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Document Title:	C Note Limited Partnership's Request for a Multi-residential Solar Photovoltaic Exemption Determination for The Benjamin Project
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C Note Limited Partnership

June 6, 2023

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Re: C Note Limited Partnership's Request for a Multi-residential Solar Photovoltaic Exemption Determination for The Benjamin Project, a 108-unit Multi-Residential Project in Lodi, CA.

Dear Mr. Saeed,

On behalf of the C Note Limited Partnership (C Note), I am writing to seek a determination from the California Energy Commission (Commission) under Section 10-109(k) of the 2019 Building Energy Efficiency Standards. That section allows the Commission to determine that the solar Photovoltaic (PV) requirements[1] applicable to low rise multi-residential buildings (Section 150.1(c)14), shall not apply if circumstances "causes the Commission's cost effectiveness conclusions, made pursuant to Public Resources Code 25402(b)(3), to not hold for particular buildings."[2]

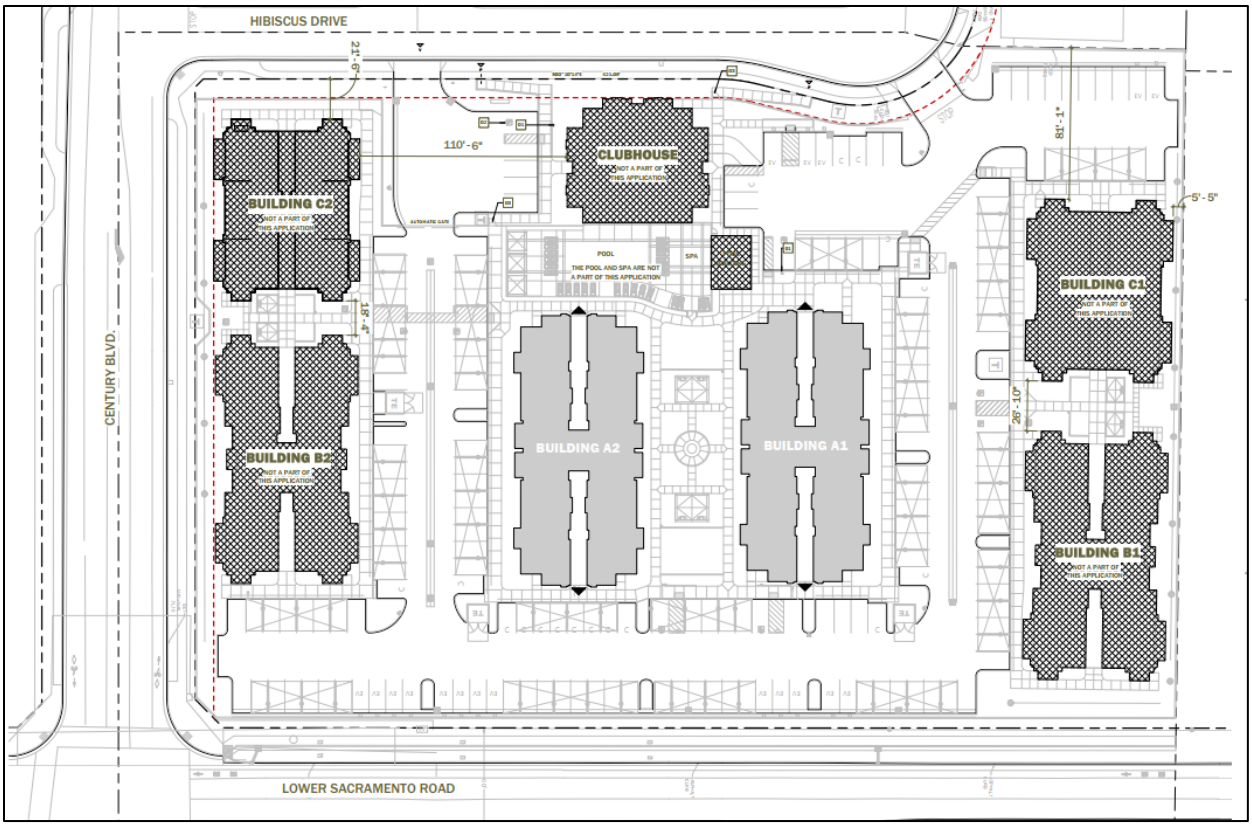
By this letter, C Note formally seeks a determination that the solar PV requirements for The Benjamin Project buildings are not cost-effective and do not apply to this project on the basis that (i) the City of Lodi has prohibited Net Energy Metering Aggregation (NEMA), and (ii) construction costs and interconnection fees for multi-residential buildings resulting from the NEMA prohibition and other regulations render installation of solar in accordance with Section 150.1(c)14 cost prohibitive.

C Note supports the Commission's efforts to shift California away from fossil-fuel based energy. However, requiring a photovoltaic system on The Benjamin Project - given its unique set of legal, regulatory, and building requirements - is not cost-effective and may place further stress on the City of Lodi and the housing needs of its community. C Note will, as required by the Energy Code, ensure that The Benjamin Project is solar-ready in the event underlying cost drivers change or are removed.

[1] The Solar PV requirements are specifically found at Section 150.1(c)(14).
[2] 2019 Building Energy Efficiency Standards, 10-109(k)

Project Description and PV Requirements:

The Benjamin Project is a 108 unit, three-story, eight building multi-residential community located at 2525 Century Blvd in Lodi CA currently under development by C Note Limited Partnership (also located in the City of Lodi). The project consists of two 12-unit buildings (C1 & C2), two 18-unit buildings (B1 & B2), and two 24-unit buildings (A1 & A2) for a total of 108 multi-residential units plus a clubhouse and pool building. The electric utility company in this jurisdiction is the Lodi Electric Utility ("LEU"), a department in the City of Lodi.



The Benjamin Project Site Plan

The 2019 Title 24 CF1R summary document for this project is included as Exhibit H.

Summary of PV system minimum size requirements per approved 2019 Title 24 CF1R report:

Building	#Units	Building Sq footage	Min. CF1R PV/building	Designed PV/building
A1 & A2:	24	17,172 sq ft	40.91kW each	42.24kW each
B1 & B2:	18	17,346 sq ft	35.77kW each	36.08kW each
C1 & C2:	12	12,408 sq ft	25.68kW each	26.40kW each

Total units: 108
Total Benjamin Project square footage: 93,852sq ft
Total minimum PV kW required by CF1R: 204,720 watts DC and as designed: 209,440 watts DC

Background:

In November of 2022 C Note submitted a request for a solar exemption determination to the CEC presenting construction cost issues and a breakdown of bid costs associated with PV on The Benjamin Project. We subsequently submitted additional data per CEC requests dating from December 2022 through April 2023 as outlined below:

1. A single unit cost analysis based on the detailed CEC/NREL cost model format structure.
2. Four additional solar bids for the project (including two companies the CEC recommended, one of which resulted in a no-bid).
3. Three additional bids for the single unit cost analysis.
4. Supporting electrical bids.
5. A roofing penetration sealing bid from our roofing subcontractor.
6. Title 24 CF1R summary document.

These documents, and/or updates to them are attached to this submittal package.
A full list of Exhibits follows at the end of this letter (Exhibits A – H).

In addition, we previously submitted documentation from the City of Lodi and the Lodi Electric Utility District to support our specific PV design requirements and other associated cost drivers. These documents are attached to this submittal package as well (Exhibits F & G).

On May 12, 2023, the CEC requested that we file a formal solar exemption determination request. To date we have not received any formal or informal written response or analysis to the

information already provided, but we trust that the information supplied has been sufficient for CEC staff to analyze our request. We respectfully request that we be notified without delay of any additional information required to render a decision on our application.

Discussion:

Enforcement by the City of Lodi of a prohibition on Net Energy Metering Aggregation, coupled with City regulations prohibiting a PV system from back feeding significantly more power than is being consumed, render installation of a PV system at The Benjamin Project cost prohibitive.

In our review to prepare for a cost effectiveness evaluation we referred to CEC document 2019-RES-PV-D[3]. This document discusses the methodology for determining PV cost-effectiveness. It refers to PV Cost Benchmarks for a 5.6kW PV system on a single-family home reported by the National Renewable Energy Laboratory (NREL) in their 2016 report[4]. Also, for reference see the NREL 2017 cost benchmark report[5]. In addition, we refer to a later NREL PV Cost Benchmark update in Q1 2022[6] that provides updated data and new calculations (based on a 7.9kW PV system).

The CEC cost-effectiveness decision methodology uses a Lifecycle Calculation approach over a twenty-five year period that involves breaking costs down to several factors, including:

Cost Analysis per standard CEC/NREL Categories:

System Hardware:
- PV modules
- Inverter/microinverters
- Structural Solar Balance of System
- Building Electrical Balance of System
- Sales tax

Installation labor
- Solar
- Electrical

Permitting, Inspection, and Interconnection (PII) costs

Overhead Costs:
- Customer acquisition (sales & marketing)
- General & administrative overhead
- Profit

Lifetime Incremental Maintenance Costs (O&M plus microinverter replacement)

[3] CEC 2018, *Measure Proposal Rooftop Solar PV Systems,* January 1, 2018, Docket 17-BSTD-02 (TN 22201) *https://efiling.energy.ca.gov/GetDocument.aspx?tn=222201&DocumentContentId=27371*

[4] NREL 2016*, U.S. Solar Photovoltaic System Cost Benchmark: Q1 2016* https://www.nrel.gov/docs/fy16osti/67142.pdf

[5] NREL 2017*, Installed Cost Benchmarks and Deployment Barriers for Residential Solar Photovoltaics with Energy Storage: Q1 2016*, https://www.nrel.gov/docs/fy17osti/67474.pdf

[6] NREL 2022, *U.S. Solar Photovoltaic System and Energy Storage Cost Benchmarks, Q1 2022*, https://www.nrel.gov/docs/fy22osti/83586.pdf

The cost breakdown from one of The Benjamin Project's bids is documented in this same level of detail in a spreadsheet (Exhibit D) consistent with these established CEC and NREL solar cost categories. The CEC-requested per unit cost estimate is also presented in the same spreadsheet format based on a single unit bid. These cost details make it clear where the project cost drivers are and contribute to the attached discussion of cost drivers and comparisons as well as differences to recent NREL cost estimates.

Also attached to this request are three other solar bids that we solicited independently as well as a fifth bid from a solar company recommended to us by the CEC (Exhibit C). All support the excessive solar project cost concerns that we have for The Benjamin Project.

The basis for our exemption request is that solar cost for the buildings in The Benjamin Project, per the CEC/NREL cost model structure is not cost effective based on the solar bids received and the resultant Life Cycle Cost Calculations with project totals between $1,481,652 and $1,888,794 or $7.07 - $9.02 per watt. Net federal solar tax credit these project numbers are between $1,037,156 and $1,322,156 or $4.95 - $6.31/watt. These numbers reflect the bids received and the total life cycle cost as defined by the CEC and NREL references. See Exhibit B for bid summary sheet details, Exhibit C for bids, and Exhibit D for detailed building cost analysis.

The following items summarize the issues that contribute to unusually high PV costs for The Benjamin Project, with supporting details, analyses and spreadsheets provided in the Exhibits.

1. The project is in the City of Lodi which in 2016 passed a City Council Resolution[7] prohibiting virtual or aggregate net metering because the City of Lodi has determined that it results in a cost shift to customers without on-site renewable generation. See Exhibit F.

2. Lodi Electric Utility has regulations in effect which preclude a PV system from back feeding significantly more power through a utility meter than is being consumed by the meter. See Exhibit G.

3. As a result of the two issues noted above, The Benjamin Project requires a PV system design for three story multi-residential buildings wherein each unit has a small, separate PV system on the roof with extensive AC wiring through the building to a PV room with PV disconnects and PV meters for each apartment and then back feeding into each unit's subpanel from the PV room to meet regulatory and code requirements. When we discuss this required design approach with other developers, contractors, and analysts they express universal agreement that this is an unusual and extraordinarily expensive approach for a PV implementation in this project.

[7] *Lodi City Council Resolution 2016-125,* http://records.lodi.gov/WebLink/DocView.aspx?id=45819&searchid=7afcd45e-3821-4e59-a537-1f261fd21e2b&dbid=0&repo=CITY-RECORDS

4. The extensive nature of the required AC wiring has significant cost implications as a result of the higher material costs that are not factored into the CEC or NREL baseline solar single-family home cost analyses. Furthermore, the impact of California labor rates or labor cost increases is not accurately accounted for in the CEC 2016 referenced NREL solar cost estimates. Nor are these California baseline costs, cost increases or local California prevailing wage rates accurately accounted for in the updated 2022 NREL study. NREL does indicate in that study that "multiple participants noted significant increased labor costs" linked to labor shortages. Yet, they did not address this issue in the cost tables for their 2022 study. Aside from legal and regulatory requirements in our jurisdiction, we see the labor line item as the most significant driver of costs in addition to our complex building design (i.e. 3-story, flat roof, multi-residential vs single family home construction). Comparing CEC/NREL costs to The Benjamin Project for return-on-investment analysis is a problem because the NREL approach is focused on single family homes. The more complex, low-rise, multi-residential Benjamin Project has a number of cost factors which are not included in a single-family home analysis.

5. The Benjamin Project's roofs are a TPO type roof which requires custom sealing of all mounting feet as well as conduit, and mounting penetrations along with walk pads to protect the roof. This penetration sealing and walk pad work must be done by the roofing subcontractor to maintain the roof warranty.

6. Due to the flat, TPO type roof on The Benjamin Project and its height, higher cost mounting and racking products are required.

7. The scale of cost efficiency with the smaller ~2kW PV (and smaller) systems required in The Benjamin Project is extremely poor compared to the CEC/NREL cost models for a 5.6kW system (2016) or a 7.9kW system (2022). As the size of each unit's PV system decreases, the cost per watt increases dramatically in a low-rise, multi-residential project like The Benjamin Project with its scope and specialized infrastructure.

Recommended Limitations of Scope of Determination required by Section 10-109(k)

Regarding limitations to the scope of the determination that we are requesting, the primary driver of the prohibitive PV costs for The Benjamin are the applicable rules and regulations enacted by the City of Lodi associated with on-site renewable generation to prevent cost shifts to customers without on-site renewable generation. If Net Energy Metering Aggregation and /or virtual net metering is not allowed in a jurisdiction due to the cost shift to non-solar customers, then this is an indication that the Commission's cost effectiveness conclusions for PV installations may be invalid on multi-story, multi-residential projects. In such a service territory our solar bids and analyses indicate that three-story residential buildings with flat roofs would surely be candidates for PV exemptions based on poor cost-effectiveness.

Closing

In summary, while our project may be compared to the single-family residential CEC/NREL cost model, we move forward with subcontractors, materials, and requirements associated with more complex low-rise, multi-residential projects and their accompanying costs. We cannot take advantage of a significantly lower cost central string inverter design often seen in such projects in larger public utility districts because of the regulations enacted by the City of Lodi. Thus we have a unique and expensive solar project – a very small-scale distributed design per unit, driven by legal and regulatory necessity - with the scope, materials, and prevailing wage labor driving higher than expected or reasonable solar project costs. We understand that you have had separate discussions with the City of Lodi regarding the CEC's assumptions as it relates to their tariffs and assumptions used in the CEC cost-effectiveness modeling. We have not addressed these in detail but understand should you require additional information to complete and confirm your analysis to date that you will contact the City of Lodi directly.

On behalf of the C Note Limited Partnership, I respectfully request that the Commission make the determination under Section 10-108 of the 2019 Energy Code that the solar PV requirements of Section 150.1(c)14 do not apply to The Benjamin Project. Thank you for the opportunity of presenting the above information.

Sincerely,

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Exhibits:
A. Discussion and Details of Project Cost Drivers
B. Bid summary sheet with CEC/NREL lifetime incremental maintenance costs
C. Solar, electrical, and roof sealing bids
D. Project spreadsheets with cost category breakdown
E. Unit spreadsheet with cost category breakdown
F. City of Lodi Council Ordinance
G. Lodi Electric Utility regulations
H. The Benjamin Project Title 24 CF1R Summary page

Cc (email only): Will Vinson, Building Standards Office, CEC
Bill Pennington, Building Standards Office, CEC
Matt Chalmers, Office of the Chief Counsel, CEC
Drew Bohan, Executive Director, CEC
Donnie Garibaldi, Partner, C Note Limited Partnership
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Martha Shaver, Attorney
Steve Schwabauer, City Manager, City of Lodi
Janice Magdich, City Attorney, City of Lodi
Dennis Canright, Chief Building Official, City of Lodi
Jeff Berkheimer, Electric Utility Director, City of Lodi
Melissa Price, Electric Utility Rates and Resources Manager, City of Lodi
John Farris, The Benjamin Project General Contractor
David Chase, Consultant to The Benjamin Project

EXHIBIT A - C Note LP

The Benjamin Solar Project Cost Analysis – Building A

6_6_2023

Introduction

Building A is chosen for this analysis because it has the lowest solar roof top costs (modules, racking, microinverters, solar BoS, solar labor, permits and interconnects, but exclusive of building AC wiring, roofing work, and O&M) of $139,904 or $3.31/watt. See the Exhibit D Building A spreadsheet for details or page six for category breakdowns. The analysis of the roof top costs in The Benjamin Project Building A analysis assists in highlighting the other unusual costs and associated issues involved in The Benjamin project's solar installation.

Building A's 24-unit PV system cost of $323,728 or $7.66/watt (exclusive of federal solar tax credit) contrasts to the 2022 NREL standard benchmark of $3.74/watt for a single-family home with a 7.9kW PV system (*NREL 2022 p22*, see references below for link). We compare these costs to the NREL Q1 2022 PV System Cost Benchmarks and highlight the similarities and differences. Finally, we identify the most significant cost drivers in the project. Exhibit D includes a separate Building A spreadsheet (along with spreadsheets for buildings B and C) providing additional detail and insight.

Cost Analysis per standard CEC/NREL Categories:

System Hardware:
- PV modules
- Inverter/microinverters
- Structural Solar Balance of System
- Building Electrical Balance of System
- Supply chain costs
- Sales tax

Installation labor
- Solar
- Electrical

Permitting, Inspection, and Interconnection (PII) costs

Overhead Costs:
- Customer acquisition (sales & marketing)
- General & administrative overhead
- Profit

Lifetime Incremental Maintenance Costs (O&M plus microinverter replacement)

System Hardware – PV Modules

440-watt Tier 1 modules are currently available for $0.485 to $0.52/watt. PV modules were

sourced/quoted at Kinect (Soligent, Renvu and Alchemy Solar are other competitive module suppliers). This price is in line with the NREL Q1 2022 benchmark report of $0.54/watt. The 440-watt class modules are declining in availability as larger wattage modules fill the supply chain. However the larger class modules are well within the $0.54/watt price point as well.

System Hardware – Microinverters

The IQ8 Enphase microinverters are available at $0.31/watt with an additional costs of $0.09/watt for required Enphase accessory components and $0.26/watt for 24 Enphase communication gateways bringing the microinverter system costs to $0.66/watt, over the NREL estimate of $0.44/watt (p22, Q1 NREL 2022). It is not clear if communication costs were included in the NREL numbers but doubtful given microinverter costs. Selecting 500-watt class modules would raise microinverter costs above this estimate but save costs in other categories as noted in the cover letter.

System Hardware – Structural BoS (Racking/Mounting)

Due to the flat roofs (≤ 5% slope) on the Benjamin project and the roof profile, designers have specified Ironridge flat roof attachments with a tilt mount system which comes in at $0.39/watt for materials from Soligent et al. In addition, because the project is a flat roof with a TPO type roofing material, every penetration must be custom sealed by the roofer and service walk pads must be installed (in order to maintain the roof warranty). The roofer's cost in materials for sealing the mounting penetrations and to install service walk pad around the solar rooftop area is $8,398 or $0.20/watt.

This category is the first instance where The Benjamin Project significantly departs from the NREL single family home benchmarks of $0.16/watt for Structural BoS (racking materials etc). The Benjamin has a low-rise, residential style flat, three-story roof requiring an extensive racking system, service walk pads and custom sealing for all roof protrusions all of which are not commonly required for single family homes. The cost for the low-rise, multi-residential Benjamin structural racking and roof materials is $0.59/watt, considerably more than the NREL average national estimate for a single-family home.

System Hardware – Building Electrical BoS

SED Electric's (the project electrical contractor) estimated line item from the project bid for this category is $32,761 or $0.78/watt. Procurement and acquisition costs are included. SED equipment specs are consistent with the electrical gear list approved by the Lodi building department. Costs driven by the utility interconnection requirements include the separate PV meter and a PV disconnect. In addition, exceptionally long runs from the roof to the PV room and back to the

apartment subpanel are not typical for single family homes. The Building Electrical BoS cost comes in at $0.78/watt. much higher than the NREL national benchmark of $0.37. But the NREL study was for a 7.9KW DC roof top single family home system. Cost per watt will escalate rapidly for very small systems such as the 1.76kW individual unit systems in this analysis.

Sales Tax

Sales tax - 8.25% in San Joaquin County – is $8,713 or $0.21/watt for Building A in The Benjamin Project. NREL's national 2022 estimate is $0.08/watt.

