

**BEFORE THE PUBLIC UTILITIES COMMISSION OF THE  
STATE OF CALIFORNIA**

Application of Southern California Edison Company (U338E) for Approval of Energy Efficiency Rolling Portfolio Business Plan.	Application 17-01-013 (Filed January 17, 2017)
And Related Matters.	Application 17-01-014 Application 17-01-015 Application 17-01-016 Application 17-01-017

**SUPPORTING DOCUMENT RESPONSE TO SCOPING MEMO OF VENTURA  
COUNTY ON BEHALF OF THE 3C-REN, TRI-COUNTY REGIONAL ENERGY  
NETWORK, FOR APPROVAL OF ITS RESIDENTIAL ENERGY EFFICIENCY ROLLING  
PORTFOLIO BUSINESS PLAN AND BUDGET**

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For the 3C-REN, Tri-County Regional Energy Network  
San Luis Obispo County, Santa Barbara County and Ventura County

Dated: **May 15, 2017** in Ventura, California

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## **I. SUMMARY**

The County of Ventura on behalf of the Tri-County Regional Energy Network (3C-REN), which includes the Counties of Ventura, San Luis Obispo and Santa Barbara, respectfully submits this response to the request for supplemental information (Attachment A) outlined in the SCOPING MEMO AND RULING OF ASSIGNED COMMISSIONER AND ADMINISTRATIVE LAW JUDGES (SCOPING MEMO) filed April 14, 2017 to Applications A17-01-013, A17-01-014, A17-01-015, A17-01-016 and A17-01-017. This response is intended to provide supplementary information for the purpose of evaluating the reasonableness of the 3C-REN Energy Efficiency Business Plan (3C-REN BP).

3C-REN asserts that the supplementary information provided here within, along with the original 3C-REN Business Plan submittal, highlights a clear need for the creation of a new regional energy network (REN) that services the unique needs of the Tri-County California Central Coast Region (Tri-County Region). Utilizing local governments to implement EE programs and facilitate coordinated efforts among all program administrators is a valuable and cost effective strategy. 3C-REN asserts there is need in the Tri-County Region and a REN should be created to address those needs.

3C-REN has identified significant service gaps in the Tri-County region and seeks to target the specific needs of the region through innovative program design that optimize outcomes by increasing participation and accessibility. Having routine working knowledge of the market and local

conditions makes the 3C-REN an ideal implementer that is well positioned to engage the residents of the Tri-County Region directly, while the larger scale of 3C-REN IOU partners make them better suited to Statewide, midstream, and upstream programs. 3C-REN looks forward to building upon the successes of existing RENs and coordinating closely with both RENs and Investor Owned Utilities (IOUs) to fill service gaps and provide complementary rather than duplicative services in an effort to meet aggressive statewide goals for energy efficiency.

3C-REN is sensitive to concerns related to the issues of overlap or duplication with IOU and SoCalREN program activities. 3C-REN looks forward to building upon the successes of existing RENs and coordinating closely with both RENs and Investor Owned Utilities (IOUs) to fill service gaps and provide complementary, rather than duplicative, services in an effort to meet aggressive statewide goals for energy efficiency (EE). 3C-REN will coordinate with the IOUs regarding existing programs to: identify and address the issue of overlap of programs; develop programs to accommodate the needs of the region; and continue coordination on program design to achieve energy savings goals.

Currently there is no Southern California Regional Energy Network SoCalREN Energy Upgrade California (EUC) Home Upgrade activity in the 3C-REN territory; moving forward program administrators (PA's) will continue to communicate and coordinate regarding any program offerings that may overlap within portions of the Tri-County Region. The 3C-REN is aware and diligent in working with program PAs to identify and eliminate

any potential duplication of efforts. 3C-REN plans to implement uniform and comprehensive residential programs across the Tri-Counties Region and will continue to collaborate with SoCalREN.

## **II. SCOPING MEMO ATTACHMENT “A” QUESTIONS**

**Questions applicable to all prospective Program Administrators (PAs)**

### **A. BUSINESS PLANS OVERALL**

- 1. Present a single table summarizing by sector (for the six specified sectors) their energy efficiency market potential, annual savings targets through 2025, and key metrics. This table should enable / facilitate assessment of how (well) the business plans go after efficiency potential, and of progress toward this potential.**

The 3C-REN BP relies on independent market research and on-the-ground experience to determine the potential of the EE market in the Tri-County Region. This is necessary as the 3C-REN and the Tri-County Region faces the continued challenge of having limited access to energy usage data across programs in sufficient level of detail to analyze sector specific market potential. The Tri-County Region service territory by the Tri-Counties and other local governments have requested region specific data from the IOUS but have struggled to extract this information.

Obtaining specific local level data has proven difficult, if not impossible,

over the years. Further, the Energy Efficiency Potential and Goals Study by Navigant presents information by IOU territory, not by county. In addition, the 3C-REN is at the intersection of three IOUs making the “potential” even more difficult to obtain.

