of customer-owned storage – i.e. batteries located either in homes or electric vehicles – will be the most important new technology shaping the future demand for grid power. SEIA is concerned that the current 2022 IEPR demand forecast significantly underestimates the likely growth in distributed, behind-the-meter (BTM) stationary storage installed in homes and businesses. The state’s DG Stats interconnection database shows that, as of the end of 2022,

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<sup>1</sup> See <https://www.californiadgstats.ca.gov/>.

about 1 GW of distributed storage had been installed on the systems of the three major investor-owned utilities (IOUs), with rapid growth of 50% per year over the last four years.<sup>2</sup> See the dashed green line in **Figure 1** below. However, the incremental growth of BTM storage capacity projected in the 2022 IEPR demand forecast is much more modest – just 7% per year out to 2035 (see the orange line in Figure 1).

**Figure 1**



SEIA asks the Commission to take a fresh look at the BTM storage forecast, as part of the 2023 electric demand forecast. We expect customer demand for BTM storage to continue its strong growth, for several reasons. First, the new net billing tariff adopted in December 2022 by the California Public Utilities Commission (CPUC) strongly encourages the pairing of distributed solar and storage to maximize both the customer and system benefits of these distributed resources.<sup>3</sup> Second, there continues to be strong demand from customers for on-site storage to enhance the resiliency of their electric service in the face of more frequent and more severe weather events. Finally, the Inflation Reduction Act extended and increased the federal

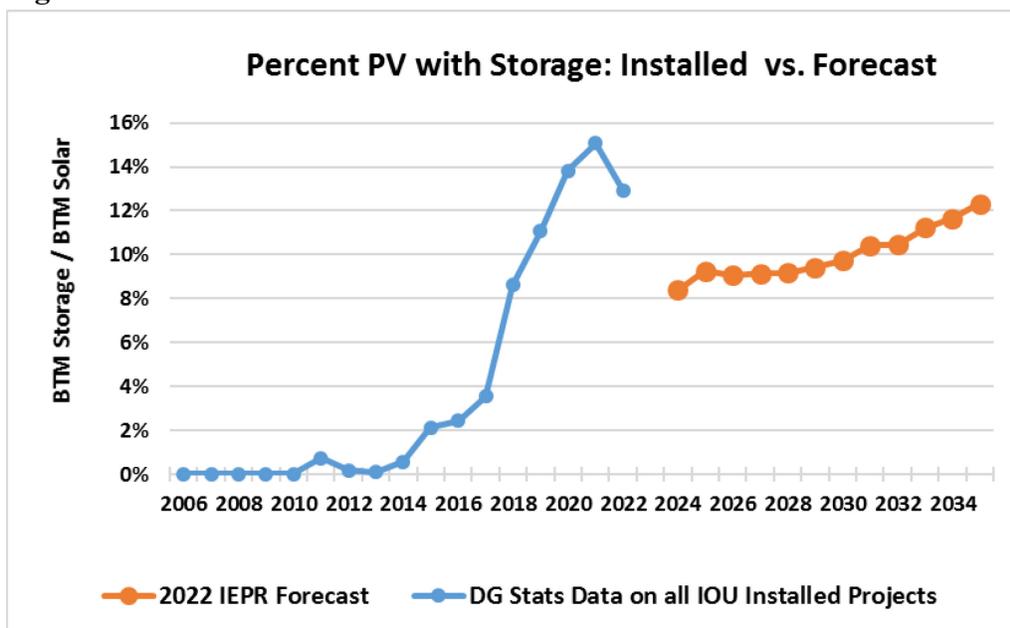
<sup>2</sup> This data base is available at <https://www.californiadgstats.ca.gov/downloads/>.

<sup>3</sup> See CPUC Decision 22-12-056.

investment tax credit for both resources. State incentives for BTM storage also are available to some customers through the Self Generation Incentive Program (“SGIP”).

The blue line in **Figure 2** below shows DG Stats data on the ratio of the MWs of BTM storage to the MWs of BTM solar installed and brought online in each year from 2013 to 2022 (to date).<sup>4</sup> This ratio provides a rough indication of the percentage of BTM solar projects that include storage, under the assumption that the storage discharge capacity typically is similar to the nameplate capacity of the associated solar system.<sup>5</sup> In 2020-2021, 12% to 14% of solar systems included storage. The orange line in Figure 2 shows the comparable ratio of BTM storage MW to BTM solar MW in the 2022 IEPR demand forecast, for the years 2021-2035.