Total System Hardware costs (with taxes) are $114,331 or $2.71/watt. The Q1 2022 NREL benchmark is $1.59/watt for a 7.9kW PV system. Significant contributors to this difference include:

- Regulatory requirements leading to a per-unit system design
- Racking system for flat roof
- Walk pads around PV system on flat TPO roof
- Sealing roof penetrations on TPO roof
- Utility requirements for PV meter and PV disconnect
- Enphase communication gateway per unit
- Small size of each unit's system drives higher cost per watt numbers

Labor Costs

Solar labor costs: $16,827 or $0.40/watt
Building Electrical labor costs: $69,359 or $1.64/watt
Roofing labor costs: $8,379 or $0.20/watt
Total Labor costs: $94,565 or $2.24/watt

The total labor costs for Building A are $94,565 or $2.24/watt. The benchmark Q1 2022 NREL study has a number of $0.16/watt (p22). The NREL number is inexplicably low, especially since the NREL number has been consistently lowered since their 2016 report while the trade has seen labor rates rise steadily during this same period. And certainly on a smaller 1.76kW system 'per watt' numbers will be significantly larger in any case. The NREL 2022 report discusses the industry feedback regarding escalating labor costs yet does not quantify this trend or adjust their numbers. In the case of the SED (the electrical contractor) labor contribution their bid includes fully loaded prevailing wage rates. This is one example where costs for any project reflect the project's location, scope, quality level, and other unique requirements. California costs are much higher than NREL's national averages. Furthermore, a large low-rise, multi-residential complex project does not typically contract with smaller, low overhead, lower wage paying subcontractors. The SED Benjamin total

project electrical bid was more than a million dollars lower in cost than the three other large, competitive bidding electrical contractors, demonstrating their competitiveness given they have the size and scope to do this project.

Permit, Inspection, and Interconnection (PII) Costs

PII costs include $1,207 to the Lodi Electric Utility company interconnection fees and $369 to the Lodi building department for permit costs per Unit for a total of $37,824 or $0.90/watt. This compares to NREL's $0.21/watt for the single-family home project with a 7.9kW PV system. This $1,576 cost per Unit is lower than NREL's national average of $1628 but the smaller Benjamin apartment PV system at 1.76kW drives the per watt cost much higher. Another example of the financial disadvantage inherent in a small, distributed PV system on low-rise residential projects.

Overhead plus Sales and Marketing

Solar Overhead (includes Sales and Marketing): $7,226 or $0.17/watt
Building Electrical Overhead (includes Sales & Marketing): $6,509 or $0,15/watt
Roofing Overhead (includes Sales & Marketing): $5,369 or $0.13/watt
The combined Overhead and Sale & Marketing Categories are $19,131 or $0.45/watt.
This is compared to NREL's benchmark of $0.66 for the combined Overhead and Sales and Marketing categories.

O&M

The Q1 2022 NREL's updated study analysis of O&M assumes the installation of a microinverter (Q1 2022 NREL, p53). Inverter replacement costs are embedded with the O&M costs and MMP benchmarks cost for the total is $31.12/kWdc/year. Their analysis includes a 2.5% inflation factor but this is not included here. The Benjamin Project total O&M cost is calculated at $32,863 or $0.78/watt.

Profit

Solar Profit: $8,250 or $0.20/watt
Building Electrical profit: $12,711 or $0.30/watt
Roofing Profit: $4,052 or $0.10/watt
Building A profit total is $25,013 or $0.59/watt. This compares to NREL's benchmark of $0.34/watt (Q1 2022 NREL, p22) and the same comments apply regarding geographic location vs national averages as well as larger subcontractor requirements.

Discussion/Review of Cost Drivers

Several factors contribute to the significant 'per watt' cost of installing a distributed type of solar system on the Benjamin project apartments:

Lodi Electric Utility (LEU) does not allow a solar design wherein a central inverter feeds back into a house meter that does not have equivalent electric consumption. In other words, the utility does not allow a solar generating system to feed more production through a single meter than is being consumed by that meter. In addition, LEU does not allow virtual or aggregate net metering. Like many utilities, LEU no longer offers net energy metering and has determined that virtual or aggregate net metering results in a cost shift to customers without on-site renewable generation. This forces the solar designer into installing a four or five PV module system designed for each Benjamin apartment with significant cost adders. Very small systems such as this will have significant overhead cost adders compared to larger systems such as the 7.9kW residential system modeled by NREL. For example, a $452 Enphase communications interface costs $0.257/watt for a 1.76kW system versus $0.057/watt for the NREL modeled system. There are numerous scales of inefficiency to be found in a small distributed solar system such as the one the Benjamin project would need to build to meet the regulatory interconnection requirements. The utility also requires a PV meter and PV disconnect which drive material costs higher as well as labor costs associated with the long wiring runs in these larger apartment buildings.

The Benjamin project is a large, three story multi-residential project with flat roofs. The small company contractors envisioned by NREL for a single-family home are not generally equipped or qualified to handle projects of this scope. Larger contractors with 100+ field employees that have the personnel and experience in a project like this typically employ better trained, higher paid (often prevailing wage) employees with more experience. This raises labor costs significantly higher than NREL assumptions. Electrical contractors in projects of this scope typically submit formal equipment lists to the AHJ for approval. This equipment is more often than not, higher quality and more expensive than similar equipment found in single family residences. Finally the size of the buildings necessitates long wire runs incurring significant labor costs for electrical.

The flat roofs on the Benjamin project significantly increase the cost of solar racking. Rather than installing rails directly onto simple, low cost mounting feet as would be found on a single-family residential installation, more expensive mounting feet and hardware are required along with a tilt mount racking system to maintain an efficient solar angle for the PV modules. Then, due to the nature of the TPO flat roof, the roofing subcontractor needs to custom seal all roof penetrations and

install service walking pads to protect the TPO roof and maintain his roof warranty.

One interesting analysis is to look at roof top solar costs only (minus roofing penetration sealing work and building electrical work) to see how these costs for a 1.76kW PV system compared to standard NREL benchmarks for a 7.9kW PV system. Again, to be clear, this does not include the electrician's building wiring or roofing penetration sealing bids. O&M costs are excluded as well.

Category	Building A Cost	Building A per watt*	NREL per watt*
Solar system hardware:	$64,459	$1.53/watt	$1.14/watt
Solar taxes:	$5,318	$0.13/watt	$0.08/watt
Solar labor:	$16,827	$0.40/watt	$0.16/watt
PII costs:	$37,824	$0.90/watt	$0.21/watt
Solar OH & S and M	$7,226	$0.17/watt	$0.26/watt
Solar profit:	$8,250	$0.20/watt	$0.34/watt
Solar total:	$139,904	$3.31/watt	$2.59/watt

* Electrical BoS (Building AC) omitted (NREL $0.37/watt)

The differences to note between one of the lower Benjamin bids and NREL:

1. Higher cost due to flat roof racking system costing.
2. Higher local taxes (8.25% vs NREL national average)
3. Labor costs driven by local wages, more racking labor & apportioned to smaller system. and NREL's 'per watt' labor cost is associated with a larger system.
4. PII costs per watt apportioned to smaller system (1,76kW vs 7.9kW)

The point is that even without roofing and building electrical added in, we see a significant increase over NREL benchmarked solar-only costs. A small amount of that increase is driven by the racking costs but much of it derives from the fact that this is a small 1.76kW system and certain fixed and variable costs are much higher per watt. Despite these issues, given the understandably higher cost for California vs NREL's national average, the solar-only roof top costs of this project are clearly not the major driver of excessive cost in this project. The two most significant drivers of excessive cost are 1. the Building AC wiring costs driven by regulatory issues essentially limiting the scope of the solar design and 2. the flat roof design and penetration sealing and walk pad requirements.

Summary

We have reviewed the contributing factors that drive higher solar costs on the Benjamin project Building A in detail. The analysis calculates $323,728 total cost or $7.66/watt for this project. The separate spreadsheet (Exhibit D) provides additional insight. Regulatory requirements, building design, larger contracting companies (given the project scope), and the small, per unit PV system design all play a key role in escalating our overall costs vs a single-family home in the CEC/NREL standards. We have compared our per watt costs to NREL benchmarks and noted the specific cost drivers that create the differences. Of course, NREL's analysis is a national average and they note, importantly, that their data is intended to be used for long term policy decisions not short-term, localized analyses.

It appears that the impact of labor cost increases - especially in California - are not well accounted for in the NREL work (e.g. impact of prevailing wage rates) although they do comment that "multiple participants noted significant increased labor costs" linked to labor shortages. Yet, they have not addressed these issues in the cost tables for the 2022 study. We see the labor line item as the most significant driver of costs along with the unique building design (i.e. three story, flat roof, multi-residential vs single family home).

It should also be noted that these line-item breakdown costs are taken from one of the lower bids we received. Other bids were significantly higher, including one from a CEC-requested solar company. In fact, the prevailing wage estimate on that bid raised the project cost by $246,411 or $1.18/watt which further highlights one of the cost drivers on The Benjamin Project.

In summary, while our project may be compared to the single-family residential CEC/NREL cost model, we move forward with subcontractors, materials, and requirements associated with more complex low-rise, multi-residential projects and their accompanying costs. We cannot take advantage of a significantly lower cost central string inverter design often seen in such projects in larger public utility districts because of the regulations enacted by the City of Lodi. Thus we have a unique and expensive solar project – a very small-scale distributed design per unit, driven by legal and regulatory necessity - with the scope, materials, and prevailing wage labor driving higher than expected or reasonable solar project costs.

References

NREL Q1 2022 Tech report TP-7A40-83586 *https://www.nrel.gov/docs/fy22osti/83586.pdf*
Also see 2016 NREL report: https://www.nrel.gov/docs/fy16osti/67142.pdf
CA CEC 2019 "Measure Proposal Rooftop Solar PV Systems" TN# 222201

Summary_Benjamin Solar Project Bids with PII, O&M, and Roofing cost adders

6_06_2023

Chase Construction and SED Electric - 'Solar + AC electrical'

Solar + AC electrical bid:	$1,062,818	(Chase Construction $510,218 [solar on roof] and SED $552,600 [Building AC wiring])
Building Dept + LEU fees:	$170,208	Building department permit per unit: $369, LEU fee per unit: $1207
O&M + Inv Replacement:	$162,944	per Q1 2022 NREL doc, $31.12/kWdc/year
Roof penetration seals:	$136,684	per State Roofing Systems, project roofing subcontractor
Total project bid:	**$1,532,654**	

Solar + AC electrical single unit bid:	$11,775	(Chase Construction and SED)
Building Dept + LEU fees:	$1,576	Building department permit per unit: $369, LEU fee per unit: $1207
O&M + Inv Replacement:	$1,369	per Q1 2022 NREL doc, $31.12/kWdc/year
Roof penetration seals:	$2,930	per State Roofing Systems, project roofing subcontractor
Total project bid:	$17,650	

Lenzi - 'Solar + AC electrical'

Lenzi Benjamin Project Bid:	$1,240,776	per attached bid
Building Dept + LEU fees:	$170,208	Building department permit per unit: $369, LEU fee per unit: $1207
O&M + Inv Replacement:	$162,944	per Q1 2022 NREL doc, $31.12/kWdc/year
Roof penetration seals:	$136,684	per State Roofing Systems, project roofing subcontractor
Total project bid:	**$1,710,612**	

Lenzi Single unit bid:	$14,957	per attached bid
Building Dept + LEU fees:	$1,576	Building department permit per unit: $369, LEU fee per unit: $1207
O&M + Inv Replacement:	$1,369	per Q1 2022 NREL doc, $31.12/kWdc/year
Roof penetration seals:	$2,930	per State Roofing Systems, project roofing subcontractor
Total project bid:	$20,832	

AMPWRX - 'Solar + AC electrical'

AMPWRX Benjamin Project Bid:	$1,249,036	per attached bid
Building Dept + LEU fees:	$170,208	Building department permit per unit: $369, LEU fee per unit: $1207
O&M + Inv Replacement:	$162,944	per Q1 2022 NREL doc, $31.12/kWdc/year
Roof penetration seals:	$136,684	per State Roofing Systems, project roofing subcontractor
Total project bid:	**$1,718,872**	

AMPWRX Single unit bid:	$14,300	per attached bid
Building Dept + LEU fees:	$1,576	Building department permit per unit: $369, LEU fee per unit: $1207
O&M + Inv Replacement:	$1,369	per Q1 2022 NREL doc, $31.12/kWdc/year
Roof penetration seals:	$2,930	per State Roofing Systems, project roofing subcontractor
Total project bid:	$20,175	

EXHIBIT B - C Note LP

CalSolarInc - 'Solar + AC electrical'

CalSolarInc Benjamin Project Bid:	$1,341,721	per attached bid ** open wage based (prevailing wage $246,411 higher)*
		- Includes old building department fee schedule and LEU fees
	$3,552	Increase in building department fees
O&M + Inv Replacement:	$162,944	per Q1 2022 NREL doc, $31.12/kWdc/year
Roof penetration seals:	$136,684	per State Roofing Systems, project roofing subcontractor
Total project bid:	**$1,644,901**	
	$1,888,794	Includes prevailing wages of +$246,411

Barrier Solar - 'Solar + AC electrical'

Barrier Solar Benjamin Project Bid:	$848,000	per attached bid
		** Barrier Solar per their email deferred to bid on racking without more study and conversation with Lodi building department
	$115,000	Racking estimated add a minimum of $104,720 not included in their bid
	$48,816	108 Enphase communication gateways
Building Dept + LEU fees:	$170,208	Building department permit per unit: $369, LEU fee per unit: $1207
O&M + Inv Replacement:	$162,944	per Q1 2022 NREL doc, $31.12/kWdc/year
Roof penetration seals:	$136,684	per State Roofing Systems, project roofing subcontractor
Total project bid:	**$1,481,652**	Includes a minimal estimate for racking, see line item above in red

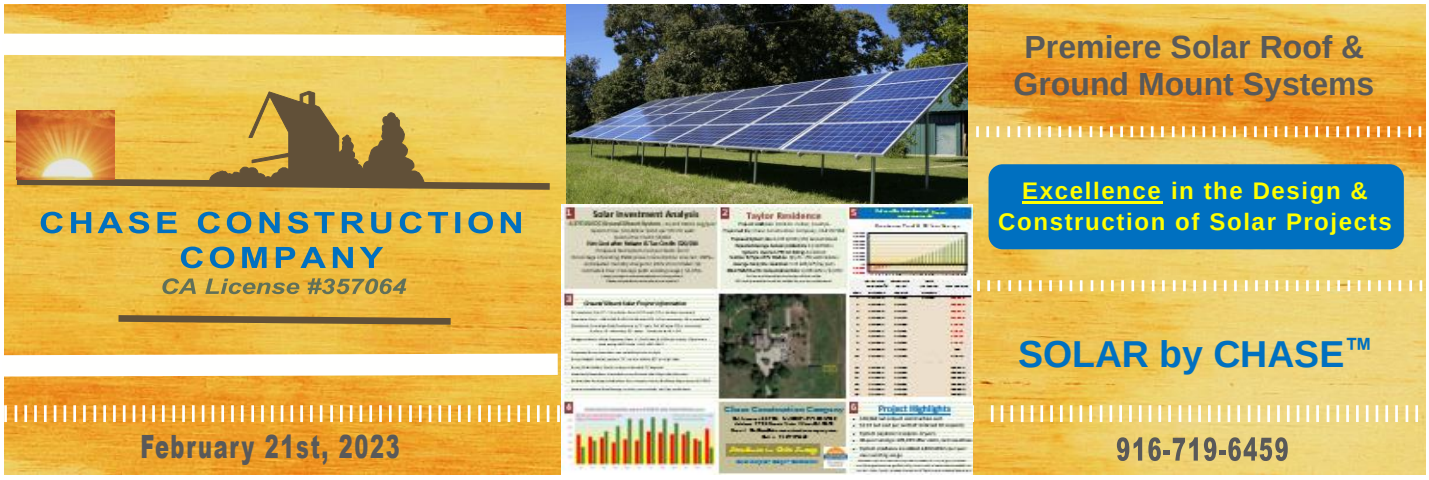
PB Electric - 'AC electrical only'

PB Electric Benjamin Project AC electric Bid:	$594,045	per bid
Single unit bid:	no bid	

SolarTech: **No bid received**

EXHIBIT B - C Note LP

EXHIBIT C - C Note LP
(Subcontractor Bids)



C Note Limited Partnership
1420 South Mills Avenue, Suite M
Lodi, CA 95242
Chris Duke, John Farris

Thank you for the opportunity to bid on the solar roof top portion of the Benjamin Project. After further discussions with you, Lodi Electric and your engineering team & consultants we submit the following updated bid for your project. We have also attached a spreadsheet detailing our bid's bottoms up cost structure and, at your request, it also incorporates roofing and electrical cost breakdowns (bids from your subcontractors) as well as CEC/NREL lifecycle costs. We offer our solar cost details on larger projects so that the customer can review our costs, ask questions, and discuss any project-specific approaches to how we might lower your project costs.

This 'solar-only' roof top bid includes Labor and Materials for: PV modules, rail mounting and mounting structure, microinverters and associated array-only wiring, PV safety notifications & labeling, system communications/monitoring, and system commissioning. We are responsible for installing the microinverter output cabling to the vicinity of the electrician-installed roof junction box(s). Acquisition and installation of the junction box(s) and all associated equipment, wiring and grounding from the junction box(es) throughout the building to individual units is the responsibility of your project electrical subcontractor. We are responsible for any required equipment and associated services necessary to complete the solar-only project phase other than those listed in Exclusions.

The Benjamin Project (2525 Century Blvd, Lodi CA) Bid:

Buildings	DC kW per Building	Per Building Cost	x2 Subtotal
A1/A2	42.240	$102,080	$204,160
B1/B2	36.080	$87,969	$175,938
C1/C2	26.400	$65,060	$130,120
		Total Project Bid:	$510,218

Total installed DC watts on roof: 209,440 watts

Solar-only cost per watt: $2.44/watt (does not include 30% Federal tax credit)

** Please be aware that this project has higher than normal solar and associated project costs related to city/utility fees, utility regulations, height of the buildings, type of roof, and roof warranty.*

Payment terms, schedule, material lead times, specifications, legal requirements, insurance and bonds, and warranty terms will be included in a contract proposal should we receive a green light on this proposal. This proposal remains in effect for 30 days with the caveat that increases in labor and/or material costs after 30 days may be negotiated in the contract.

Requirements and Inclusions

1. Meet or exceed The Benjamin Title 24 solar requirements per building (dated 5/24/2021). See included spreadsheet for solar per building details. Project total required per CF1R: 204,720 watts DC. Design total: 209,440 watts DC. (We maintained the 440-watt modules for this bid but see the opportunity to lower costs up to $50k -$75K with larger modules, less racking, and lower labor costs. We'll address this opportunity when your schedule is in place and we can receive updated vendor pricing and module availability.)

2. Enphase microinverters to match PV module output (IQ8+).

3. Ironridge FRA system with mounting consistent with structural engineering requirements.

4. Balance of Systems components as required.

5. Installation of communications/monitoring system.

6. Roof top DC and AC wiring (to electrician's roof junction box

7. All placard and safety labels as required by CEC/NEC and AHJ.

Bid Exclusions:

1. AC wiring, disconnects, j-boxes, and electrical boxes from roof top j-box(es) down to PV utility room and back up to unit subpanels (referred to as building AC). Building AC to be completed by your selected electrical contractor.
2. Building Permit and Lodi Electric Utility interconnection fees
3. Structural and electrical engineering.
4. Roof penetrations (mounting feet, conduit penetrations et al).
5. Performance and payment bonds.
6. Extended warranties.

As always, please contact us with any questions/concerns, changes, or clarifications.

Thanks again for the opportunity to bid on solar for The Benjamin!

David Chase
Chase Construction Company
CA License #357064
916-719-6459

EXHIBIT C - C Note LP

11337 Trade center Dr #400
Rancho Cordova, CA. 95742
Phone: 916.812.1578
License #831050

November 4, 2022

The Benjamin Apartments Solar

Project: Solar for 108 units 6 Buildings

SED offers the following proposal for the project listed above after review of the General Conditions, General Requirements, Specifications, Drawings and other Contract Documents. SED shall furnish labor, material, equipment, and services required to complete Electrical Scope of work per solar plans.

Inclusions:

1. 2 pole 15-amp breaker per unit.
2. PV meter per unit.
3. Fused disconnect per unit.
4. 4 J-box's on roof.
5. 12-3 NM cable from unit subpanel to PV Meter.
6. 12-3 NM cable from PV meter to Fused disconnect.
7. 12-3 NM cable from fused disconnect to J-box on roof.
8. Ground wire from main electrical room to PV frame on roof.

Exclusions:

1. Permits or Utility Company fees.
2. Payment and performance bond.
3. PV frame.
4. Utility meters.
5. Anything not mentioned in inclusions.

Total Price: $552,600.00

Sincerely,
Eric Smeltzer

EXHIBIT C - C Note LP

State Roofing Systems Inc.

January 5, 2023

Attn: Chris Duke
RPM

Re: The Benjamin
2525 Century Blvd.,
Lodi, CA 95242

Mr. Duke,
Please see the following proposal for additional walkpads and penetration boots for solar for the above reference project:

Note – This is our quote based on material costs at the time of this proposal.