Finally, the EE Potential and Goals Study does not provide the detail necessary to map anticipated activities proposed by the 3C-REN with their estimated impacts. For example, the 3C-REN proposes targeting moderate-income populations in the three counties. This target data cannot be extracted from the Potential and Goals Study. Therefore, the market characterization provided in the 3C-REN BP<sup>1</sup> is the most accurate representation of the available data on market potential. In response to this question, Appendix A and Appendix B data tables provide a review of the Tri-County Region needs, 3C-REN BP strategies, metrics and methodologies<sup>2</sup> identified within the 3C-REN BP program elements.

3C-REN requests guidance from the California Public Utilities Commission (CPUC or the Commission) for getting local level data from the IOUs and would welcome the opportunity to participate in new approaches to developing the EE Potential and Goals Study in the future. While not accurate in showing market potential to savings as it correlates to the 3C-REN program, the data extracted from the EE Potential and Goals Study shows the Residential Sector Potential across all IOU territories in California in *Figure 1: Residential Sector Potential: PG&E*,

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<sup>1</sup> 3C-REN BP, 5.0 Residential Sector Chapter, p. 26-67

<sup>2</sup> 3C-REN BP, Table 4: 3C-REN Metrics, p.24, and Table 14: Residential Home Energy Efficiency Market Barriers and Interventions, p. 41-43

*SCE, SCG Territory (SF and MF).*<sup>3</sup>

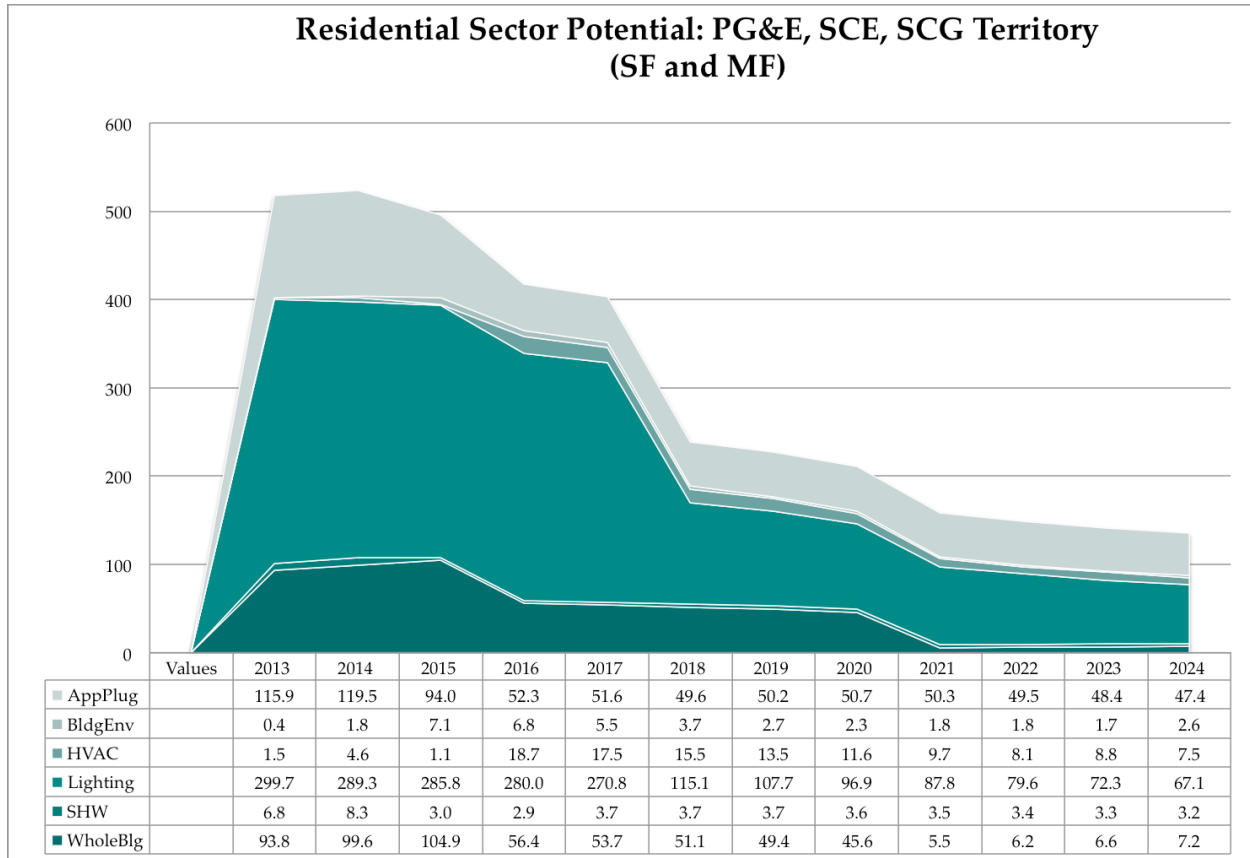


Figure 1: Residential Sector Potential: PG&E, SCE, SCG Territory (SF and MF)