**Figure 2**



The DG Stats data shows that about 13% of BTM solar projects coming online in California today are including batteries to store a portion of the solar output and to shift that output to peak demand hours. Yet the 2022 IEPR demand forecast does not reach this penetration of BTM storage until 2035. As shown in Figure 1, in terms of the absolute MWs of BTM storage, the 2022 IEPR demand forecast also substantially lags current trends.

<sup>4</sup> This includes data for both the residential and non-residential markets.

<sup>5</sup> The CPUC’s consultant Energy and Environmental Economics (“E3”) used this assumption – that the storage discharge capacity equals the nameplate capacity of the solar system – in modeling solar-paired-storage projects in the recent net energy metering (“NEM”) proceeding, R. 20-08-020.

SEIA asks the Commission to consider a forecast of BTM storage that assumes more rapid growth in the penetration of paired BTM solar-plus-storage systems, from 13% of BTM solar systems today (in 2022) to a goal of 90% by 2035. The capacity of BTM storage systems should be assumed to equal the capacity of the solar systems with which they are paired. The growth of BTM storage can make a significant contribution to expanding the state's capacity to meet system peak demands. If the penetration of distributed storage grows such that it is paired with 90% of solar systems by 2035, this would add about 6.0 GW of much-needed new storage capacity to the California electric system by 2035, in addition to the 1.4 GW of new BTM storage in 2035 estimated in the now-dated 2022 IEPR forecast.

### **3. New Realities in the Natural Gas Market**

The Commission's work in the IEPR typically includes a new long-term forecast of natural gas burner-tip prices in the California market. The IEPR forecast of burner-tip gas prices for electric generation plants is an important input into other state planning efforts, such as the CPUC's IRPs. SEIA is concerned that the most recent IRP preferred system portfolio (PSP), adopted by the CPUC in February 2022,<sup>6</sup> is based on an outdated IEPR gas forecast released in June 2020, notwithstanding that more recent IEPR gas forecasts from this Commission were available to the CPUC. Much has happened in the natural gas market since 2020, including the economic recovery from the covid pandemic, the war in Ukraine, and the recent spikes in natural gas prices in the California market in December 2022 and January 2023. SEIA looks forward to a new long-term natural gas forecast that incorporates these significant market developments.

SEIA commends the Commission for the updated IEPR gas forecast issued in September 2021, which recognized that natural gas transportation rates in California will escalate at a rate significantly higher than general inflation. This higher escalation in gas transportation rates is important given that the revenue requirements for the gas utilities (the numerator of gas transport rates) continue to increase (due to safety- and reliability-related costs) while throughput (the denominator of gas transport rates) is flat or declining (due to efforts to reduce carbon emissions).<sup>7</sup>