Scope of Work – Building C

1.) **Install approximately 200lf of additional walkpads as shown on solar plans**
2.) **Install 72 penetration boots for solar stanchions**

Total: $23,407.00
Add for penetrations (beyond what is noted above) - $140.00 per penetration
Add for additional walkpads - $65 per lf (pricing will be based on lf rounded up to 50lf increments)

Thank you,

Mike Perata
mikep@stateroofingsystems.com
State Roofing Systems
510-772-0129

Single Unit estimate:
Walkpad 30' x $65 = $1950
Penetrations 7 x $140 = $980
Total: $2,930

EXHIBIT C - C Note LP

AMPWRX Solar
777 S Ham Lane Suite A Lodi, CA 95242
Mike Favero (209) 331-0693 * mike@ampwrx.comwww.AMPWRX.com * info@ampwrx.com

3/25/2023

Benjamin Project
2525 Century Blvd Lodi, CA 95242

Scope of Work

System size, DC: 209.44kW, AC: 182.40kW Estimated Annual Production: 329,570kWh
Canadian Solar 440w panels
EnPhase IQ7Plus Microinverters
Unit A 42,240 watts x 2 buildings, Unit B 36,080 watts x 2 buildings, Unit C 26,400 watts x 2 buildings
Labor, material, equipment

Inclusions:

1. 2 pole 15-amp breaker per unit.
2. PV meter per unit.
3. Fused disconnect per unit.
4. 4 J-box's on roof.
5. 12-3 NM cable from unit subpanel to PV Meter.
6. 12-3 NM cable from PV meter to Fused disconnect.
7. 12-3 NM cable from fused disconnect to J-box on roof.
8. Ground wire from main electrical room to PV frame on roof.

Exclusions:

1. Permits or Utility Company fees.
2. Payment and performance bond.
3. Utility meters.
4. Anything not mentioned in inclusions.
5. Roof penetration sealing

Total project price = $1,249,036.10 **Single Unit #213 Price = $14,300**

AMPWRX Solar
777 S Ham Lane Suite A Lodi, CA 95242
CSL 1077832
(866) 267-9791 * info@ampwrx.com

EXHIBIT C - C Note LP

PO BOX 343 Victor, Ca 95253
Phone: 209 224-5950
CSLB: 1007527

PROPOSAL NO: 2023-200089_v2

Date: 03-17-2023

To: Chris Duke
RPM, Lodi, Ca

Re: The Benjamin, Roof Mounted Solar Systems
Buildings 1-6

FOR THE SUM AS SET FORTH BELOW IS A PROPOSAL FOR WORK AND SERVICES. PLEASE REFER TO THE ATTACHED SCOPE OF WORK FOR CLARIFICATION TO THE WORK AND SERVICES INCLUDED IN THE PROPOSAL, WHICH SHALL BE DEEMED EXHIBIT "A".

DRAWING SHEETS:

- Will be provided by Solar Engineer

THE TOTAL PRICE FOR ALL WORK AND SERVICES PROVIDED IS:
$1,240,776.00

ONE MILLION TWO HUNDRED FORTY THOUSAND SEVEN HUNDRED AND SEVENTY SIX DOLLARS.

Payment Terms:
TBD on Final Contract

EXHIBIT "A" – Scope of Work

Clarifications and Assumptions:

1) Factors regular work hours only. Monday through Friday- 7 am to 4 pm.
2) Lenzi Team has full access to project site, and space to perform work within the scope.
3) This proposal does not include overtime, holiday or special shift work.
4) OT to be billed via change order at $95 per man hour.

Included Scope:

Lenzi to provide all labor and materials for a complete job of:

Installation of 209.28 kW of Flat Roof Mounted Solar Systems
(108 Units)

20-25 Day lead time on drawings
TBD City of Lodi Approval
Material needs to be released by 04-17-23
Schedule depending on access and weather

PERMITS & ENGINEERING / DRAWINGS

- Handle all building permits and Engineering
- All costs (Permitting & Engineering) included in proposed number along with AHJ approved drawings

PV SYSTEM

- Install 440w URE Modules
- Enphase IQ7 208v Inverters
- Ironridge Flat Roof Attachments
- Install Enphase Wireless communication from inverters to IOS Platform
- Lodi Electric Utility Production Meter per unit
- AC wire post production meter to interconnect in unit sub panel
- Price includes All Solar Equipment, Mechanical Install, DC Wiring, AC Wiring including interconnection and Sundry Items
- Roof Sealing for mounts by others

Exclusions:

- Main Service Upgrades
- Breaker Degrade
- Additional LEU Fees (Outside of Permitting)
- Painting
- All sealing of roof penetrations

Accepted By: _____ Title: _____

Signature: _____ Date: _____

This proposal is only good for 30 Days.

Lenzi INCORPORATED
CONSTRUCTION AND SOLAR

PO BOX 343 Victor, Ca 95253
Phone: 209 224-5950
CSLB: 1007527

PROPOSAL NO: 2023-200089-01

Date: 03-17-2023

To: Chris Duke
RPM, Lodi, Ca

Re: The Benjamin, Roof Mounted Solar Systems
Unit 213

FOR THE SUM AS SET FORTH BELOW IS A PROPOSAL FOR WORK AND SERVICES. PLEASE REFER TO THE ATTACHED SCOPE OF WORK FOR CLARIFICATION TO THE WORK AND SERVICES INCLUDED IN THE PROPOSAL, WHICH SHALL BE DEEMED EXHIBIT "A".

DRAWING SHEETS:

- Will be provided by Solar Engineer

THE TOTAL PRICE FOR ALL WORK AND SERVICES PROVIDED IS:

$14,957.00

FOURTEEN THOUSAND NINE HUNDRED FIFTY SEVEN DOLLARS.

Payment Terms:
TBD on Final Contract

EXHIBIT "A" – Scope of Work

Clarifications and Assumptions:

1) Factors regular work hours only. Monday through Friday- 7 am to 4 pm.
2) Lenzi Team has full access to project site, and space to perform work within the scope.
3) This proposal does not include overtime, holiday or special shift work.
4) OT to be billed via change order at $95 per man hour.

Included Scope:

Lenzi to provide all labor and materials for a complete job of:

Installation of 1.92 kW of Flat Roof Mounted Solar Systems

20-25 Day lead time on drawings
TBD City of Lodi Approval
Material needs to be released by 04-17-23
Schedule depending on access and weather

PERMITS & ENGINEERING / DRAWINGS

- Handle all building permits and Engineering
- All costs (Permitting & Engineering) included in proposed number along with AHJ approved drawings

PV SYSTEM

- Install 440w URE Modules
- Enphase IQ7 208v Inverters
- Ironridge Flat Roof Attachments
- Install Enphase Wireless communication from inverters to IOS Platform
- Lodi Electric Utility Production Meter per unit
- AC wire post production meter to interconnect in unit sub panel
- Price includes All Solar Equipment, Mechanical Install, DC Wiring, AC Wiring including interconnection and Sundry Items
- Roof Sealing for mounts by others

Exclusions:

- Main Service Upgrades
- Breaker Degrade
- Additional LEU Fees (Outside of Permitting)
- Painting
- All sealing of roof penetrations

Accepted By: _____ Title: _____

Signature: _____ Date: _____

This proposal is only good for 30 Days.

EXHIBIT C - C Note LP

PB Electric, Inc.

3162 Luyung Dr.
Rancho Cordova, CA 95742
License : 671377
Expires: 06/30/2023

(916) 858-1342 Phone
(916) 858-1625 Fax

Proposal #F-3-23

PROPOSAL SUBMITTED TO		TODAY'S DATE	DATE OF PLANS/PAGE #'S
John Farris – J Farris Construction		3/3/2023	N/A
PHONE NUMBER	EMAIL	JOB NAME	
(209) 810-25701	john@jfccompanies.com	Benjamin Apartments	
ADDRESS, CITY, STATE, ZIP		JOB LOCATION	
P.O. Box 265 Wallace, CA 95254		Lodi, CA	

Dear John,

PB Electric, Inc. is pleased to provide this proposal for the scope of work below:

Inclusions:

- Two (2) 15-Amp breaker per unit.
- One (1) PV meter per unit.
- One (1) fused disconnect per unit.
- Four (4) J-boxes on roof.
- 12-3 NM cable from unit subpanel to PV Meter.
- 12-3 NM cable from fused disconnect to J-box on roof.
- Ground wire from main electrical room to PV frame on roof.

Exclusions:

- Permits or Utility Company Fees.
- Payment and Performance bonds.
- PV Frame.
- Utility Meters.
- Anything not mentioned in inclusions.

We propose hereby to furnish material and labor – complete in accordance with above specifications for the sum of:

Five hundred ninety-four thousand forty-five dollars $594,045.00)

Payment as follows: Due Upon Completion

All material is guaranteed to be as specified. All work to be completed in a substantial workmanlike manner according to specifications submitted, per standard practices. Any alteration or deviation from above specifications involving extra costs will be executed only upon written orders and will become an extra charge over and above the estimate. All agreements contingent upon strikes, accidents, or delays beyond our control. Owner to carry fire, tornado, and other necessary insurance. Our workers are fully covered by Workmen's Compensation Insurance. Accounts overdue beyond 30 days of billing will be charged at an interest rate of 18% per annum. Customer is also liable for an additional 100% of unpaid balance plus incidental collections costs, including attorney fees. If either party commences legal action to enforce its rights pursuant to this agreement, the prevailing party in said legal action shall be entitled to recover its reasonable attorney's fees and costs of litigation relating to said legal action, as determined by a court of competent authority.

Note: this proposal may be withdrawn by us

Authorized Signature Katelyn Wilkinson if not accepted within 30 days.

ACCEPTANCE OF PROPOSAL The above prices, specifications and conditions are satisfactory and are hereby accepted. You are authorized to do the work as specified. Payment will be made as outlined above.

Signature _____

Signature _____

Date of Acceptance _____

Certified SEED Contractor
Certified Small Business State of California #1441320 Exp. 9/30/2023.
D.I.R Registration #1000007411

EXHIBIT C - C Note LP

CalSolarInc

Cal Solar Inc.
200 S. San Pedro Street Suite 500
Los Angeles, CA 90012
info@calsolarinc.com
5/5/2023

PROJECT INFO:

The Benjamin Apartment Complex
2525 Century Boulevard
Lodi, CA 95242
Proposal Revision: R0

CLIENT:

Michael Carouba
RPM Company

California Solar Integrators, Inc.(CSI) will provide all labor, equipment and materials for the above-referenced project as a design-build subcontractor. Our firm will coordinate the completed design with the architect and engineers and the installation with the General Contractor and other subcontractors. CSI will manage the installation of the complete turn-key solar photovoltaic system described below:

SYSTEM EQUIPMENT:

Category	Qty	Description
Modules	**482**	Yotta 450W Solar Photovoltaic Modules or Equivalent - 12 Year Warranty / 25 Year Performance Warranty
Inverters	**482**	Enphase Microinverters (Enphase IQ8+) (25-Year Warranty)
Monitoring	**108**	Enphase IQ Gateway - Hardwired Connection
Racking		Ironridge Anodized Aluminum Racking System - FRA System
Balancing System		Balance of System Components

SYSTEM GOAL:
TITLE 24 OFFSET PV SYSTEM

PREPARED BY:

Perry Meek
perry@calsolarinc.com
858-999-1127

PRICING/INCENTIVES:

DC System Size	216.90	kW
CEC AC System Size	195.06	kW
Estimated Annual System Production	365,265	kWh
Estimated Annual Energy Savings	$43,832	

	OPEN WAGE	PREVAILING WAGE *
BASE BID INSTALLATION COST:	**$1,211,365**	**$1,457,776**
ALLOWANCE FOR PLAN CHECK & PERMIT FEES:	**$36,300**	**$36,300**
ALLOWANCE FOR UTILITY FEES:	**$130,356**	**$130,356**
TURN-KEY INSTALLATION COST:	**$1,341,721**	**$1,588,132**

* California Assembly Bill No. 2143: Any commercial renewable electrical generation facility constructed after December 31, 2023 shall be at minimum performed at the required general prevailing rate of per diem wages for the location.

Cal Solar Inc.
200 S. San Pedro Street Suite 500
Los Angeles, CA 90012
info@calsolarinc.com
5/5/2023

GENERAL/ASSUMPTIONS:

- Sufficient space is available in the electrical room or exterior for inverters & solar transformers
- Sufficient space is available in the electrical room for required AC disconnects

INCLUSIONS:

- Plan check and permitting fees, allowance up to $36300 permit fee
- Utility company interconnection and equipment fees, allowance up to $130356 interconnection fee
- NEM PV System with budgeted 108 utility interconnection(s) (Expected 120/240V Tie-in)
- Modules to be installed in approved location and/or per plan
- Solar roof racking attachments (Estimated 724 Attachment Amount)
- Inverter(s) to be mounted in approved location and/or per plan
- All conduit and wire for modules, inverter(s)(Rough-In by Others--See Exclusions)
- All required disconnects, placards, labelling, etc. required by code and/or AHJ
- All required DC conduit and wiring installed per NEC and per plan
- All required AC wiring installed per NEC and per plan
- Connection to electrical panel including solar circuit breaker(s) or line side tap(s) per NEC
- Monitoring system connection(s) and startup
- System start-up/commissioning and field training
- Coordinate, attend, and pass all required inspections

Cal Solar Inc.
200 S. San Pedro Street Suite 500
Los Angeles, CA 90012
info@calsolarinc.com
5/5/2023

CLARIFICATIONS & EXCLUSIONS:

- Design, structural/electrical engineering, permitting
- Any other wage requirements outside of regular (non-prevailing) wages
- Plan check and permitting fees above $36300
- Utility company interconnection and equipment fees above $130356
- Utility company equipment upgrade cost
- Additional house and solar subpanel per meter connection by Others (where VNEM is not possible)
- Flashing and waterproofing of roof attachments and conduit penetrations (Estimated 724 Penetration Amount)
- Roof blocking and/or sleepers (Estimated 724 Blocking Amount)
- Structural reinforcements, concrete embed plates, welding, spread footings, site upgrades, or special inspections
- Electrical switchboards to be solar ready or provided with PV Line Side Taps
- Rough in conduit & data from electrical room(s) to roof(s)
- Any additional roof perimeter safety protection other than stanchioned safety flags
- Increase in project cost due to obsolete specified solar photovoltaic module
- Additional roof attachments and waterproofing over the estimated amount (Estimated 724 Penetration Amount)
- Estimated $100 cost per additional attachment (excluding waterproofing)
- Performance and payment bonding
- Additional extended warranties
- Changes to preliminary solar layout and other equipment listed in the proposal
- Change in PV system design based on planset dated/labeled APPROVED PLANS NOV 16 2022
- Cost Escalations if the price of any material, equipment and related components, or supplies furnished by Cal Solar Inc.
- increases from the date of this proposal (or any resulting agreements) to the date of delivery to the job site
- All price estimates are based on today's product cost and are at risk of price increase outside of 7 days
- Required excusable and compensable delays: material availability/delays, utility review & inspection delays, building
- department plan check & inspection delays, manpower availability delays

EXHIBIT C - C Note LP

Protect Your Property –
And Your Profits –
With Barrier!

BARRIER
SOLAR POWER SYSTEMS

PROPOSAL/CONTRACT

Roofing - Coatings - Insulation - Solar

BARRIER
ROOFING • COATINGS • INSULATION • SOLAR

Chris Duke

From: Andy Zavorek <andy@barriersolar.com>
Sent: Tuesday, May 9, 2023 10:39 AM
To: Chris Duke
Cc: chase95693@gmail.com; john@jfccompanies.com
Subject: RE: The Benjamin Rooftop Solar - Barrier
Attachments: RPMCompany-TheBenjaminApartmentsRooftopSolar-5-9-2023.pdf

HI Chris,

Please find the updated bid. Please note that I have included "prevailing wage" as in 2024 prevailing wage is required on all solar that is over 15KW. I am not sure on the timing of your project but I don't believe you guys have a permit on the project?. As I mentioned, this is a estimate and would need to dig much deeper with my team and engineers to determine feasibility during the "Due Diligence" period to validate our numbers. Here is what would be included per apples to apples with the other competing bids:

Inclusions:

1. Prevailing Wage
2. (6) Buildings
3. Canadian Solar Tier 1 Modules and Enphase IQ8 Microinverters
4. 2 pole 15-amp breaker per unit.
5. PV meter per unit.
6. Fused disconnect per unit.
7. J-box's on roof.
8. 12-3 NM cable from unit subpanel to PV Meter.
9. 12-3 NM cable from PV meter to Fused disconnect.
10. 12-3 NM cable from fused disconnect to J-box on roof.
11. Ground wire from main electrical room to PV frame on roof.

Exclusions:

1. Permits or Utility Company fees.
2. Payment and performance bond.
3. PV frame.
4. Utility meters.
5. Anything not mentioned in inclusions.

Andy Zavorek

BARRIER SOLAR INC.
2671 S Cherry Ave
Fresno, CA 93706
P.559.233.1680 | F.559.233.1685 |C.559.647.2521
WWW.BARRIERSOLAR.COM

The Benjamin Apartments Rooftop Solar

,
Lodi , CA
5/8/2023

Prepared By

Andy Zavorek
(559) 647-2521
andy@barriersolar.com

Prepared For:

RPM Company
Chris Duke
chrisduke@rpmcompany.com

Barrier has been installing Solar since 2008 and has established itself as Central California's trusted source for design, engineering and installation of turn key solar, serving the full range of commercial, industrial and residential clients. To date we have installed over 30MW of roof, car-port, fixed and tracking ground mounted systems ranging from 5KW to 1.5MW.

Barrier Solar enjoys a hard-earned reputation for outstanding customer service and client satisfaction validated by the long list of repeat customers. Some of our installation highlights include but are not limited to: Budweiser, Coors Light, Regal Cinemas, Eye Q Vision and Costco to name a few.

Once you have had a chance to review our proposal, please don't hesitate to reach out should you have any questions or concerns. We appreciate the opportunity to partner with you in your quest for energy independence.

The Barrier Solar Team

Regal Cinemas (Fresno, Ca) 756KW Ballasted Roof Mounted

2.1.1 PV System Details

General Information
Facility: Meter #1
Address: Lodi CA

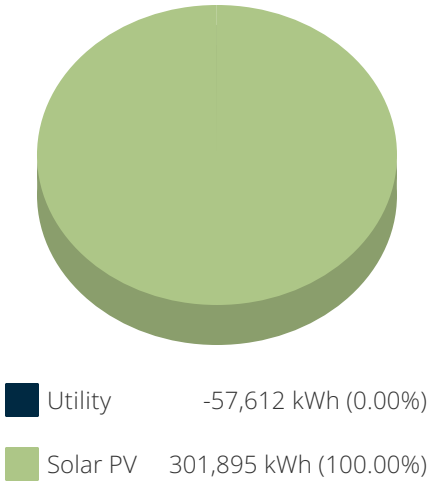
Solar PV Equipment Description
Solar Panels: (392) Canadian Solar CS6W-535MS
Inverters: (392) Enphase Energy IQ8A-72-2-US

Solar PV Equipment Typical Lifespan
Solar Panels: Greater than 30 Years
Inverters: 25 Years

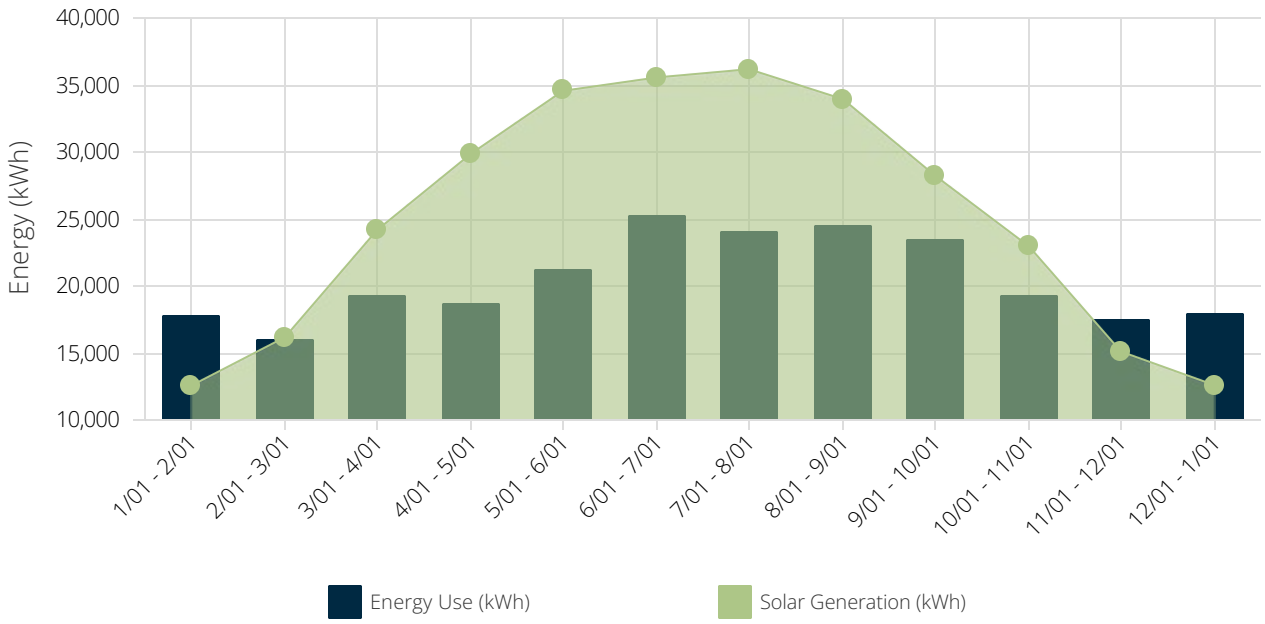
Solar PV System Cost and Incentives	
Solar PV System Cost	$848,800
Federal Tax Credit	-$254,640
State (CA) 10-yr Depreciation	-$67,904
Federal - MACRS Bonus Depreciation	-$216,444
Net Solar PV System Cost	**$309,812**

Solar PV System Rating
Power Rating: 209,720 W-DC
Power Rating: 193,932 W-AC-CEC

Energy Consumption Mix
Annual Energy Use: 244,283 kWh



Monthly Energy Use vs Solar Generation



2.1.2 Rebates and Incentives

This section summarizes all incentives available for this project. The actual rebate and incentive amounts for this project are shown in each example.