The 3C-REN BP includes a table<sup>4</sup> of calculations revealing by phase (short, mid and long term targets) the anticipated market potential (new participants per year), average total energy savings, average CO2 avoided emissions, and the market effect metrics. The *Table 1: 3C-REN Residential Program Elements* in Appendix A attached to this document

<sup>3</sup> EESTATS Navigant, "2015 and Beyond PotentialandGoalsResultsViewer2615PUBLICDRAFT.xls"

<sup>4</sup> 3C-REN BP, Table 4. 3C-REN Metrics, p. 22

provides a break out by subprogram savings to reflect the requested EE market potential, annual savings targets through 2025, and key metrics.

**2. What evaluation studies or other research did you rely upon to inform your proposed intervention strategies and tactics for each sector, and how did those studies/research demonstrate the efficacy of the strategies and tactics in delivering the targeted savings?**

To highlight in more detail how specific studies and research, informed 3C-RENs strategies, the following narrative provides the methodology for developing the 3C-REN programs. A summary table, *Table 2: 3C-REN Residential Intervention Strategies Research*, follows with the specific citations and linkages to each strategy.

**Strategy 1: Build Trust and Interest in Deeper Energy Savings Over Time**

This strategy was highly influenced by studies such as "Why Do Homeowners Renovate Energy Efficiently?" and "Who's Participating and Who's Not?". In many ways these studies reinforced what 3C-REN already knew as a result of implementing energy efficiency programs (Local Government Partnerships (LGPs), emPower etc.) over the last five years. These studies support the need to build trusted relationships with homeowners and subsequently strengthen the ability to influence EE decisions. "Energy Advisors: Improving Customer Experience and Efficiency Program Outcomes," helped to guide the establishment of the "Energy Coach" service as a one-stop-shop for energy efficiency.

**Strategy 2: Employ Neighborhood Approaches to Achieve Scale in**



## Reach and Savings

Different approaches to the promotion of EE and its associated benefits have been conducted for years with varying levels of success. Studies such as “The Community Energy Challenge, Department of Energy, Case Study on CHERP” and “The Community Energy Challenge: A Place-Based Approach to Changing the Market for Energy Efficiency” provided 3C-REN with ideas for a more targeted approach to driving demand for energy efficiency through community-wide education that also creates behavior changes related to energy use. Both studies reference the importance of local governments in this process as a way to extend awareness and boost credibility.

### **Strategy 3:** Establish Local, Targeted Training for Residential Building Professionals

The “Energy Efficiency Occupations in the South Central Region, Key Findings” study essentially confirmed 3C-RENs assumptions related to workforce training needs. As shown by the study, the workforce in the 3C-REN Region has two primary needs for training and education:

- Technical training on code compliance, home performance and ZNE; and
- “Soft Skills” training for better communications, sales and marketing training, and business management.

As a result, 3C-REN training efforts will initially focus on creating a better qualified and effective workforce to deliver the 3C-REN programs. This

will mean focusing on existing contractors already participating via emPower and the IOU's Home Upgrade Program (HUP). Over time, the training topics will expand and become stackable to offer deeper and higher value training for the workforce, as recommended by the Don Vial Center Needs Assessment.<sup>5</sup>

**Strategy 4: Provide Regional Assistance to Building Departments and Jurisdictions to Help Comply and Adjust to Codes and Future Updates**

This strategy was informed by our interaction with Tri-County building departments, architects, contractors, engineers, raters etc., who conveyed their frustration with the process, time, training and expense involved with code compliance. These stakeholder frustrations are further exacerbated by rapidly changing energy code, especially for rural and smaller jurisdictions with limited resources. It is also informed by the Existing Building Energy Efficiency (EBEE) Action Plan, specifically Strategy 1.5<sup>6</sup>, which details a series of potential tactics for improving code compliance and effectiveness of standards. Tactics included in the EBEE are improved communications and training for local government, online permitting pilots, and improving the clarity and ease of standards. The tactics outlined in this strategy are designed to support these key

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<sup>5</sup> Zabin, C. et al. (2011). California Workforce, Education, and Training Needs Assessment for Energy Efficiency, Distributed Generation and Demand Response. Don Vial Center on Employment in the Green Economy of the University of California, Berkeley, see page 111. Retrieved from: <http://laborcenter.berkeley.edu/california-workforce-education-andtraining-needs-assessment-for-energy-efficiency-distributed-generation-and-demand-response/>

<sup>6</sup> Existing Building Energy Efficiency (EBEE) Action Plan 2015, passim, and Strategy 1.5, Building Efficiency Standards Development and Compliance p. 50-51, <http://www.energy.ca.gov/2015publications/CEC-400-2015-013/CEC-400-2015-013-D.pdf>

elements of the EBEE Action Plan. Finally, 3C-REN is actively coordinating with Bay Area Regional Energy Network (BayREN) and the statewide C&S working group and getting insights on needs and areas for coordination.