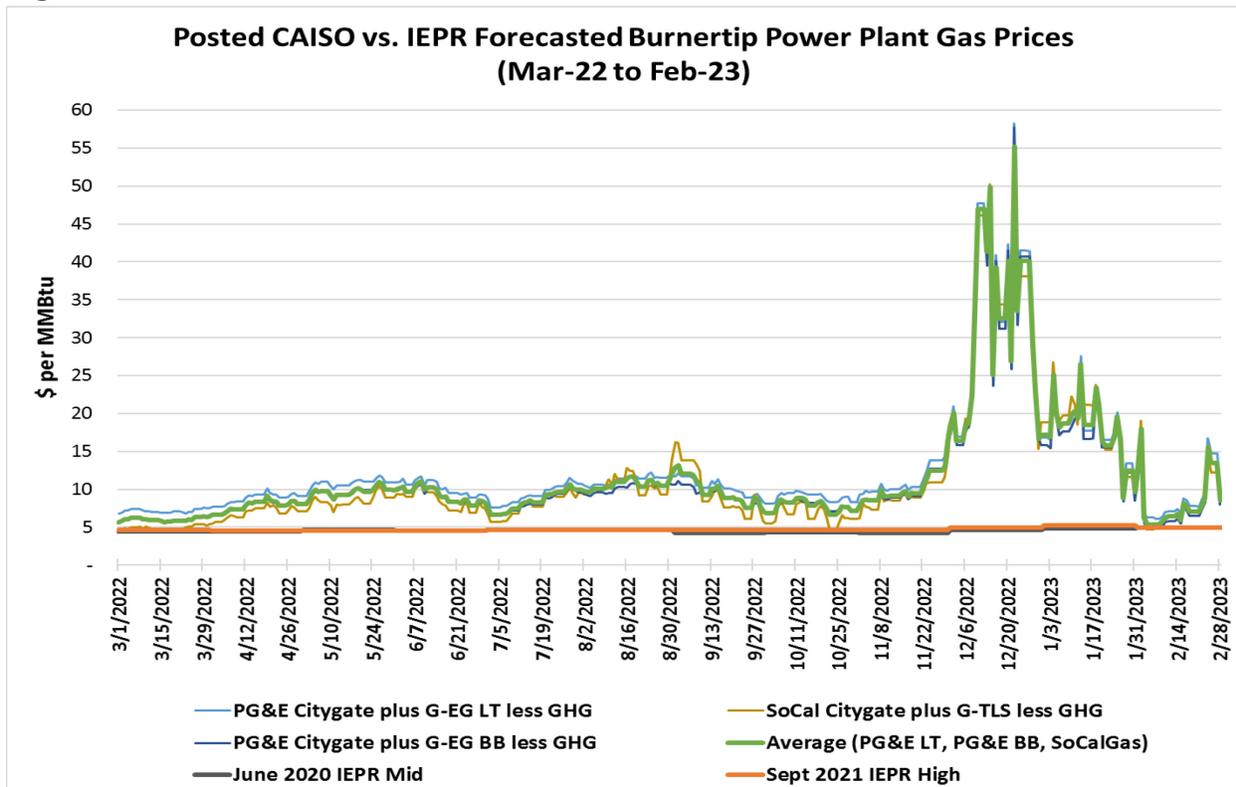
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<sup>6</sup> See CPUC Decision 22-02-004.

<sup>7</sup> The trend of greater-than-inflation increases in gas transportation rates in California has been a fact since the explosion of the San Bruno pipeline in 2010.

**Figure 3** below compares actual EG burnertip gas prices in 2022, as posted daily by the CAISO,<sup>8</sup> to the EG burnertip forecasts for 2022 from the June 2020 IEPR forecast and the September 2021 IEPR update. Actual EG burnertip gas prices in 2022 have been far higher than what was projected in the past IEPR gas forecasts, due to the higher level of fossil fuel prices resulting from the war in Ukraine. The U.S. natural gas forward market shows continued elevated natural gas prices for the next several years, with a gradual decline from today's levels.

**Figure 3**



SEIA recognizes that it is difficult for a long-term natural gas forecast to capture near-term fluctuations in gas market prices resulting from unexpected events. We ask the Commission to consider moving to a blended forecast of natural gas commodity prices that uses: (1) in the short-term (first three years), the current natural gas forward market prices at the benchmark Henry Hub market plus basis differentials from the Henry Hub to the PG&E and SoCalGas City-gate

<sup>8</sup> The figure shows the three CAISO-posted EG burnertip gas prices that correspond to the EG gas forecasts used in the IEPR (PG&E Local Transmission [light blue], PG&E Backbone [dark blue], and SoCalGas [yellow]). The black line in the figure is the average of the three.

markets, (2) in the intermediate term (years 4 to 7), a transition from forward market prices to the long-term fundamentals forecast that the Commission has traditionally produced for the IEPR, and (3) in years 8 and beyond, the Commission’s fundamentals forecast. This “blended” approach to the natural gas forecast is used by many U.S. utilities, and has been employed by the CPUC in the past in its gas forecasts for the Market Price Referent and Avoided Cost Calculator. The use of natural gas forward market prices in the early years allows a blended forecast to remain current with changes in the short-term market while retaining the fundamentals forecast of gas prices in the long-term.

#### **4. Conclusion**

SEIA appreciates the opportunity to submit these comments and looks forward to continuing to work with the Commission and other stakeholders on the 2023 IEPR.

Respectfully submitted,

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