Investment Tax Credit (ITC), Commercial - 30%

The Inflation Reduction Act (IRA) of 2022 establishes and extends the federal Investment Tax Credit (ITC) for solar photovoltaic (PV) systems at a rate of 30% of the total PV system cost. The 30% ITC was extended for 10 years, through 2032. Unlike tax deductions, this tax credit can be used to directly offset your tax liability dollar for dollar. The IRA extended the carryback period to 3 years, and the carryforward period to 22 years, in cases where the tax credit exceeds a customer's tax liability in the 'placed-in-service' year. For PV projects greater than 1 MW AC in size, the IRA established prevailing wage and apprenticeship requirements in order to qualify for the full 30% "increased rate", rather than a "base rate" which would only qualify for a 6% ITC. Projects with an output of less than 1 megawatt qualify for the "increased rate" irrespective of if prevailing wage or apprenticeship requirements are met.

Total Incentive Value: $254,640

State (CA) 10-year straight line Depreciation

The straight line method divides the cost or tax basis, into equal amounts over the estimated useful life of the property. Per California Franchise Tax Board, Form 3885, state MACRS depreciation is not allowable for Corporations, except to the extent such depreciation is passed through from a partnership or LLC classified as a partnership.

Total Incentive Value: $67,904

Federal MACRS, Bonus Depreciation - 60% (2024 Place in Service)

Under the federal Modified Cost Recovery System (MACRS), businesses may recover investments in solar PV property through depreciation deductions over a 5-year established lifespan. For PV systems, the taxable basis of the equipment must be reduced by 50% of any federal tax credits associated with the system. The Tax Cuts and Jobs Act of 2017 included provisions that modified bonus depreciation under Code Section 168(k). PV projects that were placed in service after September 27, 2017 and before January 1, 2023 were eligible for 100% bonus depreciation, allowing eligible entities to deduct the entire allowable tax basis of the system in the first year of operation. Projects placed in service in 2024 qualify for 60% bonus depreciation, which means in the first year of service, companies can elect to depreciate 60% of the basis while the remaining 40% is depreciated under the normal MACRS schedule.

Total Incentive Value: $216,444

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From: **Andy Zavorek** <andy@barriersolar.com>
Date: Tue, May 9, 2023 at 10:39 AM
Subject: RE: The Benjamin Rooftop Solar - Barrier
To: Chris Duke <ChrisDuke@rpmcompany.com>
Cc: chase95693@gmail.com <chase95693@gmail.com>, john@jfccompanies.com <john@jfccompanies.com>

Hi Chris,

Please find the updated bid. Please note that I have included "prevailing wage" as in 2024 prevailing wage is required on all solar that is over 15KW. I am not sure on the timing of your project but I don't believe you guys have a permit on the project?. As I mentioned, this is an estimate and would need to dig much deeper with my team and engineers to determine feasibility during the "Due Diligence" period to validate our numbers. Here is what would be included per apples to apples with the other competing bids:

Inclusions:

1. Prevailing Wage
2. (6) Buildings
3. Canadian Solar Tier 1 Modules and Enphase IQ8 Microinverters
4. 2 pole 15-amp breaker per unit.
5. PV meter per unit.
6. Fused disconnect per unit.
7. J-box's on roof.
8. 12-3 NM cable from unit subpanel to PV Meter.
9. 12-3 NM cable from PV meter to Fused disconnect.
10. 12-3 NM cable from fused disconnect to J-box on roof.
11. Ground wire from main electrical room to PV frame on roof.

Exclusions:

1. Permits or Utility Company fees.
2. Payment and performance bond.
3. PV frame.
4. Utility meters.
5. Anything not mentioned in inclusions.

Andy Zavorek

BARRIER SOLAR INC.

2671 S Cherry Ave

Fresno, CA 93706

P.559.233.1680 | F.559.233.1685 |C.559.647.2521

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EXHIBIT D - C Note LP

Cost Spreadsheet for The Benjamin Project - Building A

Prepared by: David Chase 2/22/2023

Description Cost analysis using CEC/NREL categories for PV Project on The Benjamin Building A
Includes CCC solar bid + SED electric bid + roof sealing bid + O&M +PII
* Gross costs only - Federal tax credit not included here

Assumptions Ironridge FRA design most flexible given roof profile
Solar Contractor handles Roof Top Solar, Electrical Contractor installs Building AC from Roof Down

System watts DC:	42240	# modules:	96
San Joaquin County sales tax:	0.0825		
per watt module cost:	0.485		
Module watts:	440		
# 0f mounting feet:	88		
# feet of walk pads:	204		

CEC/NREL Category

System Hardware	Quantity	Description	Unit Cost	Total Cost	Cost/watt	Vendor	Notes
Roof Top Solar: PV Modules							
	96	Canadian Solar CS3W-440MB-AG*	$213	$20,486	$0.485	Kinect Solar /Alchemy Solar	* or 435w, or alt. Tier 1 module OK
Roof Top Solar: Microinverters							
Microinverters	96	Enphase	$138	$13,248	$0.31	Soligent et al	
Enphase Communications Gateway	24	Enphase Envoy	$452	$10,848	$0.26		
Enphase accessory components	1	Cabling, connectors, RS, Gateway, etc	$3,354	$3,354	$0.08	Soligent et al	
Roof Top Solar: Structural BoS							
Racking system	1	Ironridge Flat Roof Attachment Structure	$11,599	$11,599	$0.27	Soligent et al	
Solar Misc BOS	1	Misc Solar Structural BoS	$4,924	$4,924	$0.12	Misc suppliers	
Roof walkpads/penetration materials	1	Walkpads (204') & TPO roof seals (98)	$8,398	$8,398	$0.20	State Roofing Systems	
			Roof Top Solar and Roofing Materials:	$72,857	$1.72		
Electrical BoS: Building A (Electrical subcontractor: SED)							
Materials, Building A	1	Materials	$32,761	$32,761	$0.78	CED	
			System Hardware:	**$105,618**	**$2.50**		
Sales Tax							
Taxes (8.25%):		San Joaquin County	**Sales Taxes:**	**$8,713**	**$0.21**		
Breakdown: Solar materials taxes - $5,318, Roof Penetration materials taxes - $693, Electrical materials taxes - $2,703							
			Total System Hardware Costs:	**$114,331**	**$2.71**		

System Hardware	Quantity	Description	Unit Cost	Total Cost	Cost/watt	Vendor	Notes
Labor							
Solar labor	1	Layout, racking, array wiring, modules, comm, commission		$16,827	$0.40	Chase Construction Co.	Solar install - to electricians j-box
Electrical labor	1	Building AC wiring, prevailing wage rate (inclusive)		$69,359	$1.64	SED Electric	Electrical: roof to meter to subpanel
Roofing labor	1	Build walkpad on TPO roof & seal mounting feet		$8,379	$0.20	State Roofing Systems	Walkpads & foot penetration sealing
			Labor Total:	**$94,565**	**$2.24**		
PII Costs							
Building Department fees	24	Lodi Building Department	$369	$8,856	$0.21	City of Lodi	
LEU Interconnection fees	24	Lodi Electric Utility	$1,207	$28,968	$0.69	City of Lodi	
			PII Total:	**$37,824**	**$0.90**		

CEC/NREL Category

Overhead plus Sales and Marketing						
Solar OH w sales & marketing	1		$7,226	$7,226	$0.17	Chase Construction Co.
Electrical OH w sales & marketing	1		$6,509	$6,509	$0.15	SED Electric
Roofing OH w sales & marketing	1		$5,396	$5,396	$0.13	State Roofing Systems
		Overhead plus Sales Marketing Total:		**$19,131**	**$0.45**	
O&M						
Uses NREL estimate for microinverters	1	$31.12 perKW/year times 25 years	$32,863	**$32,863**	**$0.78**	per NREL 2022 Tech report TP-7A40-83586 p 53
* EnPhase only warrants microinverter, no coverage for labor to replace						
Profit						
Solar profit	1		$8,250	$8,250	$0.20	
Buidling Electrical profit	1		$12,711	$12,711	$0.30	
Roofing profit	1		$4,052	$4,052	$0.10	
		Profit Total:		**$25,013**	**$0.59**	

Summary	Subtotals	per Watt	NREL 2022 per Watt
System Hardware	$105,618	$2.50	1.59
Sales Taxes	$8,713	$0.21	0.08
Labor	$94,565	$2.24	0.16
PII Costs	$37,824	$0.90	0.21
Overhead + Sales & Marketing	$19,131	$0.45	0.66
O&M plus inverter	$32,863	$0.78	0.78
Profit	$25,013	$0.59	0.34
Total Cost for Building A:	**$323,727**	**$7.66**	**$3.82**

EXHIBIT D - C Note LP

Cost Spreadsheet for The Benjamin Project - Building B

Prepared by: David Chase 2/22/2023 **Rev 1.4**

Description Cost analysis using CEC/NREL categories for PV Project on The Benjamin Building B
Includes CCC solar bid + SED electric bid + roof sealing bid + O&M +PII
* Gross costs only - Federal tax credits not included here

Assumptions Ironridge FRA design most flexible given roof profile
Solar Contractor handles Roof Top Solar, Electrical Contractor installs Building AC from Roof Down

System watts DC:	36080	# modules:	82
San Joaquin County sales tax:	0.0825		
per watt module cost:	0.485		
Module watts:	440		
# of mounting feet:	72		
# feet of walk pads:	180		

CEC/NREL Category

System Hardware	Quantity	Description	Unit Cost	Total Cost	Cost/watt	Vendor	Notes
Roof Top Solar: PV Modules							
	82	Canadian Solar CS3W-440MB-AG*	$213	$17,499	$0.485	Kinect Solar /Alchemy Solar	* or 435w, or alt. Tier 1 module OK
Roof Top Solar: Microinverters							
Microinverters	82	Enphase	$138	$11,316	$0.31	Soligent et al	
Enphase Communications Gateway	18	Enphase Envoy	$452	$8,136	$0.23		
Enphase accessory components	1	Cabling, connectors, RS, Gateway, etc	$3,074	$3,074	$0.09	Soligent et al	
Roof Top Solar: Structural BoS							
Racking system	1	Ironridge Flat Roof Attachment Structure	$10,495	$10,495	$0.29	Soligent et al	
Solar Misc BOS	1	Misc Solar Structural BoS	$4,309	$4,309	$0.12	Misc suppliers	
Roof walkpads/penetration materials	1	Walkpads (168') & TPO roof seals (98)	$7,215	$7,215	$0.20	State Roofing Systems	
			Roof Top Solar and Roofing Materials:	$62,044	$1.72		
Electrical BoS: Building B (Electrical subcontractor: SED)							
Materials, Building B	1	Materials	$24,154	$24,154	$0.67	CED	
			System Hardware:	**$86,198**	**$2.39**		
Sales Tax							
Taxes (8.25%):		San Joaquin County	**Sales Taxes:**	**$7,111**	**$0.20**		
Breakdown: Solar materials taxes - $4523, Roof Penetration materials taxes - $595, Electrical materials taxes - $1993							
			Total System Hardware Costs:	**$93,309**	**$2.59**		

System Hardware	Quantity	Description	Unit Cost	Total Cost	Cost/watt	Vendor	Notes
Labor							
Solar labor	1	Layout, racking, array wiring, modules, comm, commission		$15,110	$0.42	Chase Construction Co.	Solar install - to electricians j-box
Electrical labor	1	Building AC wiring, prevailing wage rate (inclusive)		$51,138	$1.42	SED Electric	Electrical: roof to meter to subpanel
Roofing labor	1	Build walkpad on TPO roof & seal mounting feet		$7,199	$0.20	State Roofing Systems	Walkpads & foot penetration sealing
			Labor Total:	**$73,447**	**$2.04**		
PII Costs							
Building Department fees	18	Lodi Building Department	$369	$6,642	$0.18	City of Lodi	
LEU Interconnection fees	18	Lodi Electric Utility	$1,207	$21,726	$0.60	City of Lodi	
			PII Total:	**$28,368**	**$0.79**		

CEC/NREL Category

Overhead plus Sales and Marketing						
Solar OH	1		$6,316	$6,316	$0.18	Chase Construction Co.
Electrical OH	1		$4,799	$4,799	$0.13	SED Electric
Roofing OH	1		$4,636	$4,636	$0.13	State Roofing Systems
		Overhead plus Sales Marketing Total:		**$15,751**	**$0.44**	
O&M						
Uses NREL estimate for microinverters	1	$31.12 perKW/year times 25 years	$28,070	**$28,070**	**$0.78**	per NREL 2022 Tech report TP-7A40-83586 p 53
* EnPhase only warrants microinverter, no coverage for labor to replace						
Profit						
Solar profit	1		$7,191	$7,191	$0.20	
Buidling Electrical profit	1		$9,372	$9,372	$0.26	
Roofing profit	1		$3,481	$3,481	$0.10	
		Profit Total:		**$20,044**	**$0.56**	

Summary	Subtotals	per Watt	NREL 2022 per Watt
System Hardware	$86,198	$2.39	1.59
Sales Taxes	$7,111	$0.20	0.08
Labor	$73,447	$2.04	0.16
PII Costs	$28,368	$0.79	0.21
Overhead + Sales & Marketing	$15,751	$0.44	0.66
O&M plus inverter	$28,070	$0.78	0.78
Profit	$20,044	$0.56	0.34
Total Cost for Building B:	**$258,989**	**$7.18**	**$3.82**

EXHIBIT D - C Note LP

Cost Spreadsheet for The Benjamin Project - Building C

Prepared by: David Chase 2/22/2023 **Rev 1.4**

Description Cost analysis using CEC/NREL categories for PV Project on The Benjamin Building C
Includes CCC solar bid + SED electric bid + roof sealing bid + O&M +PII
* Gross costs only - Federal tax credits not included here

Assumptions Ironridge FRA design most flexible given roof profile
Solar Contractor handles Roof Top Solar, Electrical Contractor installs Building AC from Roof Down

System watts DC:	26400	# modules:	60
San Joaquin County sales tax:	0.0825		
per watt module cost:	0.485		
Module watts:	440		
# of mounting feet:	56		
# feet of walk pads:	140		

CEC/NREL Category

System Hardware	Quantity	Description	Unit Cost	Total Cost	Cost/watt	Vendor	Notes
Roof Top Solar: PV Modules							
	60	Canadian Solar CS3W-440MB-AG*	$213	$12,804	$0.485	Kinect Solar /Alchemy Solar	* or 435w, or alt. Tier 1 module OK
Roof Top Solar: Microinverters							
Microinverters	60	Enphase	$138	$8,280	$0.31	Soligent et al	
Enphase Communications Gateway	12	Enphase Envoy	$452	$5,424	$0.21		
Enphase accessory components	1	Cabling, connectors, RS, Gateway, etc	$2,634	$2,634	$0.10	Soligent et al	
Roof Top Solar: Structural BoS							
Racking system	1	Ironridge Flat Roof Attachment Structure	$7,803	$7,803	$0.30	Soligent et al	
Solar Misc BOS	1	Misc Solar Structural BoS	$3,248	$3,248	$0.12	Misc suppliers	
Roof walkpads/penetration materials	1	Walkpads (140') & TPO roof seals (66)	$5,709	$5,709	$0.22	State Roofing Systems	
			Roof Top Solar and Roofing Materials:	$45,902	$1.74		
Electrical BoS: Building C (Electrical subcontractor: SED)							
Materials, Building C	1	Materials	$16,057	$16,057	$0.61	CED	
			System Hardware:	**$61,959**	**$2.35**		
Sales Tax							
Taxes (8.25%):		San Joaquin County	**Sales Taxes:**	**$5,112**	**$0.19**		
Breakdown: Solar materials taxes - $3316, Roof Penetration materials taxes - $471, Electrical materials taxes - $1325							
			Total System Hardware Costs:	**$67,071**	**$2.54**		

System Hardware	Quantity	Description	Unit Cost	Total Cost	Cost/watt	Vendor	Notes
Labor							
Solar labor	1	Layout, racking, array wiring, modules, comm, commission		$11,477	$0.43	Chase Construction Co.	Solar install - to electricians j-box
Electrical labor	1	Building AC wiring, prevailing wage rate (inclusive)		$33,996	$1.29	SED Electric	Electrical: roof to meter to subpanel
Roofing labor	1	Build walkpad on TPO roof & seal mounting feet		$5,696	$0.22	State Roofing Systems	Walkpads & foot penetration sealing
			Labor Total:	**$51,169**	**$1.94**		
PII Costs							
Building Department fees	12	Lodi Building Department	$369	$4,428	$0.17	City of Lodi	
LEU Interconnection fees	12	Lodi Electric Utility	$1,207	$14,484	$0.55	City of Lodi	
			PII Total:	**$18,912**	**$0.72**		

CEC/NREL Category

Overhead plus Sales and Marketing						
Solar OH	1		$4,717	$4,717	$0.18	Chase Construction Co.
Electrical OH	1		$3,190	$3,190	$0.12	SED Electric
Roofing OH	1		$3,668	$3,668	$0.14	State Roofing Systems
		Overhead plus Sales Marketing Total:		**$11,575**	**$0.44**	
O&M						
Uses NREL estimate for microinverters	1	$31.12 perKW/year times 25 years	$20,539	**$20,539**	**$0.78**	per NREL 2022 Tech report TP-7A40-83586 p 53
* EnPhase only warrants microinverter, no coverage for labor to replace						
Profit						
Solar profit	1		$5,357	$5,357	$0.20	
Buidling Electrical profit	1		$6,231	$6,231	$0.24	
Roofing profit	1		$2,754	$2,754	$0.10	
		Profit Total:		**$14,342**	**$0.54**	

Summary	Subtotals	per Watt	NREL 2022 per Watt
System Hardware	$61,959	$2.35	1.59
Sales Taxes	$5,112	$0.19	0.08
Labor	$51,169	$1.94	0.16
PII Costs	$18,912	$0.72	0.21
Overhead + Sales & Marketing	$11,575	$0.44	0.66
O&M plus inverter	$20,539	$0.78	0.78
Profit	$14,342	$0.54	0.34
Total Cost for Building C:	**$183,609**	**$6.95**	**$3.82**

EXHIBIT E - C Note LP

Cost Spreadsheet for the Benjamin project single unit analysis - Unit 213, Building A

System watts DC: 1760

Prepared by: David Chase 3/26/2023 Rev 1.17

San Joaquin County sales tax: 0.0825

Description Cost analysis using CEC/NREL categories for PV installation on one Benjamin project apartment - Bldg A, unit 213

Purpose Establish for the cost of solar on just one of the Benjamin project's apartments

This analysis highlights some of the hidden costs in installing solar on a multi-residential, flat roof, multi-residential project versus a typical single family home

Assumptions Based on center apartment in the two Building A's -Unit 213 (Building A's have 24 units each, which account for 48 of the 108 units in the Benjamin project)

CEC/NREL Category

System Hardware	Quantity	Description	Unit Cost	Total Cost	Cost/watt	Vendor	Notes
PV Modules							
	4	Canadian Solar CS3W-440MB-AG*	$224	**$896**	**$0.51**	Kinect Solar	* or other Tier 1 module manufacturer
Microinverters							
	4	Enphase	$148	**$592**	**$0.34**	Soligent	
Structural BoS							
Racking system	1	Ironridge Flat Roof Attachment Structure	$672	**$672**	**$0.38**	Soligent et al	Includes S.S. mounting screws
Roof Work	1	Walkpads & TPO roof penetration seals	$994	**$994**	**$0.56**	Sub: State Roofing Systems (see their quote & calcs)	
Electrical BoS (Solar)							
Enphase cabling (ft)	32	Proprietary AC cabling system	$2	$64	$0.04	Soligent	
Enphase misc	1	Mounting, connectors, clips	$20	$20	$0.01	Soligent	
Enphase Shutdown	1	Rapid Shutdown in PV room	$90	$90	$0.05	Soligent	
Enphase IQ Envoy gateway	1	Enphase interface to router/internet	$490	$490	$0.28	Soligent	
Safety labels	1	Ceramic & vinyl solar safety labels	$160	$160	$0.09	Misc suppliers	
Misc BOS	1	Misc expendable supplies	$40	$40	$0.02	Misc suppliers	
			Solar Electrical BoS Subtotal:	$864	$0.49		
Electrical BoS (Building)							*Includes procurement & acquisition costs*
2 pole 15A breaker	1	GE THQP215	$31	$31	$0.02	CED	breaker for apartment subpanel
PV meter	1	Schneider UH7213C	$758	$758	$0.43	CED	PV Meter
Fused disconnect	1	Eaton DG221NGB	$126	$126	$0.07	CED	PV Disconnect
Junction box	1	Hoffman A12R126	$143	$143	$0.08	CED	Rooftop junction box
12/3 NMB romex	300	Southwire 123NMBG	$0.87	$261	$0.15	CED	300'
#8 ground wire	150	Southwire 8THHN	$0.66	$99	$0.06	CED	Grounds racking on roof
30A fuse	2	Littlefuse FLNR030	$17	$34	$0.02	CED	Fuse for PV Disconnect
			Building Electrical BoS Subtotal:	$1,451	$0.82		
			Solar BoS + Building Electrical BoS subtotal:	**$2,315**	**$1.32**		
Taxes (8.25%):		San Joaquin County	Taxes:	**$451**	**$0.26**		Error in formula had reduced taxes slightly
Supply Chain Costs				$0	$0.00		
			Total System Hardware Costs:	**$5,920**	**$3.36**		