The intervention strategies, tactics and metrics proposed in the 3C-REN BP<sup>7</sup> are derived from a combination of on-the-ground experience implementing energy efficiency programs in the Tri-County Region and information gleaned from a diverse selection of well recognized studies and information resources. These sources include the CPUC, California Energy Commission (CEC), Department of Energy (DOE), and IOU sponsored studies, as well as academic reports and studies from non-profits.

Table 2: 3C-REN Residential Intervention Strategies Research

Category	Study	Strategies
Overall EE Statistics	EESTATS Navigant, "2015 and Beyond Potential andGoalsResultsViewer2615PUBLICDRAFT.xls"	S1
Underserved Markets	Scavo, Korosec, Guerrero, et al, 2016. "Low-Income Barriers Study, Part A: Overcoming Barriers to Energy Efficiency and Renewables for Low-income customers and Small Business Contracting Opportunities in Disadvantaged Communities." CEC. Publication Number: CEC-300-2016-009-SD2	S1, S2, S3

<sup>7</sup> 3C-REN 5.0 Residential Sector Chapter p. 26-68

Underserved Markets	EESTATS Navigant, "2015 and Beyond Potential andGoalsResultsViewer2615PUBLICDRAFT.xls"	S1, S2, S3
Program Design and Delivery Strategies	Matthew Socks, Phil Mosenthal, Optimal Energy, Inc., Donna DeCostanzo, Ashok Gupta, Natural Resources Defense Council, "The Energy Efficiency Extra Value Menu: Streamlining Energy Efficiency Delivery," 2016 ACEEE Summer Study on Energy Efficiency in Buildings	S1, S2, S3, S4
Program Design and Delivery Strategies	Maureen Quaid, The Cadmus Group, Inc., John Phelan, Fort Collins Utilities, "Fort Collins Utilities: A Municipal Utility Leading Innovation", 2014 ACEEE Summer Study on Energy Efficiency in Buildings.	S1, S2, S3
Program Design and Delivery Strategies	EMI Consulting, "Energy Upgrade California – Home Upgrade Program Process Evaluation 2014-2015", for PG&E, 2016	S1, S2, S3
Program Design and Delivery Strategies	C. Wilson, L. Crane, G. Chryssochoidis, "Why do homeowners renovate energy efficiently? Contrasting perspectives and implications for policy". Energy Research & Social Science, Volume 7, May 2015	S1, S2, S3, S4
Program Design and Delivery Strategies	M. Frank and S. Nowak, "Who's Participating and Who's Not? The Unintended Consequences of Untargeted Programs", American Council for an Energy-Efficient Economy, 2016	S1, S2, S3, S4
Program Design and Delivery Strategies	Marsh-Robinson, Marilyn, "Public and Private Financing Drives Energy Efficiency in Rural America", Economics Energy, January 15, 2014	S1, S2, S3, S4

Program Design and Delivery Strategies	Megan Billingsley, Chris Stratton, Emily Martin Fadrhonc, "Energy Advisors: Improving Customer Experience and Efficiency Program Outcomes," Lawrence Berkeley National Labs Program Brief, January 2016	S1, S2, S3, S4
Program Design and Delivery Strategies	CEC, "Existing Buildings Energy Efficiency Action Plan", September 2015	S1, S2, S3, S4
Program Design and Delivery Strategies	ACEEE, "Increasing Participation in Utility Energy Efficiency Programs," August 2015	S1, S2, S3, S4
Program Design and Delivery Strategies	Green Real Estate Working Group White Paper, "Greening California's Real Estate Sector, Recognizing the Value of Green and Energy Efficiency Improvements in Single family Homes," Version 1.0, August 18, 2015	S1, S2, S3
Program Design and Delivery Strategies	Alex Ramel and Emily Reisman, "The Community Energy Challenge: A Place-Based Approach to Changing the Market for Energy Efficiency", ACEEE, 2010	S1, S2, S3
Program Design and Delivery Strategies	Department of Energy, Case Study on CHERP, <a href="https://energy.gov/sites/prod/files/2015/12/f27/bbrn_cherp_casestudy_12-17-15.pdf">https://energy.gov/sites/prod/files/2015/12/f27/bbrn_cherp_casestudy_12-17-15.pdf</a>	S1, S2, S3
Program Design and Delivery Strategies	Knowles, III, Hal S., "Realizing Residential Building Greenhouse Gas Emissions Reductions," Program for Resource Efficient Communities, School of Natural Resources and Environment,	S1, S2, S3, S4

	<a href="https://www3.epa.gov/ttnchie1/conference/ei17/session5/kowles.pdf">https://www3.epa.gov/ttnchie1/conference/ei17/session5/kowles.pdf</a>	
Demographics	All demographic statistics are sourced from US Census Bureau, American Community Survey data for 2011-2015, 5-year estimates unless otherwise noted	S1, S2, S3, S4
Demographics	USDA Economic Research Service, "Rural America at a Glance," November 2016	S1, S2, S3, S4
Demographics	Disadvantaged Communities as defined in California Health and Safety Code Section 39711, <a href="http://law.onecle.com/california/health/39711.html">http://law.onecle.com/california/health/39711.html</a>	S1, S2, S3, S4
Demographics	California Association of Realtors Traditional Housing Affordability Index <a href="http://www.car.org/marketdata/data/haitraditional/">http://www.car.org/marketdata/data/haitraditional/</a>	S1, S2, S3, S4
Workforce	National Governor's Association, "America Works: Education & Training for Tomorrow's Jobs," NGA Chairs Initiative, 2013-2014.	S1, S2, S3, S4
Workforce	BW Research Partnership for the AEE Institute, "California Advanced Energy Employment Survey", December 2014	S1, S2, S3, S4
Workforce	Centers of Excellence, Economic and Workforce Development, "Energy Efficiency Occupations in the South Central Region, Key Findings 2009	S1, S2, S3, S4

Workforce	Donald Vial Center On Employment In The Green Economy, "California Workforce Education and Training Needs Assessment", 2011	S1, S2, S3, S4
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**B. MANAGEMENT AND ADMINISTRATIVE STRATEGIES**

**3. Please justify administrative budgets, and describe primary determinants of budget. What are the drivers of administrative and implementation (non- incentive) cost categories?**

Primary determinants of the 3C-REN BP budget are on program design and implementation, the management of the overall program, and ensuring delivery of services across the customer journey.<sup>8</sup> Drivers<sup>9</sup> of administrative cost include managing the procurement process, coordinating with other PAs, complying with the CPUC process, reporting and invoicing. Implementation cost drivers comprise of (non-incentive) code compliance work including an IT platform for permit submittal, WE&T, marketing, education and outreach activities, and building local resident trust.

As long-term administrators of multiple programs, the Tri-Counties will continue to act as responsible stewards of public funds, and will adhere to

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<sup>8</sup> 3C-REN BP, 3C-REN Customer Journey, p. 3, and Figure 3: Value Proposition Graph, p. 16

<sup>9</sup> 3C-REN BP, 3.0 Business Plan Budget and Metrics, p. 19-24

the policies and requirements set forth in the Counties of San Luis Obispo, Santa Barbara and Ventura's Administrative Manuals and Guides. The County of Ventura will be lead on all administration.<sup>10</sup> The County of Ventura, for 3C-REN, will follow its administrative manual policy and use approved accounting procedures and principals,<sup>11</sup> to ensure that public funds are spent, and that quality services are available when needed.<sup>12</sup> The County of Ventura will maintain records in accordance with Generally Accepted Accounting Principles as established by the Government Accounting Standards Board, Financial Accounting Standards Board, State Controller's Accounting and Auditing Manual, and federal and state requirements.

The County of Ventura uses a Board of Supervisors (Board) approved Budget Development Manual that serves as an instructional document and guide for departments during the preparation and submittal phases of the budget process. Common use of the manual by all County departments brings greater consistency and accuracy to the budget development process and simplifies the production of a standardized Preliminary Budget document. The County of Ventura Administrative Manual, Chapter II, 13, Annual Budget Development Process affirms that County agencies and departments are assigned major planning responsibility in providing public services, with the budget being key to

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<sup>10</sup>3C-REN BP, 4.0 Solicitation Plan, p. 25

<sup>11</sup> County Of Ventura 2005 Administrative Policy Manual General Information, Chapter II Policy No.13 Annual Budget Procedure: CEO N/A 2012 (Rev) Development Process; and Section 8, Generally Accepted Accounting Principles, Available online at <http://www.ventura.org/government>

<sup>12</sup> County of Ventura Procurement Guide, Chapter VII (a)-1, [http://vcportal.ventura.org/VCWEB/policies/docs/Procurement\\_Guide.pdf](http://vcportal.ventura.org/VCWEB/policies/docs/Procurement_Guide.pdf)



discharging that responsibility.

The County of Ventura goes through an annual budget development process. The budget translates the personnel, supplies, equipment and facilities needed to accomplish the functions of County government during a fiscal year into dollar amounts. It is both a policy-making and a legal instrument. The budget is a road map the County uses to provide public services within the limits of available financial resources. The road map included an adopted budget development manual, annual public hearing on rates and fees, followed by a public hearing and Board deliberation and approval of final budget. Though the general expectation is to conform to the enacted budget, the Board has recognized a need to establish some flexibility to adjust budgets during the fiscal year. Budget adjustments will need County Executive Office and Board approval and are transmitted to the Auditor-Controller's Office, which maintains countywide appropriation control accounts.