CEC/NREL Category

System Hardware	Quantity	Description	Unit Cost	Total Cost	Cost/watt	Vendor	Notes
Labor							
Solar labor				$1,189	$0.68	Chase Construction Co.	Solar install - roof to electricians j-box
Electrical labor				$3,072	$1.75	SED Electric	Electrical: roof to meter to subpanel
Roofing labor	1	Build walkpad on TPO roof & seal mounting feet		$910	$0.52	State Roofing Systems	Service walkpads & foot penetration sealing
			Labor Total:	**$5,171**	**$2.94**		
PII Costs							
Building Department fees	1	Lodi Building Department	$336	$336	$0.19	City of Lodi	
LEU Interconnection fees	1	Lodi Electric Utility	$1,207	$1,207	$0.69	City of Lodi	
			PII Total:	**$1,543**	**$0.88**		
Overhead plus Sales and Marketing							
Solar OH	1		$410	$410	$0.23	Chase Construction Co.	
Solar Sales/Marketing	1		$580	$580	$0.33	Chase Construction Co.	
Electrical OH	1		$288	$288	$0.16	SED Electric	
Roofing OH	1		$586	$586	$0.33	State Roofing Systems	
			Overhead plus Sales Marketing Total:	**$1,864**	**$1.06**		
O&M							
Uses NREL estimate for microinverters	1	$31.12 perKW/year times 25 years	$1,369	**$1,369**	**$0.78**	NREL 2022 Tech report TP-7A40-83586	p 53
* EnPhase only warrants microinverter, no coverage for labor to replace							
Profit							
Solar profit	1		$780	$780	$0.44		
Buidling Electrical profit	1		$563	$563	$0.32		
Roofing profit	1		$440	$440	$0.25		
			Profit Total:	**$1,783**	**$1.01**		

Summary	Unit 213	per watt Unit 213	NREL 2022
System Hardware with taxes	$5,920	$3.36	1.59
Labor	$5,171	$2.94	0.16
PII Costs	$1,543	$0.88	0.21
Overhead + Sales & Marketing	$1,864	$1.06	0.66
O&M plus inverter	$1,369	$0.78	0.78
Profit	$1,783	$1.01	0.34
Total:	**$17,650**	**$10.03**	**$3.74**

EXHIBIT F - C Note LP

RESOLUTION NO. 2016-125

A RESOLUTION OF THE LODI CITY COUNCIL MAKING A DETERMINATION THAT NET ENERGY METERING AGGREGATION (NEMA) RESULTS IN A COST SHIFT TO CUSTOMERS WITHOUT ELIGIBLE ON-SITE RENEWABLE GENERATION AND TO PROHIBIT NEMA IN THE LODI ELECTRIC UTILITY SERVICE TERRITORY

==========

WHEREAS, Senate Bill 594 (2012) amended Public Utilities Code Section 2827 allowing certain customers to aggregate the loads from multiple meters and net meter them with an eligible generation facility located on the same or adjacent property; and

WHEREAS, Public Utilities Code Section 2827 states that a local publicly-owned electric utility shall only allow eligible customer generators to aggregate their load if the utility's ratemaking authority determines that allowing eligible customer generators to aggregate their load from multiple meters will not result in an increase in the expected revenue obligations of customers that are not eligible customer generators; and

WHEREAS, calculations show that a cost shift would occur under Net Energy Metering Aggregate (NEMA) thereby resulting in increased revenue obligations of non-eligible customer generators.

NOW, THEREFORE, BE IT RESOLVED that the Lodi City Council hereby makes a determination that Net Energy Metering Aggregation will result in a cost shift to customers without eligible on-site renewable generation; and

BE IT FURTHER RESOLVED that in accordance with the forgoing determination and Public Utilities Code Section 2827, Lodi shall not allow Net Energy Metering Aggregation in the Lodi Electric Utility service territory.

Dated: July 6, 2016

==========

I hereby certify that Resolution No. 2016-125 was passed and adopted by the City Council of the City of Lodi in a regular meeting held July 6, 2016, by the following vote:

AYES: COUNCIL MEMBERS – Johnson, Kuehne, Mounce, Nakanishi, and Mayor Chandler

NOES: COUNCIL MEMBERS – None

ABSENT: COUNCIL MEMBERS – None

ABSTAIN: COUNCIL MEMBERS – None

Jennifer M. Ferraiolo

JENNIFER M. FERRAIOLO
City Clerk

2016-125

Chapter 13.20 ELECTRICAL SERVICE

Article I. Generally

13.20.010 Rules and regulations.

The furnishing of electric utility services to all users in the city shall be subject to official rules and regulations, as established by the electric utility director, and approved by resolution of the city council. A current copy of such rules and regulations shall be retained at City Hall by the electric utility department, and shall be available for public inspection upon request. Such rules and regulations may be modified from time to time, as necessary, in the manner prescribed herein.

(Ord. 1447 § 1, 1989)

13.20.020 Energy theft diversion/field services fee recovery schedule.

A. Purpose. The city council finds and determines that there is and has been a rise in utility theft in the city of Lodi whereby electricity services are being obtained without payment, including but not limited to, shutoff costs, meter tampering, damage to or removal of meter locking devices, energy diversion or theft of electric service, resulting in substantial monetary losses to the city's ratepayers in the form of, including but not limited to, loss of revenue, replacement of damaged meters, meter testing fee and other related equipment replacement or repair costs, personnel time in investigating and remedying theft matters, investigative costs, and attorney's fees. The purpose of this section is to establish clear guidelines for the processing and recovery of revenues related to theft as well as costs, fees, and expenditures incurred by the city as a result of utilities theft as described herein.

B. Adoption of Fees. The city council shall from time to time establish by resolution fees to be charged to utility account holders where the city incurs costs as a result of nonpayment, meter tampering, or actual or attempted theft of energy. Costs shall not exceed actual cost. Fees shall be limited to the following:

1. Theft Inspection Fee. Shall be charged upon an inspection that shows that the meter has been tampered with or that the meter has been bypassed.
2. Field Services Field Trip Fee. Shall be charged on accounts that are sealed for nonpayment.
3. Service Cut-At-Pole Fee. Shall be charged on accounts that cannot be turned off at meter box when sealed for nonpayment or on accounts that the meter has been bypassed or tampered with.
4. Meter Set Fee. Shall be charged when a meter must be replaced when the meter has been tampered with or bypassed.
5. Damaged Meter Test Fee. Shall be charged when a meter must be tested after the meter was tampered with or bypassed.
6. Meter Ring Fee. Shall be charged when meter ring must be replaced after the meter was tampered with or bypassed.
7. Padlock Fee. Shall be charged when padlock must be installed or replaced after the meter was tampered with or bypassed.

8. Meter Cover Fee. Shall be charged when meter cover must be replaced after the meter was tampered with or bypassed.

9. Damaged Meter Replacement Fee. Shall be charged when meter is unrepairable and must be replaced after meter was tampered with or bypassed (separate fees for single-phase and/or poly-phase).

10. Nighthawk Collar/Nighthawk Meter Replacement Fee. Shall be charged when Nighthawk Collar and/or Nighthawk meter must be replaced after the meter was tampered with or bypassed.

(Ord. No. 1855, § 1, 12-21-2011)

Article II. Meter Installations

13.20.040 Compliance.

All meter installations shall comply with the minimum requirements of the electric utility service equipment requirements committee (EUSERC), as accepted by the city, and with rules and regulations of the inspecting authority having jurisdiction.

(Ord. 1351 § 1 (part): prior code § 9-30 (part))

13.20.050 Required.

Metering equipment complying with these service rules and regulations shall be required whenever any electrical wiring of the Class I type (defined in the city electrical code) is installed, except when there is existing metering equipment which, in the opinion of the building official, is satisfactory and adequate to register all electric current to be supplied.

(Ord. 1351 § 1 (part), 1985: prior code § 9-30 (part))

13.20.060 Owner as contractor.

When a property owner is permitted to do his own wiring, he will be considered the electrical contractor for the purpose of this article.

(Ord. 1351 § 1 (part), 1985: prior code § 9-30 (part))

13.20.070 Service entrance.

A. The service entrance head or outlet shall be located in accordance with Article 230 of the National Electrical Code as interpreted by the city. The service head should be placed higher than the point of service attachment, if possible, to preclude the possibility of water entering the service conduit or cable and ultimately the meter. The customer's service entrance wires shall extend two feet beyond the service head or outlet and thus be long enough to provide for drip loops and attachment to the service drop.

B. In this article the capacity of the service switch has been used as the basis for determining the size of other related equipment. In those cases where a main service switch is not used, the current-carrying capacity of the service entrance conductors shall be considered as the service switch capacity.

C. Any new service entrance installed in the area described in the downtown underground utility master plan adopted by the city council shall be installed underground. Location and requirements shall meet the approval of the city utility director.

(Prior code § 9-31)

13.20.080 Placement between switch and overload devices.

The metering arrangements required by the utilities department of the city provide for the line current to enter first the meter and then the disconnect and overload protective devices. There shall be one main service disconnecting switch or breaker located at a point adjacent to and outside of the building with the electrical metering device.

(Prior code § 9-32)

13.20.090 Type.

A. Provision shall be made for the installation of a self-contained meter (no instrument transformers) for services with capacity less than two hundred amps.

B. In all other cases, provision shall be made for the installation of instrument transformers and a transformer-type meter. For large installations, the utility department should be consulted to determine if provision is necessary for installation of a varhour meter to measure power factor.

Exception: the four hundred amp, single-phase bolt-in type meter is acceptable only for single-family residential use.

C. Socket-type meters shall be used on all installations.

(Ord. 1351 § 1 (part): prior code § 9-33)

13.20.100 Sockets.

A. The contractor shall provide meter sockets in accordance with EUSERC requirements for the type of service being installed.

(Ord. 1351 § 1 (part), 1985: prior code § 9-34)

13.20.110 Instrument transformer.

A. An instrument transformer installation consists of metering current or potential transformers, or both, mounted in a metal cabinet and a watt-hour meter with its accompanying test facilities. For large loads a varhour meter is required in addition to the watt-hour meter.

B. The utility department will furnish and install the secondary wiring from the instrument transformers to the meter in conduit or raceways furnished and installed by the contractor. Provision shall be made for the installation of meter test blocks or test switches, which will also be furnished by the utility department.

C. The contractor shall furnish and install a metal cabinet for housing the metering instrument transformers in accordance with EUSERC specifications for the type of service being installed.

D. All covers which must be lifted into place should be equipped with two handles or similar lifting devices. All covers shall have a small caution sign on the front reading, "Do not break seals. No fuses inside."

(Ord. 1351 § 1 (part), 1985: prior code § 9-35)

13.20.120 Multiple meter installations.

A. When a building has more than one customer or more than one type of service, it is necessary to use a multiple meter installation. Nonswitchboard multiple-occupancy installations can usually best be arranged by utilizing a meter trough. Standardized meter troughs using ring-type sockets or individual sockets in combination with standardized wire gutters or their equivalent are recommended. Troughs and wire gutters containing unmetered wiring shall always be provided with two studs having one-sixteenth-inch holes for sealing, in addition to the screws normally used to hold the cover in place. Unmetered service wires and metered load wires shall not be run in the same conduit, raceway or wiring gutter.

B. The rules for spacing of multiple meter installations using socket-type meters shall be in accordance with EUSERC requirements.

C. In multiple-occupancy buildings, meters shall be mounted at a common location. Where one or more meters are added to an existing installation, they shall either conform to the existing plan, or the existing meters shall be rearranged to conform to a new plan.

D. Each meter position in multiple meter installations shall be clearly and prominently marked in a permanent manner by the contractor to indicate the particular location supplied by it. Meters will not be installed until the marking is complete. In case of multiple dwellings, each meter switch shall be marked by letter or number to correspond to the apartment it serves.

(Ord. 1351 § 1 (part), 1985: prior code § 9-36)

13.20.130 Location.

A. Electric meter installations shall be located so as to be accessible to any authorized representative of the utility department at all reasonable times for reading, testing and inspection. Outdoor meter locations are preferred.

B. Electric meter installations shall not be located in any of the following places:

1. On any floor higher than the ground floor;
2. In any place where moisture, fumes or dust may interfere with its operation or materially damage the meter;
3. In any elevator or hatchway;
4. In any hazardous location;
5. In any place not in general use;
6. Directly over any stairway, ramp or steps;
7. On any surface subject to excessive vibration, as determined by the utility department;
8. In any doorway;
9. On or recessed in the external surface of any wall or any building that is built within three feet of any property line or on the line of any walk, alley or driveway giving access to commercial or industrial property, except when permitted by the utility department;
10. On any portion of a building which might at a later date be enclosed and thus make the meter inaccessible, such as carports, breezeways, covered porches and similar places;

C. Residential meter installations, when electric utilities are installed in the street, shall be located outdoors and shall be located within six feet of the front corner of the building or structure. No electric meter shall be enclosed by any fence, gate, shrub or any other type of structure or enclosure, and shall be accessible from the front of the building or structure.

(Ord. 1351 § 1 (part), 1985: prior code § 9-37)

13.20.140 Height.

A. Meters shall be located not more than seventy-five inches and not less than sixty-six inches above the ground or standing surface when installed outdoors. When installed outdoors in a cabinet or indoors in a meter room, the minimum height may be reduced to thirty-six inches.

B. In the event special permission is granted to locate a meter adjacent to a walk or driveway, it should be mounted eighty-four inches above such walk or driveway. However, in no event shall a demand meter be mounted higher than seventy-five inches.

(Prior code § 9-38)

13.20.150 Working space.

A level standing and working surface shall be provided in front of each metering installation. A clear and unobstructed working space shall be above this surface. The width of the working space shall be sufficient to permit ready access to the metering equipment and in no case less than three feet. The height of the working space shall be equal to the overall height of the metering installation and in no case less than six feet. The working space shall extend at least three feet from the surface on which the metering equipment is mounted.

(Prior code § 9-39)

13.20.160 Breaking seal—Connection or disconnection.

Under no circumstances shall an electrical contractor, or anyone other than a employee of the utilities department, be allowed to break a seal on the utility's meter or connect or disconnect a meter.

(Prior code § 9-40)

13.20.165 Remote

In the event of injury to a city employee, by attack from an animal on the premises of a customer/resident, it shall be mandatory for the customer/resident to pay for the cost of a remote meter installation which cost may be paid outright or added to the monthly utility bill.

(Ord. 1351 § 1 (part), 1985)

13.20.170 Violation—Unlawful.

It is unlawful for any person, either as owner, architect, contractor, artisan or otherwise, to do or knowingly to cause or permit to be done any electrical wiring as defined in this article in such manner that the same does not conform to all of the provisions of this article.

(Prior code § 9-41)

ARTICLE III. RATES[1]

13.20.175 Applicability.

The sale of electric energy by the city shall be at the rates set forth in this article.

(Ord. No. 1941, § 1, 5-3-2017)

13.20.180 Schedule ECA—Energy cost adjustment.

A. Applicability. This schedule is applicable to all electric customers served by the city of Lodi. Each customer shall pay the applicable rate plus an energy cost adjustment (ECA) for each kilowatt-hour (kWh) delivered to the customer. The adjustment shall be the product of the total kilowatt-hours (kWh) for which the bill is rendered times the ECA amount per kWh.

The purpose of the ECA is to adjust for increases/decreases to the city of Lodi's wholesale energy costs. This adjustment provides a mechanism to recover increased costs for wholesale energy or to lower collections when costs decrease below the base charge level.

B. Rates:

Effective July 6, 2007, the ECA billing factor for any given month shall be calculated as follows:

$$ECA = \frac{(a) + (b) - (c)(d+f)}{(e)} - (f)$$

Where:

a. Equals the amount the city of Lodi is actually charged by the Northern California Power Agency for the billing month, including adjustments for prior billing periods, less any third party revenue credits.

b. Equals the city of Lodi's estimated costs related to the acquisition of wholesale power, both financial and physical, procured directly by the city for the billing month, including adjustments for prior billing periods.

c. Equals the difference between actual retail energy sales and projected sales levels for the month which is two months prior to the billing month.

d. Equals the ECA billing factor for the month which is two months prior to the billing month.

e. Equals the forecast of projected retail energy sales for the billing month.

f. Equals the baseline energy cost for the city of $0.0831.

The city of Lodi will recalculate the ECA each month, and resulting amount shall be automatically implemented for bills rendered during the following billing month. The ECA shall not be discounted.

[1]Editor's note(s)—Ord. No. 1941, § 1, adopted May 3, 2017, effective July 1, 2017, repealed the former Art. III, §§ 13.20.175—13.20.330, and enacted a new Art. III as set out herein. The former Art. III pertained to similar subject matter. See the Code Comparative Table for complete derivation.

SCHEDULE I-1 FIXED ECA OPTION:

Customers must elect this option prior to the start of the twelve-month cycle (July—June) and must be billed for the entire twelve months under this option. Customers may opt out in the May prior to the next twelve-month billing period.

The city of Lodi will calculate a fixed ECA based on projected sales divided by the budgeted NCPA all resource bill for the upcoming twelve-month period (July—June) minus 8.31 cents. The resulting amount shall be automatically implemented for bills rendered during the eleven billing months beginning in July and ending in May. The June billing shall include a true-up for the actual ECA billed in the same eleven-month period and the actual ECA for the month of June.

(Ord. No. 1941, § 1, 5-3-2017)

13.20.185 Schedule CSS—California Solar Initiative Surcharge.

A. Applicability. This schedule is applicable to all electric customers served by the city of Lodi. Each customer shall pay the applicable rate(s) plus the California Solar Initiative Surcharge (CSS) for each kilowatt-hour (kWh) delivered to the customer.

The CSS shall fund incentives for customers participating in the Lodi Solar Rebate Pilot Program. California Senate Bill 1 (SB 1) mandates that all electric utilities offer a solar photovoltaic program that provides incentives to support the development and installation of solar systems throughout their given service territory. Based upon SB 1 funding requirements, Lodi Electric Utility shall make available approximately six hundred thousand dollars annually between the years 2008—2017.

B. Rates. Effective on all bills rendered on or after January 1, 2008 until December 31, 2017, a surcharge per kilowatt-hour (kWh) will be applied to all kWh sold. The CSS shall be applied to all kWh sold and will be non-discounted.

The surcharge amount of $0.00125 will be applied to all kWh consumed by each customer in all rate classes.

All funds collected under this surcharge will be placed in an account solely for the purpose of implementing the Lodi Solar Rebate Pilot Program.

(Ord. No. 1941, § 1, 5-3-2017)

13.20.190 Schedule EA—Residential service.

A. Applicability. This schedule is applicable to single-phase domestic power service in single-family and multi-family dwellings separately metered by the city including those on discontinued all electric rate schedule, EE.

B. Rates:

Customer charge$10.20

Energy charge is by tier of kWh usage:

	Tier 1	Tier 2	Tier 3
$/kWh	$0.1428	$0.1581	$0.3366

Summer (May through October) energy tiers:

	Tier 1	Tier 2	Tier 3
Beginning Tier kWh/month	0	482	>962
Ending Tier kWh/month	481	962	

Winter (November through April) energy tiers:

	Tier 1	Tier 2	Tier 3
Beginning Tier kWh/month	0	392	>782
Ending Tier kWh/month	391	782	

C. Energy Cost Adjustment (ECA). An energy cost adjustment shall be included in each bill for service as provided in Section 13.20.180 Schedule ECA—Energy cost adjustment.

D. Billing Cycle Charge (Monthly Bill). The billing cycle charge is the sum of the customer charge, the energy charge and the ECA.

E. Special Conditions:

a. When a business or commercial establishment is conducted in conjunction with a residence and both are measured through one meter, this rate does not apply.

b. This rate does not apply to service used for common area and facilities in multi-family dwellings.

c. Additional discounts are available as described in schedule MR, residential medical discount and schedule ED, residential SHARE program service.

F. Fixed Income Discount. For those customers who are on fixed incomes below forty-five thousand dollars annually and who are over sixty-two years of age, and do not qualify for any other discount, a discount of five percent shall apply to the electric bill. Procedures as to qualification will be established by the electric utility department.

(Ord. No. 1941, § 1, 5-3-2017)

13.20.200 Schedule ED—Residential share program service.

A. Applicability. Applicable to domestic service in single-family and multi-family dwellings separately metered by the city of Lodi where the customer meets all the special conditions of this rate schedule including those on discontinued all electric SHARE rate schedule, EF.

B. Rates. Customers under this schedule will have bills computed using the EA rate schedule less a thirty percent discount.

C. Energy Cost Adjustment (ECA). An energy cost adjustment shall be included in each bill for service as provided in Section 13.20.180 Schedule ECA—Energy cost adjustment.