As a program operated in direct coordination with local governments, 3C-REN will benefit from the ability to leverage the administrative efficiencies afforded by already established resources such as, information technology (IT), procurement procedures and Board adopted procedures and policies. The Tri-Counties all follow local government practices and government codes and mandates.

**4. How are administrative costs and implementation (non-incentive) costs expected to vary over time, either by sector or portfolio-wide?**

Administrative costs and implementation (non-incentive) costs are

expected to vary over time as each program evolves from launch to closure. However, the 3C-REN will be operating its administration activities in as streamlined and efficient manner possible. The EE Policies and Procedures Manual<sup>13</sup> requires a 10% cap on administrative expenses. The 3C-REN will implement best practices to keep administrative costs below 10% with these cost expected to be reduced annually. In the first two years, the 3C-REN will experience some additional costs as it establishes policies, procedures and systems to accurately report to the CPUC, participate fully in the regulatory process and to launch and develop new programs.

- 5. As PAs transition to a role largely composed of administration, what are the best practices in administration the PAs will adopt (in order to maximize budgetary and administrative efficiency)? Describe any other internal approaches, metrics, or strategies that will be implemented by the PAs to ensure budgetary efficiency.**

Unlike the IOUs, 3C-REN will be managing, designing and implementing programs in the local Tri-County Region. Therefore this question does not relate to its operations. Question 6 addresses metrics for the portion related to administration.

- 6. What metrics will PAs use to determine administrative effectiveness and efficiency specifically?**

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<sup>13</sup> Energy Efficiency Policy Manual, Version 5, July 2013, Accessed online at: [http://www.cpuc.ca.gov/uploadedFiles/CPUC\\_Public\\_Website/Content/Utilities\\_and\\_Industries/Energy\\_-\\_Electricity\\_and\\_Natural\\_Gas/EEPPolicyManualV5forPDF.pdf](http://www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/Utilities_and_Industries/Energy_-_Electricity_and_Natural_Gas/EEPPolicyManualV5forPDF.pdf).

3C-REN, as an expansion of its program Strategies and Intervention metrics, will qualify effectiveness by maintaining a 10% (or lower) budget cap on administrative costs. As a part of the 3C-REN BP, an inclusion of key evaluation benefits and metrics<sup>14</sup> are associated with the completion of specific program strategies, which will be used to determine administrative operational outcomes efficacy. In addition, the County of Ventura as the lead Administrator for the 3C-REN, will monitor, track, and provide timely and accurate reporting for the CPUC and members; evaluate and make appropriate changes to programs and/or procedures to improve effectiveness; determine key milestones for programs; and track progress in meeting those milestones.

Finally, stakeholder input (such as participant surveys) will be included in the implementation plan, and as a part of ongoing program impact assessments to determine if there are necessary changes needed in service delivery.

**7. How often and what information will the PAs report to the Commission reflecting PA administrative spending and efficiency?**

3C-REN will abide by any schedule established within this proceeding and provide any available information requested by the CPUC. To sufficiently

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<sup>14</sup> 3C-REN BP, 3.2 Evaluation Benefits Framework, Key Evaluation Benefits and Metrics and Table 4. 3C-REN Metrics p. 21-24

review operative benefit within administrative spending and efficiency, 3C-REN recommends either a semi-annual or annual reporting schedule.

### C. PROPOSED BUDGETS

8. **Present a single table summarizing energy savings targets, and expenditures by sector (for the six specified sectors). This table should enable/facilitate assessment of relative contributions of the sectors to savings targets, and relative cost-effectiveness.**

3C-REN has provided a single table summarizing energy savings targets, and expenditures for its Residential sector broken out by subprogram, per Appendix A in the *Table 1: 3C-REN Residential Program Elements* and the total resource cost test (TRC) program administrator cost test (PAC) calculations included in *3C-REN TRC and PAC Workbook* in Appendix B which includes. These tables show cost allocation for each subprogram element and reflects how 3C-REN can enable/facilitate assessment of relative contributions comparative to savings targets and relative cost-effectiveness over time. The overall program resource and non-resource calculations provides a 0.4 TRC and 0.66 PAC. The following Table 3: 3C-REN Portfolio Budget Template shows 3C-REN specific extracted expenditures, savings and forecasts.

Table 3: 3C-REN Portfolio Budget Template

Sector	2018 EE Portfolio Budget				2018 EE Portfolio Forecasted Savings		
	Labor	Non-Labor (excl. Incentives)	Incentives	Total	KWH	KW	THERMS
Residential	\$ 859,832	\$ 915,950	\$ 348,000	\$ 2,123,782	706,000	500	65, 000
Commercial							
Agricultural							
Industrial							
Public (GP)							
Cross Cutting*	\$ 573,222	\$ 539,996		\$ 1,113,218			
<b>Total Sector Budget</b>							
EM&V-PA		\$ 53,950		\$ 53,950			
EM&V-ED							
OBF - Loan Pool**							
<b>EE Total</b>							
* Cross Cutting Sector includes Codes & Standards, Emerging Technologies, Workforce Education & Training, Financing.							
** For SDG&E and SCG the loan pool is not part of the authorized EE portfolio budget and is collected and tracked through a separate balancing account.							