D. Billing Cycle Charge (Monthly Bill). The billing cycle charge is the sum of the customer charge, the energy charge and the ECA.

E. Special Conditions.

1. When a business or commercial establishment is conducted in conjunction with a residence and both are measured through one meter, this rate does not apply.

2. This rate does not apply to service used for common area and facilities in multi-family dwellings.

3. Single Household Alternative Rate for Energy (SHARE) Eligibility. To be eligible to receive SHARE an applicant must complete an application and qualify based on the income eligibility criteria for state of California Low Income Home Energy Assistance Program.

4. Completed applications must be submitted to the city of Lodi finance department. The city of Lodi finance department shall certify the eligibility of all applicants.

5. All applicants will be required to certify income eligibility for the SHARE program. Customers must sign a statement upon application indicating that the city of Lodi may verify the customer's eligibility at any time. If verification established that the customer is ineligible, the customer will be removed from the program and the city of Lodi may render corrective billings.

6. An additional discount is available as described in Schedule MR, residential medical discount.

(Ord. No. 1941, § 1, 5-3-2017)

13.20.210 Schedule EM—Mobilehome park service.

A. Applicability. This schedule is applicable to service supplied to mobile home parks through one meter and sub-metered to all individual mobile home units.

B. Rates:

Customer Charge (Master
Meter Customer)$1.02 per individual mobile home park unit.

Energy charge is by tier of kWh usage:

	Tier 1	Tier 2	Tier 3
$/kWh	$0.1428	$0.1581	$0.3366

Summer (May through October) energy tiers:

	Tier 1	Tier 2	Tier 3
Beginning Tier kWh/month	0	482	>962
Ending Tier kWh/month	481	962	

Winter (November through April) energy tiers:

	Tier 1	Tier 2	Tier 3
Beginning Tier kWh/month	0	392	>782
Ending Tier kWh/month	391	782	

C. Master Meter/Sub-Meter Discount: For each occupied mobile home park unit, the park owner will receive a monthly discount in the amount of three dollars.

D. Energy Cost Adjustment (ECA). An energy cost adjustment shall be included in each bill for service as provided in Section 13.20.180 Schedule ECA—Energy cost adjustment.

E. Billing Cycle Charge (Monthly Bill). The billing cycle charge is the sum of the customer charge (master meter customer), the energy charge, the master meter/sub-meter discount and the ECA.

F. Special Conditions:

1. This rate is available only for mobile home park master metering in service prior to March 31, 1989.
2. It is the responsibility of the master-metered customer to notify the city finance department by the fifth day of each month of any change in the number of occupied mobile home park units wired for service on the first day of that month.
3. Miscellaneous electric loads such as general lighting, laundry rooms, general maintenance, and other similar use incidental to the operation of the premises as a multi-family accommodation will be considered domestic use.
4. For the master-metered customer to qualify for single household alternative rate for energy (SHARE) and/or the residential medical discount, the qualified sub-metered tenants of the master-metered customer must submit the applicable application(s), including the tenant's unit number, to the City of Lodi Finance Department. The City of Lodi Finance Department will notify the master-metered customer in writing of the tenant's certification for these programs.
5. For tenants who are on fixed incomes below forty-five thousand dollars annually and who are over sixty-two years of age, and do not qualify for any other discount, a discount of five percent of the qualifying tenant's electric bill (fixed income discount) shall be provided to the master-metered customer. Procedures as to qualification will be established by the electric utility department.
6. The master-metered customer, not the city of Lodi, is responsible for extending the SHARE, residential medical discount, and fixed income discount to tenants certified to receive them. If verification establishes that the SHARE, residential medical discount, or fixed income discount tenant is ineligible, the tenant will be removed from the master-metered customer's qualified tenants and the city of Lodi may render corrective billings.
7. The master-metered customer shall not bill any sub-metered tenant more than that tenant would be billed if that tenant were an individual customer of the city of Lodi. For a qualifying SHARE tenant, the master-metered customer shall bill the qualifying tenant at the applicable rates equivalent to Schedule ED, residential SHARE program service. For a tenant qualifying for a residential medical discount, the master-metered customer shall the bill the qualifying tenant in accordance with the provisions of Schedule MR, residential medical discount. For tenants qualifying for a fixed income discount, the master-metered customer shall bill the qualifying tenant in accordance with the provisions of paragraph (e) herein.

A tenant not qualified for any of the above discounts shall be billed using the rates and charges provided for in Schedule EM, mobile home park service, except the master meter/sub-meter discount shall not be provided to tenants and the master-metered customer shall not bill the tenant the Schedule EM, mobile home park service customer charge (master meter customer).

8. With the exception of the customer charge provided for in Schedule EA, residential service, the master-meter/sub-meter rate discount provided herein prohibits further recovery by mobile home park owners for the costs of owning, operating and maintaining their electric sub-metered system.
9. Upon request, mobile home park owners must submit copies of their tenant billings to the city of Lodi for auditing to ensure compliance with this rate tariff, provided however that such requests shall not be made more often than semi-annually.

(Ord. No. 1941, § 1, 5-3-2017)

13.20.220 Schedule MR—Residential medical rider.

A. Applicability. Qualifying residential customers on Schedule EA are entitled to a discount of twenty-five percent from the total bill. Qualifying residential customers on Schedule ED are entitled to a discount of five

percent from the total bill. Master-metered customers with qualifying tenant(s) on Schedule EA are entitled to a discount of twenty-five percent per billing cycle (monthly bill) for each qualifying household or mobile home unit. Master-metered customers with qualifying tenant's' on Schedule ED are entitled to a discount of five percent per billing cycle (monthly bill) for each qualifying household or mobile home unit. If a customer or full-time resident in the home or mobile home unit has one or more of the medical conditions listed below, contact the electric utility department to request a city application, "Declaration of Eligibility for Medical Discount." Only one medical discount adjustment per household or mobile home unit is available.

B. Qualifying Conditions. To qualify for the medical discount, the customer will be required to submit a completed city application, including the certification of a doctor of medicine or osteopathy licensed to practice in the state of California that a customer or other full time resident in the home is:

a. Dependent on a life-support device used in the home.

b. Paraplegic, hemiplegic, or quadriplegic person having special air-conditioning needs.

c. A multiple-sclerosis patient with special heating or air-conditioning needs.

d. Medical conditions other than multiple sclerosis, paraplegia, hemiplegia, or quadriplegia may qualify customers for medical quantities for electric heating or air conditioning. Any such conditions will be reviewed on an individual basis.

C. Life Support Devices:

A life support device is any medical device necessary to sustain life or relied upon for mobility. To qualify under this schedule, the device must be used in the home and must run on electricity supplied by the city of Lodi.

The term "life support device" includes, but is not limited to respirators, iron lungs, hemodialysis machines, suction machines, electric nerve stimulators, pressure pads and pumps, aerosol tents, electrostatic and ultrasonic nebulizers, compressors, IPPB machines and motorized wheelchairs.

D. Heating and Air Conditioning. Special heating and/or air-conditioning needs will qualify for a medical discount only if the main source of energy for heating or air conditioning is electricity supplied by the city of Lodi.

E. Medical Discount for Mobile Home Park Service Customers:

Residential tenants of mobile home park service customers can also qualify for medical discount. If one or more of the customer's tenant(s) have a medical condition that qualifies under the conditions listed above, contact the electric utility department to apply.

Any medical discount must be passed on to the qualifying tenant(s) when tenants are billed for the electricity they use.

(Ord. No. 1941, § 1, 5-3-2017)

13.20.225 Schedule NEM—Net energy metering rider.

A. Purpose. The purpose of this rider is to establish rates, terms, and conditions for providing net metering services to customers generating electricity using solar and wind facilities of one MW or less in size. This rider complies with California State legislation requiring every electric utility in the state, including municipally-owned utilities, to develop a standard contract or tariff providing for net energy metering, as defined below.

B. Applicability. This schedule is applicable to service for customers where a part or all of the electrical requirements of the customer can be supplied from a solar or wind power production source owned and operated by the customer (customer-generated). Availability of this schedule to eligible customer-generators will be on a first-come, first-served basis and will be available until such time the total rated generating

capacity used by eligible customer-generators equals five percent of the city of Lodi aggregate customer annual peak demand.

The solar or wind generation source must: 1) have a capacity of one MW or less, 2) be located on the customer-generator's premises, 3) be connected for parallel operation with Lodi's distribution facilities, and 4) be intended for the sole purpose of offsetting a part or all of the customer-generator's own electrical requirements. In no case shall the power or energy generated by the customer-owned solar or wind source be available for resale, except as specified under this rider.

Additional terms and conditions for service, including terms of interconnection and parallel operation, are specified in a customer-specific Electrical Interconnection and Net Energy Metering Payment Agreement.

C. Rates. Charges for electricity supplied by the city will be based on metered usage in accordance with special conditions (D)(3) and (5) below. Rates charged under this schedule will be in accordance with the eligible customer-generator's otherwise applicable rate schedule. Public benefit charges and monthly customer charges shall not be by-passable.

D. Special Conditions.

1. Other Agreements. A signed electrical interconnection and net metering payment agreement between the customer-generator and the city is required for service under this schedule.

2. Metering Equipment. Net energy metering shall be accomplished using a single meter capable of registering the flow of electricity in two directions. If customer's existing electrical meter is not capable of measuring the flow of electricity in two directions, the customer-generator shall be responsible for all expenses involved in purchasing and installing a meter that is capable of measuring electricity in both directions.

Co-energy metering customers transferred to net metering pursuant to Section 13.20.227 of this Code, may remain on the dual meter system. Net energy metering customers, at their election may opt for the dual meter system.

3. Net Energy Metering and Billing. Net energy is defined as measuring the difference between the electricity supplied by the city through the electric grid to the eligible customer-generator and electricity generated by an eligible customer-generator and fed back into the electric grid over a twelve-month period.

In the event that the electricity supplied by the city during the twelve-month period exceeds the electricity generated by the eligible customer-generator during the same period, the eligible customer is a net electricity consumer and the city shall bill the customer for the net consumption during the twelve-month period based on the retail price per kilowatt-hour for eligible customer-generator's rate class over the same period.

The city shall provide the customer-generator with net electricity consumption information on each regular bill. That information shall include the current amount owed to the city for the net electricity consumed. Customer-generator may exercise the option to pay monthly for the net energy consumed, but in any event shall be responsible for any payments due at the end of each twelve-month period.

4. Attributes. Any capacity attributes or environmental attributes associated with the renewable energy produced by the customer-generator at sites subject to this schedule shall belong to the city with the sole exception of renewable energy credits for solar and wind generation up to the amount of on-site consumption. Capacity attributes include, but are not limited to, system resource adequacy capacity and local resource adequacy capacity, if any. Environmental attributes include, but are not limited to, renewable portfolio standard recognition, renewable energy credits, greenhouse gas credits, and emission reduction credits, if any.

5. Excess Energy. Net energy metering will be administered on an annualized basis, beginning with the month of interconnection of the customer's generating system with the city's electrical system. Electric solar and wind generation production may result in a dollar credit carrying forward to the next billing period. If a credit accumulation results in a net customer-owned generation credit at the end of the annualized year, unused dollar credits will be set to zero and not be carried into the new annualized year unless the customer-generator affirmatively elects to be paid for such excess. If the customer-generator so elects, the city shall either pay the customer-generator or credit the customer generator's account for such excess at the baseline energy cost rate specified in Schedule ECA plus the energy cost adjustment rate averaged for the billing periods with excess generation.

6. Rules and Regulations. Other conditions specified in the city of Lodi electric utility department's rules, regulations and engineering standards shall apply to this electric rate schedule.

(Ord. No. 1941, § 1, 5-3-2017)

13.20.227 Conversion of prior schedule CEM—Co-energy metering rider.

A. On the effective date of this [Ordinance No. 1941], customer generators on the city's prior schedule CEM co-metering rider will be converted to the city's schedule NEM-net energy metering rider. In calendar year 2011, the annual net energy bill as provided in Subsection 13.20.225(D)(3) of this Code, shall be calculated retroactive to January 1, 2011, and the annual excess energy credit or payment (if any) shall be calculated retroactive to January 1, 2011.

(Ord. No. 1941, § 1, 5-3-2017)

13.20.230 Schedule EL—Outdoor dusk-to-dawn lighting.

A. Applicability. This schedule is applicable to city-owned and maintained outdoor overhead area lighting service. Dusk-to-dawn lighting may not be used for street lighting purposes.

B. Rates:

For each 6,000 lumen gas
discharge lamp$13.02 per billing cycle

For each 18,000 lumen gas
discharge lamp24.16 per billing cycle

C. Energy Cost Adjustment (ECA). An energy cost adjustment shall be included in each bill for service as provided in Section 13.20.180 Schedule ECA—Energy cost adjustment.

D. Billing Cycle Charge (Monthly Bill):

a. Lamps shall be approximately six thousand or eighteen thousand lumen gas discharge with luminaire and bracket, as specified by the City of Lodi Electric Utility Department, and shall be supported on city-owned poles which are used to carry distribution system circuits for other city purposes and shall be at locations approved by the city of Lodi. Lamps will be controlled from dusk to dawn each night so as to give approximately four thousand three hundred eighty hours of service annually.

b. Upon receipt of notice from a customer of failure of light to operate as scheduled, the City of Lodi Electric Utility Department will, within a reasonable period of time, make the necessary repairs.

c. Relocation of existing outdoor lighting service equipment or the installation of additional facilities required other than mentioned in (a) above shall be at customer's expense prior to starting work.

(Ord. No. 1941, § 1, 5-3-2017)

13.20.231 Schedule LD—Outdoor dusk-to-dawn lighting (LED).

A. Applicability. This schedule is applicable to city-owned and maintained light emitting diode (LED) outdoor overhead area lighting service. LED dusk-to-dawn lighting may not be used for street lighting purposes.

B. Rates:

For each LED lamp up to and including 50 watts:$7.69 per
..... billing cycle

For each LED lamp over 50 watts up to and including 110 watts:$11.14 per
..... billing cycle

For LED outdoor dusk-to-dawn lighting with lamps exceeding one hundred ten watts, the city of Lodi Electric Utility will calculate and supply the monthly billing cycle charge(s) following the method used herein, accounting for actual wattage of the proposed lamp.

For lighting efficiency and energy conservation, all existing customers taking service under Schedule EL—Outdoor dusk-to-dawn lighting will have existing non-LED lamps replaced and will be required to take service under this Schedule LD—Outdoor dusk-to-dawn lighting (LED) effective the first billing cycle following lamp replacement. The city of Lodi will replace non-LED lamps upon the earlier of failure, damage, or end of useful life.

C. The charges above include all applicable surcharges.

D. Billing Cycle Charge (Monthly Bill):

1. Lamps shall be as specified by the city of Lodi Electric Utility, and shall be supported on city-owned poles which are used to carry distribution system circuits for other city purposes and shall be at locations approved by the city of Lodi. Lamps will be controlled from dusk to dawn each night so as to give approximately four thousand three hundred eighty hours of service annually.

2. Upon receipt of notice from a customer of failure of light to operate as scheduled, the city of Lodi Electric Utility will, within a reasonable period, make the necessary repairs.

3. Relocation of existing outdoor lighting service equipment or the installation of added facilities required other than mentioned above shall be at customer's expense prior to starting work.

(Ord. No. 1984, § 1, 10-6-2021)

13.20.235 Schedule ES—City facilities service.

A. Applicability. This schedule is applicable only to those city facilities currently on schedule ES.

B. Rates:

Customer charge$10.20

Energy charge per kWh$0.10890

C. Energy Cost Adjustment (ECA). An energy cost adjustment shall be included in each bill for service as provided in Section 13.20.180 Schedule ECA—Energy cost adjustment.

D. Billing Cycle Charge (Monthly Bill). The billing cycle charge is the sum of the customer charge, the energy charge, and the ECA.

(Ord. No. 1941, § 1, 5-3-2017)

13.20.240 Schedule G1—General service—Group 1 commercial/industrial.

A. Applicability: This schedule is applicable to customers with single-phase or three-phase service, or to a combination thereof, whose energy consumption does not exceed eight thousand kilowatt-hours (kWh) per billing cycle for three consecutive billing cycles. This schedule is not available for service when another commercial/industrial schedule is applicable.

Assignment to Schedule. If, in the judgment of the city, an account is expected to have usage below eight thousand kWh per billing cycle, the city has the option of placing the account immediately on this schedule.

When an account billed on this schedule permanently changes the nature of electrical operations to such an extent that the account would in time qualify for another rate schedule, such billing change will be made as soon as practicable after verification of said changes.

If energy consumption equals or exceeds eight thousand kWh for three consecutive billing cycles, the city will transfer the account to the appropriate rate schedule. If the demand reaches or exceeds four hundred kW for three consecutive billing cycles, the account will be transferred to the appropriate rate schedule.

B. Rates:

Customer charge (per meter per billing cycle):

Single-phase service$ 7.50

Three-phase or combination service11.09

Energy charge ($ per kWh):

Summer (May through October)$0.19261

Winter (November through April)$0.14244

C. Energy Cost Adjustment (ECA). An energy cost adjustment shall be included in each bill for service as provided in Section 13.20.180 Schedule ECA—Energy cost adjustment.

D. Community Benefits Incentive Discount. G1-Non-profit (as defined in Federal Internal Revenue 501(c)(3)) industrial/commercial customers who are currently receiving Federal Community Development Block Grant funds or have received such funds not more than two years before preparation of the current billing cycle charge are eligible for the following discount on energy and demand charges:

July 1, 1996
and after30 percent

It is the customer's responsibility to notify the finance department of this eligibility.

This discount may not be used in conjunction with any other incentive discount.

E. Billing Cycle Charge (Monthly Bill). The billing cycle charge is the sum of the customer charge, the energy charge and the ECA.

(Ord. No. 1941, § 1, 5-3-2017)

13.20.250 Schedule G2—General service—Group 2 commercial/industrial.

A. Applicability: This schedule will be applied to accounts with energy consumption in excess of eight thousand kilowatt-hours (kWh) for three consecutive billing cycles. This schedule is not available for service when another commercial/industrial schedule is applicable.

Billing Demand. The billing demand in any billing cycle will be the maximum average power taken during any metering interval in the period, but not less than the diversified resistance welder load. (The customary metering interval is fifteen minutes; in cases where the use of energy is intermittent or subject to violent fluctuations, a five-minute interval may be used.)

Assignment to Schedule. If, in the judgment of the city, an account is expected to have usage over eight thousand kWh per billing cycle, the city has the option of placing the account immediately on this schedule.

When an account billed on this schedule permanently changes the nature of electrical operations to such an extent that the account would in time qualify for another rate schedule, such billing change will be made as soon as practicable after verification of said changes. It shall be the responsibility of the customer to notify the city of any such changes.

If energy consumption drops below eight thousand kWh and remains there for twelve consecutive billing cycles, the city will transfer the account to the appropriate schedule. If the billing demand reaches or exceeds four thousand kW for three consecutive billing cycles, the account will be transferred to the appropriate rate schedule as soon as practicable.

B. Rates:

Customer charge: (per meter per billing cycle)	$60.38
Demand charge:	
All kW of billing demand, per kW	4.18
Energy charge: (per kWh)	
Summer (May through October)	0.15829
Winter (November through April)	0.12671

Energy cost adjustment (ECA):

An energy cost adjustment shall be included in each bill for service as provided in Section 13.20.180 Schedule ECA—Energy cost adjustment.

C. Voltage Discount. When delivery is made at the same primary distribution voltage as that of the line from which the service is supplied, a four percent discount will be allowed on the sum of the demand charge and the energy charge.

D. Community Benefits Incentive Discount. G2-Non-profit (as defined in Federal Internal Revenue 501(c)(3)) industrial/commercial customers who are currently receiving Federal Community Development Block Grant funds or have received such funds not more than two years before preparation of the current billing cycle charge are eligible for the following discount on energy and demand charges:

July 1, 1996 and after	30%

It is the customer's responsibility to notify the finance department of this eligibility.

This discount may not be used in conjunction with any other incentive discount.

E. Billing Cycle Charge (Monthly Bill). The billing cycle charge is the sum of the customer charge, the demand charge, the energy charge, the ECA and the voltage discount, if applicable.

(Ord. No. 1941, § 1, 5-3-2017)

13.20.260 Schedule G3—General service—Group 3 commercial/industrial.

A. Applicability. This schedule shall be applied to accounts with billing period demands of between four hundred kilowatts (kW) and five hundred kW for three consecutive billing cycles. This schedule is not available for service when another commercial/industrial schedule is applicable.

Demand: The billing period and peak period demands will be the maximum average power taken during any fifteen-minute interval in the billing period and peak period, respectively, but not less than the diversified resistance welder load. In cases where the use of energy is intermittent or subject to violent fluctuations, a five-minute interval may be used.

Assignment to Schedule: If, in the judgment of the city, an account is expected to have billing period demand of four hundred kW or more and less than five hundred kW per billing cycle, the city has the option of placing the account immediately on this schedule.

When an account billed on this schedule permanently changes the nature of electrical operations to such an extent that the account would in time qualify for another rate schedule, such billing change will be made as soon as practicable after verification of said changes. It shall be the responsibility of the customer to notify the city of any such changes.

If billing period demand drops below four hundred kW and remains there for twelve consecutive billing cycles, the city will transfer the account to the appropriate rate schedule. If billing period demand reaches or exceeds five hundred kW for three consecutive billing cycles, the account will be transferred to the appropriate rate schedule.