- Using a common budget template developed in consultation with interested stakeholders (hopefully agreed upon at a “meet and confer” session), display how much of each year’s budget each PA anticipates spending “in- house” (e.g., for administration, non-outsourced direct implementation, other non-incentive costs, marketing), by sector and by cross-cutting program.

Pursuant to the directive in the Scoping Memo, the PAs and prospective PAs, including 3C-REN as a potential REN, have had several meet and confer sessions with ORA and TURN about additional budget information and a common budget template for all PAs and prospective PAs to use. Given the different practices of how information is tracked, the process has taken longer than anticipated. A Motion for Extension of Time to submit the requested information sought by this question to by June 12, 2017.

This time period will allow parties interested in the budget issues to review the material filed by the Business Plan Proponents and then determine whether they believe testimony is necessary to respond to that material. This ensures that parties have an opportunity to respond to the budget information. An email ruling allows for the requested extension of time. 3C-REN will file response to this question no later than June 12, 2017.

- 10. Present a table akin to PG&E's Figure 1.9 (Portfolio Overview, p. 37) or San Diego Gas and Electric's (SDG&E's) Figure 1.10 (p. 23) that not only shows anticipated solicitation schedule of "statewide programs" by calendar year and quarter, but also expected solicitation schedule of local third-party solicitations, by sector, and program area (latter to extent known, and/or by intervention strategy if that is more applicable). For both tables, and for each program entry on the calendar, give an approximate size of budget likely to be available for each solicitation (can be a range).**

This program request is not directly applicable to the 3C-REN BP as the 3C-REN is a regional, not statewide, PA. The 3C-REN BP has neither applicable statewide program elements nor third-party subcontracted solicitation schedules to be accounted for, and therefore this question does not seem relevant to address in this document.

#### **D. PROPOSED SOLICITATION STRUCTURE AND SCHEDULE**

**11. How long does each PA anticipate the solicitation, contract negotiation, and mobilization period will take for third-party contracts? Describe the timetable for the entire process.**

The requested PG&E table for statewide and Third-party solicitations does not pertain directly to 3C-REN. No portion of the 3C-REN BP falls under the guidelines required for third-party programs (complete design, implementation and operation of programs). 3C-REN may subcontract portions of activities to a contractor, but in all cases will lead the design, direction, and implementation of those activities. 3C-REN will not be subcontracting for third-party PA, but may be subcontracting certain aspects of the business plan, such as Energy Coach, Code Coach, and Direct Install services<sup>15</sup>. If solicitation is required, the 3C-REN would follow all procurement procedures, and be vetted through the County Third-Party Approvals processes for solicitations outlined in the County of Ventura Procurement Guide.<sup>16</sup>

**III. QUESTIONS APPLICABLE TO 3C-REN**

***General to portfolio***

**197. Provide cost-effectiveness estimates, by program and portfolio, for**

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<sup>15</sup> 3C-REN BP, 5.3 Strategies and Tactics, p. 44-64

<sup>16</sup> 3C-REN BP, 4.0 Solicitation Plan, p. 25

**those items as proposed in the 3CREN Business Plan. Also, provide 3CREN's work papers and calculation tool(s) and methodology.**

The CPUC has determined that cost-effectiveness<sup>17</sup> as it applies to IOUs does not apply to RENs. CPUC D.12-11-015<sup>18</sup> states “the Commission will not set a threshold cost-effectiveness level, either TRC or PAC, for RENs at this time. Rather the dual test for overall portfolio cost effectiveness, taking into consideration passing both the TRC and PAC tests for each service territory and for the entire approved portfolio, including RENs, will continue to govern the CPUC's cost-effectiveness for the energy efficiency programs.” Further, the CPUC describes in Decision D.12-11-015 and confirmed in Decision D.16-08-019, that the RENs value would be determined by three areas:

1. Activities that utilities cannot or do not intend to undertake,
2. Pilot activities where there is no current utility program offering, and where there is potential for scalability to a broader geographic reach, if successful, and
3. Pilot activities in hard-to-reach markets, whether or not there is a current utility program that may overlap.<sup>19</sup>

The energy savings claimed as part of 3CREN's cost-effectiveness

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<sup>17</sup> 3C-REN BP, 3.2 Evaluation Benefits Framework, p. 21-23

<sup>18</sup> CPUC D. 12-11-015, page 18

<sup>19</sup> CPUC, Decision 12-11-015, November 8, 2012, page 17.



calculations are driven by the implementation of the direct install and single family multi-measure incentive resource programs discussed in the 3C-REN BP Tactic 1.2 and Tactic 1.3<sup>20</sup> program element descriptions. 3C-REN proposes this innovative, multi-prong approach as a new way to engage customers and “build trust and interest in deeper energy savings over time”. While there is no singular set of measures within the Data for Energy Efficiency Resources (DEER)<sup>21</sup> database nor existing secondary source work paper that accurately reflects how 3C-REN’s new approach for pairing direct install with bundled efficiency measures will deliver energy savings, 3C-REN has developed its energy savings targets for these resource program elements by referencing DEER measures and existing work papers, as well as other secondary sources as cited below.