B. Rates:

Customer Charge (per meter per billing cycle)			$137.23	
Service Voltage:	**Secondary (G3-S)**		**Primary (G3-P)**	
Season:	**Summer**	**Winter**	**Summer**	**Winter**
Demand Charges:				
Per kW of peak period demand	$11.70	—	$ 10.98	—
Per kW of billing period demand	$ 4.18	$ 4.18	$ 3.23	$ 3.23
Energy Charges:				
Peak Period (per kWh)	$0.17228	—	$0.16606	—
Partial peak period (per kWh)	$0.13799	$0.12504	$0.13348	$0.12118
Off peak period (per kWh)	$0.11853	$0.11412	$0.11499	$0.11079

C. Energy Cost Adjustment (ECA). An energy cost adjustment shall be included in each bill for service as provided in Section 13.20.180 Schedule ECA - Energy Cost Adjustment.

D. Types of Charges. The billing cycle charge for service is the sum of the customer charge, the demand charges, the energy charges, the ECA and the power factor adjustment:

1. Customer Charge: The customer charge is a flat monthly fee.

2. Demand Charges: This schedule has two demand charges: A peak period demand charge and a billing period demand charge. The peak period demand charge per kW applies to the maximum average power taken during any metering interval during the billing cycle's peak hours. The billing period demand charge per kW applies to the maximum average power taken during any metering interval at any time during the billing cycle. The bill will include both demand charges. Time periods are defined below.

3. Energy Charges: This schedule has three energy charges: A peak period energy charge, a partial peak period energy charge, and an off peak period energy charge. The peak period energy charge per kWh applies to the total kWh used during the billing cycle's peak hours. Partial peak period energy charge per kWh applies to the total kWh used during the billing cycle's partial peak hours. Off peak period energy charge per kWh applies to the total kWh used during the billing cycle's off peak hours. The bill will include all of these energy charges. Time periods are defined below.

4. ECA: The ECA is a per kWh charge applied to the total kWh used during the billing cycle.

Monthly charges may be decreased or increased based upon power factor as defined below.

As shown on the rates above, demand and energy charges are based on the voltage at which service is taken. Service voltages are defined below.

E. Definition of Service Voltage. The service voltage classes are:

(a) Primary: Service voltage class for service at twelve thousand volts (nominal).

(b) Secondary: Service voltage class for service at available voltages below twelve thousand volts (nominal).

F. Power Factor Adjustment. Bills will be adjusted for billing cycle average power factor as follows:

1. The total charge (except taxes and customer charge) for any billing cycle as computed on the above rates shall be increased by 0.0006% for each 0.01 percentage point that the average power factor of the customer's load in the billing cycle is less than ninety-seven percent, such average power factor to be computed (to the nearest hundredth of a percent) from the ratio of lagging kilovolt ampere-hours to kilowatt-hours consumed in the billing cycle.

2. Customers with service entrance equipment unable to accommodate the city's reactive metering equipment shall have their billing power factor determined by testing performed by the city.

G. Definition of Time Periods. Times of the year and times of the day are defined as follows:

1. Summer: (May 1 through October 31)

Peak: 3:00 p.m. to 7:00 p.m. Monday through Friday (except holidays).

Partial Peak: 8:30 a.m. to 3:00 p.m. and 7:00 p.m. to 9:30 p.m. Monday through Friday (except holidays).

Off Peak: 9:30 p.m. to 8:30 a.m. Monday through Friday and all day Saturday, Sunday and holidays.

2. Winter: (November 1 through April 30)

Partial Peak: 8:30 a.m. to 9:30 p.m. Monday through Friday (except holidays).

Off Peak: 9:30 p.m. to 8:30 a.m. Monday through Friday and all day Saturday, Sunday and holidays.

3. Holidays:

"Holidays," for the purpose of this rate schedule, are New Year's Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Veterans' Day, Thanksgiving Day, the day after Thanksgiving Day, and Christmas Day. The dates will be based on those days on which the holidays are legally observed.

(Ord. No. 1941, § 1, 5-3-2017; Ord. No. 1950, § 1, 3-21-2018)

13.20.270 Schedule G4—General service—Group 4 commercial/industrial.

A. Applicability. This schedule shall be applied to accounts with billing period demands of between five hundred kilowatts (kW) and one thousand kW for three consecutive billing cycles. This schedule is not available for service when another commercial/industrial schedule is applicable.

Demand: The billing period and peak period demands will be the maximum average power taken during any fifteen-minute interval in the billing period and peak period, respectively, but not less than the diversified resistance welder load. In cases where the use of energy is intermittent or subject to violent fluctuations, a five-minute interval may be used.

Assignment to Schedule: If, in the judgment of the city, an account is expected to have billing period demand between five hundred kW and one thousand kW per billing cycle, the city has the option of placing the account immediately on this schedule.

When an account billed on this schedule permanently changes the nature of electrical operations to such an extent that the account would in time qualify for another rate schedule, such billing change will be made as soon as practicable after verification of said changes. It shall be the responsibility of the customer to notify the city of any such changes.

If billing period demand drops below five hundred kW and remains there for twelve consecutive billing cycles, the city will transfer the account to the appropriate rate schedule. If billing period demand reaches or exceeds one thousand kW for three consecutive billing cycles, the account will be transferred to the appropriate rate schedule.

B. Rates:

Customer Charge (per meter per billing cycle)			$137.23	
Service Voltage:	**Secondary (G4-S)**		**Primary (G4-P)**	
Season:	**Summer**	**Winter**	**Summer**	**Winter**
Demand Charges:				
Per kW of peak period demand	$11.70	—	$ 10.98	—
Per kW of billing period demand	$ 4.18	$ 4.18	$ 3.23	$ 3.23
Energy Charges:				
Peak Period (per kWh)	$0.15904	—	$0.15288	—

Partial peak period (per kWh)	$0.12470	$0.11252	$0.12027	$0.10870
Off peak period (per kWh)	$0.10528	$0.10168	$0.10181	$0.09840

C. Energy Cost Adjustment (ECA). An energy cost adjustment shall be included in each bill for service as provided in Section 13.20.180 Schedule ECA - Energy Cost Adjustment.

D. Types of Charges. The billing cycle charge for service is the sum of the customer charge, the demand charges, the energy charges, the ECA and the power factor adjustment:

1. Customer Charge: The customer charge is a flat monthly fee.

2. Demand Charges: This schedule has two demand charges: A peak period demand charge and a billing period demand charge. The peak period demand charge per kW applies to the maximum average power taken during any metering interval during the billing cycle's peak hours. The billing period demand charge per kW applies to the maximum average power taken during any metering interval at any time during the billing cycle. The bill will include both of these demand charges. Time periods are defined below.

3. Energy Charges: This schedule has three energy charges: A peak period energy charge, a partial peak period energy charge, and an off peak period energy charge. The peak period Energy Charge per kWh applies to the total kWh used during the billing cycle's peak hours. Partial peak period energy charge per kWh applies to the total kWh used during the billing cycle's partial peak hours. Off peak period energy charge per kWh applies to the total kWh used during the billing cycle's off peak hours. The bill will include all of these energy charges. Time periods are defined below.

4. ECA: The ECA is a per kWh charge applied to the total kWh used during the billing cycle.

   Monthly charges may be decreased or increased based upon power factor as defined below.

   As shown on the rates above, demand and energy charges are based on the voltage at which service is taken. Service voltages are defined below.

E. Definition of service voltage. The service voltage classes are:

(a) Primary: Service voltage class for service at twelve thousand volts (nominal).

(b) Secondary: Service voltage class for service at available voltages below twelve thousand volts (nominal).

F. Power Factor Adjustment. Bills will be adjusted for billing cycle average power factors as follows:

1. The total charge (except taxes and customer charge) for any billing cycle as computed on the above rates shall be increased by 0.0006% for each 0.01 percentage point that the average power factor of the customer's load in the billing cycle is less than ninety-seven percent, such average power factor to be computed (to the nearest hundredth of a percent) from the ratio of lagging kilovolt ampere-hours to kilowatt-hours consumed in the billing cycle.

2. Customers with service entrance equipment unable to accommodate the city's reactive metering equipment shall have their billing power factor determined by testing performed by the city.

G. Definition of Time Periods. Times of the year and times of the day are defined as follows:

1. Summer (May 1 through October 31)

Peak: 3:00 p.m. to 7:00 p.m. Monday through Friday (except holidays).

Partial Peak: 8:30 a.m. to 3:00 p.m. and 7:00 p.m. to 9:30 p.m. Monday through Friday (except holidays).

Off Peak: 9:30 p.m. to 8:30 a.m. Monday through Friday and all day Saturday, Sunday and holidays.

2. Winter (November 1 through April 30)

   Partial Peak: 8:30 a.m. to 9:30 p.m. Monday through Friday (except holidays).

   Off Peak: 9:30 p.m. to 8:30 a.m. Monday through Friday and all day Saturday, Sunday and holidays.

3. Holidays:

   "Holidays," for the purpose of this rate schedule, are New Year's Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Veterans Day, Thanksgiving Day, the Day after Thanksgiving Day, and Christmas Day. The dates will be based on those days on which the holidays are legally observed.

(Ord. No. 1941, § 1, 5-3-2017; Ord. No. 1950, § 1, 3-21-2018)

13.20.280 Schedule G5—General service—Group 5 commercial/industrial.

A. Applicability. This schedule shall be applied to accounts with billing period demands of one thousand kilowatts (kW) or more for three consecutive months, unless the customer elects an optional rate schedule the account would otherwise qualify.

Demand: The billing period and peak period demands will be the maximum average power taken during any fifteen-minute interval in the billing period and peak period, respectively, but not less than the diversified resistance welder load. In cases where the use of energy is intermittent or subject to violent fluctuations, a five-minute interval may be used.

Assignment to Schedule: If, in the judgment of the city, an account is expected to have billing period demand of one thousand kW or more per billing cycle, the city has the option of placing the account immediately on this schedule.

When an account billed on this schedule permanently changes the nature of electrical operations to such an extent that the account would in time qualify for another rate schedule, such billing change will be made as soon as practicable after verification of said changes. It shall be the responsibility of the customer to notify the city of any such change.

If billing period demand drops below one thousand kW and remains there for twelve consecutive billing cycles, the city will transfer the account to the appropriate rate schedule.

B. Rates:

Customer Charge (per meter per billing cycle)			$137.23	
Service Voltage:	**Secondary (G5-S)**		**Primary (G5-P)**	
Season:	**Summer**	**Winter**	**Summer**	**Winter**
Demand Charges:				
Per kW of peak period demand	$11.70	—	$10.98	—

Per kW of billing period demand	$ 4.18	$ 4.18	$ 3.23	$ 3.23
Energy Charges:				
Peak Period (per kWh)	$0.14652	—	$0.14070	—
Partial peak period (per kWh)	$0.11225	$0.10022	$0.10814	$0.09671
Off peak period (per kWh)	$0.09497	$0.09189	$0.09173	$0.08880
Economic Stimulus Rate Credit: (per kWh)	$0.00440	$0.00440	$0.00440	$0.00440

C. Energy Cost Adjustment (ECA). An energy cost adjustment shall be included in each bill for service as provided in Section 13.20.180 Schedule ECA - Energy Cost Adjustment.

D. Types of Charges. The billing cycle for service is the sum of the customer charge, the demand charges, the energy charges, the ECA and the power factor adjustment.

1. Customer Charge: The customer charge is a flat monthly fee.

2. Demand Charges: This schedule has two demand charges: A peak period demand charge and a billing period demand charge. The peak period demand charge per kW applies to the maximum average power taken during any metering interval during the billing cycle's peak hours. The billing period demand charge per kW applies to the maximum average power taken during any metering interval at any time during the billing cycle. The bill will include both of these demand charges. Time periods are defined below.

3. Energy Charges: This schedule has three energy charges: A peak period energy charge, a partial peak period energy charge, and an off peak period energy charge. The peak period energy charge per kWh applies to the total kWh used during the billing cycle's peak hours. Partial peak period energy charge per kWh applies to the total kWh used during the billing cycle's partial peak hours. Off peak period energy charge per kWh applies to the total kWh used during the billing cycle's off peak hours. The bill will include all of these energy charges. Time periods are defined below.

4. ECA: The ECA is a per kWh charge applied to the total kWh used during the billing cycle.

   Monthly charges may be decreased or increased based upon power factor as defined below.

   As shown on the rates above, demand and energy charges are based on the voltage at which service is taken. Service voltages are defined below.

E. Definition of service voltage. The service voltage classes are:

(a) Primary: Service voltage class for service at twelve thousand volts (nominal).

(b) Secondary: Service voltage class for service at available voltages below twelve thousand volts (nominal).

F. Power Factor Adjustments. Bills will be adjusted for billing cycle average power factor as follows:

1. The total charge (except taxes and customer charge) for any billing cycle as computed on the above rates shall be increased by 0.0006% for each 0.01 percentage point that the average power factor of the customer's load in the billing cycle is less than ninety-seven percent, such average power factor to be computed (to the nearest hundredth of a percent) from the ratio of lagging kilovolt ampere-hours to kilowatt-hours consumed in the billing cycle.

2. Customers with service entrance equipment unable to accommodate the city's reactive metering equipment shall have their billing power factor determined by testing performed by the city.

G. Definition of Time Periods. Times of the year and times of the day are defined as follows:

1. Summer: (May 1 through October 31)

   Peak: 3:00 p.m. to 7:00 p.m. Monday through Friday (except holidays).

   Partial Peak: 8:30 a.m. to 3:00 p.m. and 7:00 p.m. to 9:30 p.m. Monday through Friday (except holidays).

   Off Peak: 9:30 p.m. to 8:30 a.m. Monday through Friday and all day Saturday, Sunday and holidays.

2. Winter: (November 1 through April 30)

   Partial Peak: 8:30 a.m. to 9:30 p.m. Monday through Friday (except holidays).

   Off Peak: 9:30 p.m. to 8:30 a.m. Monday through Friday and all day Saturday, Sunday and holidays.

3. Holidays:

   "Holidays," for the purpose of this rate schedule, are New Year's Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Veterans' Day, Thanksgiving Day, the day after Thanksgiving Day, and Christmas Day. The dates will be based on those days on which the holidays are legally observed.

(Ord. No. 1941, § 1, 5-3-2017; Ord. No. 1950, § 1, 3-21-2018)

13.20.290 Schedule EP—Energy purchase.

APPLICABILITY:

This schedule is applicable to qualifying customer-owned and operated generating alternating current (AC) facilities operating in parallel with the City's electric distribution system. The customer-generator must currently be, or will be, served by the city of Lodi Electric Utility (LEU).

Generating facilities must be rated 1 MW $_{CEC\text{-}AC}$ or less, located on the customer-generator's premises, and intended for the purpose of offsetting a part or all of the customer-generator's own electrical requirements. In no case shall the energy, capacity, and/or other attributes be available for resale by the customer.

This schedule is available only to customers who do not otherwise qualify for compensation for customer-owned generation under another LEU rate schedule or contract.

RATES:

Energy Charges: Customer will be billed for all usage at the applicable service rate in effect when the electric service was rendered in accordance with the eligible customer-generator's otherwise applicable rate schedule based on metered usage for energy delivered and received after the customer-generator serves its own instantaneous load.

Energy Purchase Credit: Credit will be provided to the customer for all metered customer-generated energy that exceeds the energy consumed, and is therefore exported to LEU's distribution system, at a rate equal to the avoided cost to LEU; the specific value of which will be determined and updated annually by LEU based

on the following components: avoided energy and transmission costs, environmental attribute value (if applicable, based on generation type), avoided system loss, and avoided capacity value.

Energy purchase credit values will be published each year by June 1 on LEU's website and provided to customers receiving service under this schedule.

The above charges and credits will be determined in accordance with LEU's metering specifications. LEU reserves the right to install additional metering equipment for statistical and/or billing purposes.

BILLING:

For each billing month, the customer shall receive a bill including all applicable energy charges, including, but not limited to, customer charges, energy charges, demand charges, and any surcharges, taxes, and/or discounts in accordance with their otherwise applicable rate schedule. The bill will also include all applicable energy purchase credits which shall be used to offset the energy charges in a given billing month. Any credit(s) remaining at the end of each billing month shall carry forward and be applied to the customer's next monthly electric bill. Any outstanding charges will be due and payable at the end of each billing month. Monthly customer charges, public benefit charges, and all other surcharges shall be non-bypassable.

SPECIAL CONDITIONS:

Other conditions shall apply to this schedule as specified in the city of Lodi Electric Utility Department's Rules and Regulations, as updated from time to time, and engineering standards and specifications (including metering requirements) which are available for review on LEU's website.

Customers will be responsible for any and all metering and interconnection charges as required to provide service under this schedule. Said charges will be determined and updated annually by LEU and be based on the cost(s) associated with providing service under this schedule. A schedule of charges will be available on LEU's website.

Any capacity or environmental attributes associated, now or in the future, with the credited excess energy produced by the customer-generator at sites subject to this schedule shall belong to the city. Capacity attributes include, but are not limited to, system, local, and/or flexible resource adequacy capacity, if any. Environmental attributes include, but are not limited to, renewables portfolio standard eligible resources, renewable energy credits, greenhouse gas credits, and/or emission reduction credits, if any.

LEU reserves the right to require a contract should it determine the customer-owned generator does not otherwise meet the specified applicability requirements to qualify under this schedule or another LEU rate schedule.

Customers currently taking service under schedule NEM shall continue to be billed in accordance with schedule NEM for twenty years from the date of interconnection of their existing customer-owned generation facility, after which time they will be given the option to take service under this schedule EP in order to continue to receive credit for their customer-owned generation.

(Ord. No. 1941, § 1, 5-3-2017; Ord. No. 1944, § 1, 8-2-2017)

13.20.300 Schedule SS—Standby service.

A. Applicability. This schedule is applicable to commercial/industrial customers who would otherwise qualify for Schedule G2, G3, G4, G5, or I1 and who have privately-owned generating facilities with a combined nameplate rating greater than one megawatt on their premises and where the city must stand ready to supply electric service to replace such a facility. This schedule will apply in addition to any other schedule applicable to the customer of record; any multiple generation facilities for one customer of record will be under one contract.

B. Service by Contract. Service under this schedule shall be provided on a contract basis to commercial/industrial customers who have privately- owned generating facilities on their premises. Contracts shall be subject to terms approved by the city council and shall obligate the customer to pay the city for its costs associated with providing standby service for the actual life of the privately-owned generating facilities and for three months following written notice to the City of Lodi Electric Utility of the removal of the privately-owned generating facilities from operation.

(Ord. No. 1941, § 1, 5-3-2017)

13.20.310 Schedule I1—General service—Group 5 commercial/industrial-optional.

A. Applicability. This schedule is an optional rate for accounts who would otherwise qualify for primary service under the G5 rate schedule with billing period demands of one thousand kilowatts (kW) or more for three consecutive months.

Demand: The billing period and peak period demands will be the maximum average power taken during any fifteen-minute period interval in the billing period and peak period, respectively, but not less than the diversified resistance welder load. In cases where the use of energy is intermittent or subject to violent fluctuations, a five-minute interval may be used.

Assignment to Schedule: Assignment to this schedule is at the option of the customer and does not supersede any standby service contracts.

This rate schedule is prospective and not subject to rebate or retroactivity.

When a customer chooses to be assigned to this schedule, the customer elects the city of Lodi (city) to be the sole electric power requirements provider of choice. The customer must give the city three-year written notice before the customer can elect to use another electric power requirements provider.

When a customer has a measurable incremental permanent load increase of two hundred kW or greater, over the highest billing period demand in the previous twelve months the customer will be eligible for a ten percent discount on the incremental demand and energy charges. Such billing change will be made as soon as practicable after verification of said changes and is not subject to rebate or retroactivity. It shall be the responsibility of the customer to notify the city of any such change.

When an account billed on this schedule qualifies for another city bundled rate schedule, the customer may elect to be billed on that other rate schedule. When a customer chooses to be assigned to another bundled rate a three-year written notice is still required before the customer can elect to use another electric power requirements provider.

If the billing period demand drops below one thousand kW and remains there for twelve consecutive billing cycles, the city will transfer the account to the appropriate rate schedule and the customer will be subject to the requirements of the appropriate schedule, rather than Schedule I1.

B. Rates.

Customer Charge (per meter per billing cycle)	$137.23	
Service Voltage:	**Primary (I1-P)**	
Season:	**Summer**	**Winter**
Demand Charges:		
Per kW of peak period demand	$10.98	—
Per kW of billing period demand	$ 3.23	$ 3.23

Energy Charges:		
< 4,000 kW	**Summer**	**Winter**
Peak period (per kWh)	$0.14310	—
Partial peak period (per kWh)	$0.11023	$0.10171
Off peak period (per kWh)	$0.09430	$0.09361
≥ 4,000 kW	**Summer**	**Winter**
Peak period (per kWh)	$0.13646	—
Partial peak period (per kWh)	$0.10359	$0.09507
Off peak period (per kWh)	$0.08766	$0.08697
Economic Stimulus Rate Credit: (per kWh)	$0.01386	$0.01386

C. Energy Cost Adjustment (ECA). An energy cost adjustment shall be included in each bill for service as provided in Section 13.20.180 Schedule ECA - Energy Cost Adjustment.

D. Types of Charges. The billing cycle charge for service is the sum of the customer charge, the demand charges, the energy charges, the ECA and the power factor adjustment:

1. Customer Charge: The customer charge is a flat monthly fee.

2. Demand Charges: This schedule has two demand charges: A peak period demand charge and a billing period demand charge. The peak period demand charge per kW applies to the maximum average power taken during any metering interval during the billing cycle's peak hours. The billing period demand charge per kW applies to the maximum average power taken during any metering interval at any time during the billing cycle. The bill will include both of these demand charges. Time periods are defined below.

3. Energy Charges: This schedule has three energy charges: A peak period energy charge, a partial peak period energy charge, and an off peak period energy charge. The peak period energy charge per kWh applies to the total kWh used during the billing cycle's peak hours. Partial peak period energy charge per kWh applies to the total kWh used during the billing cycle's partial peak hours. Off peak period energy charge per kWh applies to the total kWh used during the billing cycles off peak hours. The bill will include all of these energy charges. Time periods are defined below.

4. ECA: The ECA is a per kWh charge applied to the total kWh used during the billing cycle.

   Monthly charges may be decreased or increased based upon power factor as defined below.

   As shown on the rates above, demand and energy charges are based on the voltage at which service is taken. Service voltage is defined below.

E. Definition of Service Voltage. The service voltage class:

   a. Primary: Service voltage class for service at twelve thousand volts (nominal).

F. Power Factor Adjustments. Bills will be adjusted for billing cycle average power factor as follows:

1. The total charge (except taxes and customer charge) for any billing cycle as computed on the above rates shall be increased by 0.0006% for each 0.01 percentage point that the average power factor of the customer's load in the billing cycle is less than ninety-seven percent, such average power factor to be computed (to the nearest hundredth of a percent) from the ratio of lagging kilovolt ampere-hours to kilowatt-hours consumed in the billing cycle.

2. Customers with service entrance equipment unable to accommodate the city's reactive metering equipment shall have their billing power factor determined by testing performed by the city.

G. Definition of Time Periods. Times of the year and times of the day are defined as follows:

1. Summer: (May 1 through October 31)

Peak: 3:00 p.m. to 7:00 p.m. Monday through Friday (except holidays).

Partial Peak: 8:30 a.m. to 3:00 p.m. and 7:00 p.m. to 9:30 p.m. Monday through Friday (except holidays).

Off Peak: 9:30 p.m. to 8:30 a.m. Monday through Friday and all day Saturday, Sunday and holidays.

2. Winter: (November 1 through April 30)

Partial Peak: 8:30 a.m. to 9:30 p.m. Monday through Friday (except holidays).

Off Peak: 9:30 p.m. to 8:30 a.m. Monday through Friday and all day Saturday, Sunday and holidays.

3. Holidays:

"Holidays," for the purpose of this rate schedule, are New Year's Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Veterans' Day, Thanksgiving Day, the day after Thanksgiving Day, and Christmas Day. The dates will be based on those days on which the holidays are legally observed.

(Ord. No. 1941, § 1, 5-3-2017; Ord. No. 1950, § 1, 3-21-2018)

13.20.315 Schedule EDR—Economic development rates.

Applicability:

A. New Business Rate (NBR) Discount. NBR discount, applicable to any new commercial or industrial customer that locates their operations/business in the city of Lodi and receives electric utility service from the city of Lodi, with the following stipulations: a customer assigned to the G1 electric utility rate shall receive a discount for twelve consecutive months of twenty-five dollars per month; and, customers assigned to the G2, G3, G4, G5, or I1 electric utility rate shall receive a discount for twelve consecutive months of five percent; and this rate discount may not be combined with any other electric discount or rate, including, but not limited to, the NJR discount, and shall only apply to the base rate. Surcharges including, but not limited to, the California Energy Commission fee, public benefits charge, state energy tax, and other assessments or charges after the date of this rate schedule shall not be subject to this discount.

B. New Jobs Rate (NJR) Discount. NJR discount, applicable to any commercial or industrial customer that adds a minimum of one full-time position, and retains that position for at least twelve consecutive months, with the following stipulation; a two percent discount for one to three new positions; four percent discount for four to six new positions; six percent discount for seven to nine positions; eight percent discount for ten to twenty new positions. NJR discount, applicable to any commercial or industrial customer that adds twenty-one to thirty new, full-time positions, and retains those positions for twenty-four consecutive months, an eight percent discount; that adds thirty-one to forty positions and retains those positions for thirty-six consecutive months, an eight percent discount; that adds forty-one to fifty positions and retains those positions for forty-eight months, an eight percent discount; and that adds greater than fifty positions and retains those positions for sixty consecutive months, an eight percent discount. The discount will remain in effect if the number of new positions remain funded for the corresponding time period. The maximum discount available is eight percent; all discounts and time periods the discount remains in effect are contingent on the number of new, full-time employees added at the time of application; all discounts are subject to submission and validation of reports, as specified by the city. This rate discount may not be combined with any other electric discount or rate, including, but not limited to, the NBR discount, and shall

only apply to the base rate. Surcharges including, but not limited to, the California Energy Commission fee, public benefits charge, state energy tax, and other assessments or charges after the date of this rate schedule shall not be subject to this discount.

C. The rate schedules referenced above shall be effective on applicable electric utility billings prepared by the city of Lodi on or after January 1, 2022.

(Ord. No. 1941, § 1, 5-3-2017; Ord. No. 1958, § 1, 10-3-2018; Ord. No. 1989, § 1, 12-1-2021)

13.20.320 Reserved.

13.20.325 Schedule EV—Electric vehicle charging service.

A. Applicability. This schedule is applicable to single-phase electric vehicle charging service in single-family and multi-family dwellings separately metered by the city.

B. Rates:

Customer Charge$3.00

Energy Charge:

EV Charging period (per kWh)	Schedule EA Tier 1 Energy Charge
Non-EV Charging period (per kWh)	Schedule EA Tier 3 Energy Charge

C. Energy Cost Adjustment (ECA). An energy cost adjustment shall be included in each bill for service as provided in Section 13.20.180 Schedule ECA—Energy cost adjustment.

D. Billing Cycle Charge (Monthly Bill). The billing cycle charge is the sum of the customer charge, the energy charge and the ECA.

E. Definition of Time Periods:

Times of the day are defined as follows:

EV Charging period: 8:00 p.m. to 6:00 a.m. Monday through Friday (and all day weekends and holidays).

Non-EV Charging period: 6:00 a.m. to 8:00 p.m. Monday through Friday (excluding weekends and holidays).

(Ord. No. 1941, § 1, 5-3-2017)

13.20.330 Reserved.

Photovoltaic Solar Installation Guidelines Effective July 2022

Have Questions? Contact us at (209) 333-6762

INTRODUCTION

These guidelines have been created to help Lodi Electric Utility (LEU) customers navigate the procedural and permitting requirements for the installation of solar photovoltaic (PV) electric generation equipment of 1 MW or less within the City of Lodi.

When considering installation of a solar PV system, verify both current and anticipated future electric rates with LEU to accurately evaluate your potential savings. Please note that some electric charges on your bill are non-bypassable and are charged regardless of your power generation source.

LEU does not allow Power Purchase Agreements whereby vendors retaining ownership of a system sell power from the solar PV system to an LEU customer within LEU's service territory. Leased systems are allowed whereby the lease structure is set up as a financing mechanism for the system itself with lease payments identified accordingly.

Residential Solar Installations

Lodi Electric Utility – (Pre-approval Required)

All residential solar installations require pre-approval from LEU **prior to** applying for a City of Lodi building permit from the Community Development Department (Building Division).

To obtain pre-approval from LEU, begin by reading over all documents on LEU's website http://www.lodielectric.com/815/Solar. When you are ready to apply, proceed to LEU's online application portal,https://lodipvpermits.powerclerk.com/MvcAccount/Login and follow the instructions to submit your application electronically. LEU will review the system size and other aspects, looking for impacts to the distribution system. You will be updated by email as the review progresses.

Community Development Department-(Buidling Division)

Upon successful pre-approval from LEU, you may proceed to the Building Division at 221 West Pine Street, Lodi, CA 95240, to apply for a permit and inspection in compliance with the Minor Residential Rooftop Photovoltaic (PV) Permit Procedure. You may also contact the the Building Division at (209) 333-6714 with any permitting questions.

Commercial Solar Installations

New commercial customers should first apply for a permit with the City of Lodi's Building Division, in compliance with the Commercial permit application package. Make sure to include LEU's Service and Meter application, Interconnection Agreement, REC agreement, one-line diagram, three-line diagram, site plan, equipment specifications, and proof of warranty. The Building Division will share your submittal with LEU. Depending on your proposed system, a detailed study may be required, to analyze the possible impacts to LEU's distribution system and identify possible mitigations. You will be notified if this is necessary. If you decide to proceed, LEU will undertake this study at the customer's cost. All mitigations identified by the study must be performed ahead of interconnection, with all costs borne by the applicant.

Building Division Contact: (209) 333-6714; 221 West Pine Street, Lodi, CA 95240
LEU Contact: solar@lodi.gov or (209) 333-6762.

System Sizing

PV systems may be sized so that the amount of electricity produced by the system meets, but does not exceed the previous 12 months of electric energy usage at the site of installation. Customers may request their energy usage history from LEU by calling (209) 333-6717. LEU will review the previous 12 months of energy usage at the installation site to determine an average annual energy use for the site. If the customer does not have 12 months of historical usage, LEU reserves the right to use all information available at the time and make a determination as to the maximum allowable size of the PV system.

Since the actual production of a PV system is often substantially less than the nameplate value, system production will be based on the California Solar Initiative Expected Performance Based Buydown (EPBB) Calculator. www.csi-epbb.com/default.aspx. **If the estimated annual kWh production of the system (as indicated on the EPBB results page) exceeds the average annual usage of the home/business, then the application will not proceed.**

Metering and Data Collection

Metering shall be accomplished using one meter to register both energy delivered to the customer and energy received and exported to Lodi's electric distribution system. Proper configuration is referenced in Lodi Engineering Standard 942 0240. Lodi may install, additional metering equipment; LEU's avoided cost will be updated annually.

Electrical Interconnection Requirements

All customers will be required to enter into an Electrical Interconnection Agreement with LEU prior to the system being energized. By signing the agreement, the customer acknowledges that connection and operation of the generating facility is subject to the terms and conditions set forth in the agreement and in City of Lodi's rates, standards, rules, and regulations. The customer is responsible for all current application, permit inspection fees and all costs associated with the interconnection of their system and installation of a solar meter. Modifications to the service entrance must be approved by LEU. All service entrance and disconnects must be Electric Utility Service Equipment Requirements Committee (EUSERC) approved.

System Operation

Upon completion of this process (including approval of final Building Department inspection and installation of LEU's metering equipment) you may request a copy of a "Permit to Operate" notice be emailed address you provided. Requests may be sent to solar@lodi.gov .

Metering and Interconnection Fees

Metering and interconnection fees will be updated annually for each Fiscal Year (July 1 – June 30).

Effective July 1, 2022 – June 30, 2023

Single Phase (60 to 200 Amp):	**$ 707**
Three Phase (200 to 400 Amp):	**$ 1,207**
Three Phase (>400 Amp):	**Actual cost based on time and material**

Historical Fees:

Reference Only: Effective July 1, 2021 – June 30, 2022

Single Phase (60 to 200 Amp):	**$ 710**
Three Phase (200 to 400 Amp):	**$ 1,163**
Three Phase (>400 Amp):	**Actual cost based on time and material**

Reference Only: Effective July 1, 2020 – June 30, 2021

Single Phase (60 to 200 Amp):	**$ 676**
Three Phase (200 to 400 Amp):	**$ 1,126**
Three Phase (>400 Amp):	**Actual cost based on time and material**

Reference Only: Effective July 1, 2019 – June 30, 2020

Single Phase (60 to 200 Amp):	**$ 647**
Three Phase (200 to 400 Amp):	**$ 1050**
Three Phase (>400 Amp):	**Actual cost based on time and material**

Schedule EP – Energy Purchase (Billing and Compensation)

Lodi Electric Utility does not currently offer or allow Net Energy Metering (NEM); this includes aggregate and/or virtual NEM.

Effective September 1, 2017, Lodi residents and businesses installing customer-owned generation facilities such as solar will be subject to the City's new Energy Purchase (EP) Schedule, the details of which can be found in Lodi Municipal Code Section 13.20.290. The customer will not be billed or credited for energy consumed on-site. Energy delivered to the customer will be billed at the applicable retail service rate. For a schedule of retail rates by customer class, visit Lodi Municipal Code Article Chapter 13.20, Article III. Any credit(s) remaining at the end of each billing month shall carry forward and be applied to the customer's next monthly electric bill. Any outstanding charges will be due and payable at the end of each billing month.

Energy exported to the grid will be credited at Lodi's avoided cost.

The avoided cost will be updated annually for each Fiscal Year (July 1 – June 30).

Effective Dates:	**Avoided Cost**
July 1, 2022 – June 30, 2023	**$0.101/kWh**
July 1, 2021 – June 30, 2022	**$0.0784/kWh**
July 1, 2020 – June 30, 2021	**$0.0772/kWh**
July 1, 2019 – June 30, 2020	**$0.0815/kWh**
July 1, 2018 – June 30, 2019	**$0.0687/kWh**
July 1, 2017 – June 30, 2018	**$0.06428/kWh**

Renewable Energy Credits

The customer agrees that the Renewable Energy Credits (RECs) generated by the system belong to LEU in accordance with Schedule EP – Energy Purchase, found in Lodi Municipal Code Section 13.20.290. LEU may use or sell the RECs at their discretion in accordance with all applicable laws, regulations, etc.

Selecting an Installer

Systems must be installed by appropriately licensed contractors in accordance with rules and regulations adopted by the State of California Contractors State Licensing Board (CSLB) and City Building Codes. LEU also recommends that the installer be registered with Go Solar California and meet their pre-screening criteria. LEU cannot provide contractor recommendations, but advises customers to obtain more than one contractor bid, references and contractor licensing status. Customers can search for solar installers, contractors and retailers at www.gosolarcalifornia.ca.gov/.

System Equipment

All PV modules, inverters, and meters must be listed on the California Energy Commission's (CEC) Eligible Equipment List and must be new and not previously placed in service in any other location or for any other application. This list is continuously updated by the CEC. The current list for eligible equipment can be found at: www.gosolarcalifornia.ca.gov/equipment.

Modules: Only PV modules listed at www.gosolarcalifornia.org/equipment/pv_modules.php will be considered eligible. All modules must be certified to UL 1703 by a Nationally Recognized Testing Laboratory (NRTL) to ensure safety and reliability.

Inverters: Only inverters listed at www.gosolarcalifornia.org/equipment/inverters.php will be considered eligible. All inverters must be certified to UL 1741 standards by a NRTL. Inverters must also meet IEEE 1547 interconnection standards to be approved as non-islanding (non-backfeeding) devices that automatically disconnect from the grid upon loss of utility voltage.

Performance Meters: Separate from LEU's metering, all PV systems must be installed with a performance meter or an inverter with a built-in performance meter so that the customer can monitor and measure the system's performance and the quantity of electricity generated by the system. All meters must measure and display ongoing system kW output, as well as cumulative energy produced and retain production data during power outages. All performance meters must be easy to read and accessible to meter readers and LEU PV system inspectors. Customers may be required to provide cumulative production data from their performance meter on an annual basis.

Ground-mounted systems: If system is *not* roof mounted, the system must meet National Electric Safety Code (NESC) clearances and all property easements must be disclosed. Additionally, if trenching is required, installers are required to call for an Underground Service Alert (USA) to locate underground utilities 1-800-227-2600. If you don't "Call Before You Dig," you may disrupt service to an entire neighborhood, harm you and those around you and potentially result in fines and repair costs. Calling USA is free and helps prevent undesirable consequences.

In all cases, systems must be installed in conformance with the manufacturer's specifications and all applicable electrical and building codes and standards and LEU standards and specifications. LEU reserves the right to reject a system from interconnection if it is deemed unsafe.

Energy Storage Facilities: If an energy storage facility (battery) is installed, the inverter output shall automatically disconnect from Lodi source upon loss of Lodi voltage and not reconnect until Lodi voltage has been restored by Lodi.

Grandfathering Provision – Existing Solar Customers

Customers currently on Lodi's Net Energy Metering (NEM) Schedule will continue to receive compensation under the NEM Schedule until 20 years from the date of the system's original interconnection to the Lodi distribution system. This date will be determined based on the system's original meter set date.

Expansion of Existing Systems

Current Net Energy Metering (NEM) customers opting to expand their existing system prior to the expiration date associated with the Grandfathering Provision noted above will be required to change to Schedule EP for billing purposes in addition to meeting all requirements set forth in this Guidebook, Interconnection Agreement and Lodi rates, standards, rules, and regulations. Customers will not be permitted to have a portion of their system on NEM and a portion of their system on Schedule EP.

EXHIBIT H - C Note LP

Title-24 Compliance Summary - v1

Evan Zeff Architect
The Benjamin Apartments
Lodi, CA
Climate Zone: 12
Status: Approved

Program Participation
☐ GreenPoint Rated ☐ CAHP/CMFNH ☐ Energy Star
☐ LEED ☐ TCAC ☐ DOE ZNE Ready

Appliances
☑ Gas Dryer
☑ Gas Cooktop

Job # 4230
5/24/2021
CBECC Res v1.3

Approved

	2019 Code Minimum Compliance Requirements		
Plan Name	**Building A**	**Building B**	**Building C**
Number of Stories / Number of Units	3 / 24	3 / 18	3 / 12
Square Footage	17,172	17,346	12,408
Glazing %	17.19%	18.06%	17.41%
Energy Design Ratings			
EDR of Standard Design	55.9	55.8	56.3
EDR of Proposed Design North	52.8	52.9	53.2
EDR of Proposed Design East	55.8	55.3	55.7
EDR of Proposed Design South	52.8	52.9	53.2
EDR of Proposed Design West	55.8	55.3	55.7
Worst Case EDR Margin	0.1	0.5	0.6
Minimum Envelope Requirements			
Roofing Type	TPO	TPO	TPO
Roof Pitch	Flat	Flat	Flat
Cool Roof Credit (Aged Refl. / Emiss.)	0.65 / 0.85	0.65 / 0.85	0.65 / 0.85
Attic Type	Vented	Vented	Vented
Above Roof Deck Insulation	--	--	--
Below Roof Deck Insulation	--	--	--
Ceiling Insulation	R-38	R-38	R-38
Under FAU Platform	--	--	--
Radiant Barrier	Yes	Yes	Yes
Exterior Wall Finish	Stucco	Stucco	Stucco
Continuous Wall Insulation	--	--	--
Wall Cavity Insulation - 2x4	--	--	--
Wall Cavity Insulation - 2x6	R-21	R-21	R-21
Floor Over Garage/Exterior	--	--	--
Raised Subfloor Insulation / Crawlspace	--	--	--
Slab Edge Insulation	--	--	--
Minimum HVAC Efficiency Requirements			
Number of Systems	1 per Unit	1 per Unit	1 per Unit
Heating Type	Heat Pump	Heat Pump	Heat Pump
Heating Efficiency Rating	8.5	8.5	8.5
SEER Rating	16.0	16.0	16.0
EER Rating	13.0	13.0	13.0
Duct Insulation	R-4.2	R-4.2	R-4.2
Zonally Controlled	--	--	--
Bypass Ducts	--	--	--
Whole House Fan (cfm/sf watts/cfm)	--	--	--
Photovoltaic + Battery			
CFI Azimuth	CFI-1	CFI-1	CFI-1
Min PV System Size kW	40.91	35.77	25.68
Min Battery System Size kW	--	--	--
Min Required Production kWh	64,957	56,795	40,775
HERS Verification Requirements - Third Party Field Verifications by a Certified HERS Rater			
Duct Leakage (cfm)	5%	5%	5%
System Airflow (cfm/ton)	350	350	350
Fan Watt Draw (watts/cfm)	0.58	0.58	0.58
IAQ System Type	Balanced	Balanced	Balanced
IAQ ASHRAE 62.2 Ventilation (cfm)	Refer to CF-1R	Refer to CF-1R	Refer to CF-1R
Kitchen Hood HVI Certification	Yes	Yes	Yes
Refrigerant Charge	Yes	Yes	Yes
SEER Rating	Yes	Yes	Yes
EER Rating	Yes	Yes	Yes
Air Infiltration Rate (ACH50)	--	--	--
Quality Insulation Installation	Yes	Yes	Yes
Low Leakage Airhandler	--	--	--
Ducts In Conditioned Space	Yes	Yes	Yes
Duct Surface Area	--	--	--
Buried Ducts	--	--	--
Whole House Fan	--	--	--
Hot Water System	--	--	--
Domestic Hot Water Heating Requirements			
Energy Source	Gas	Gas	Gas
Thermal Efficiency (TE)	0.95	0.95	0.95
Tank Capacity	60 Gallons	60 Gallons	60 Gallons
Distribution Type	Recirc - Demand	Standard	Standard
Window Efficiency Requirements			
	U-Factor / SHGC	**U-Factor / SHGC**	**U-Factor / SHGC**
Operable	0.30 / 0.23	0.30 / 0.23	0.30 / 0.23
Fixed	0.30 / 0.23	0.30 / 0.23	0.30 / 0.23
Sliding Door	-- / --	-- / --	-- / --
French Door	0.30 / 0.23	0.30 / 0.23	0.30 / 0.23
Glass Panel Door	-- / --	-- / --	-- / --
Revisions Log			