3C-REN’s methodology established a typical participant consistent with the approach put forth in the work paper “PGECOALL109 Energy Upgrade California Home Upgrade Revision #2” and retrieved individual measures data from the DEER 2016 Ex Ante database. Using a typical Single Family participant home modeled in EnergyPro as the baseline, 3C-REN developed multiple scenarios representing a common mix of potential measures, as seen in *Table 4: Measure Methodology and Source*, to find the average savings per participant by program. The average savings were then multiplied by the participation rate for each year to come up with the anticipated savings by year.

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<sup>20</sup> 3C-REN BP, p. 45-48

<sup>21</sup> Available online at [www.deeresources.com](http://www.deeresources.com)

Table 4: Measure Methodology and Source

Measure Descriptions	Primary Calculation Methodology	Work Papers or Secondary Source
<b>Air Sealing</b>	Energy impacts were obtained from the DEER2016 Ex Ante Database (READI v2.4.7)	N/A
<b>Attic Insulation</b>	Energy impacts were obtained from the DEER2016 Ex Ante Database (READI v2.4.7)	N/A
<b>Clothes Dryer</b>	Energy impacts were obtained from the DEER2016 Ex Ante Database (READI v2.4.7)	N/A
<b>Clothes Washer</b>	Energy impacts were obtained from the DEER2016 Ex Ante Database (READI v2.4.7)	PGECOAPP127
<b>Faucet Aerators and Showerheads</b>	Energy impacts were obtained from the DEER2016 Ex Ante Database (READI v2.4.7)	N/A
<b>Water Heaters</b>	Energy impacts were obtained from the DEER2016 Ex Ante Database (READI v2.4.7)	N/A
<b>HVAC Duct Seal and Maintenance</b>	Energy impacts were obtained from the DEER2016 Ex Ante Database (READI v2.4.7)	N/A
<b>HVAC Efficient Fan Control</b>	Energy impacts were obtained from the DEER2016 Ex Ante Database (READI v2.4.7)	SCE13HC052
<b>HVAC Evaporator Coolers</b>	Energy impacts were obtained from the DEER2016 Ex Ante Database (READI v2.4.7)	SCE13HC017
<b>HVAC Furnace/Heat Pumps</b>	Energy impacts were obtained from the DEER2016 Ex Ante Database (READI	N/A

	v2.4.7)	
<b>HVAC Refrigerant Charge and Maintenance</b>	Energy impacts were obtained from the DEER2016 Ex Ante Database (READI v2.4.7)	N/A
<b>Lighting fixtures and lamps</b>	Energy impacts were obtained from the DEER2016 Ex Ante Database (READI v2.4.7)	SCE13LG007; 2015 Lighting Disposition
<b>Refrigerators</b>	Energy impacts were obtained from the DEER2016 Ex Ante Database (READI v2.4.7)	SCE13AP001
<b>Smart Power Strips and Plugs</b>	Energy impacts were obtained from the DEER2016 Ex Ante Database (READI v2.4.7)	SCE13CS002.3

In the course of the CPUC Energy Division’s review of these Scoping Memo responses, 3C-REN welcomes further engagement with the CPUC Energy Division to discuss the methodology outlined above in greater detail. Upon approval of the 3C-REN BP and as part of any Implementation Plan and Claims Reporting, 3C-REN will work with the CPUC Energy Division to further document this methodology and will develop and submit work papers and calculators as necessary.

While participation in IOU programs can be a relative indicator of how the Tri-Counties Region is underserved due to its location and demographics, the 3C-REN BP aims to lower accessibility barriers experienced by rural customers and middle income households. Due to scarcity and high property values, programs such as Energy Upgrade California are inaccessible due to high project costs and high cost to execute. More accessible options and innovative delivery strategies will be required for

the State to achieve the goals established by SB-350. Informed by direct action with homeowners and contractors, the 3C-REN BP employs innovative strategies to lower barriers for middle-income property owners, residents who face split-incentive barriers, and the workforce who serve them.

3C-REN interventions focus only on the Residential sector<sup>22</sup> (downstream), including related residential Codes and Standards and Workforce Education and Training. As such, 3C-REN will not engage municipal buildings or businesses at this time. Implementing the strategies proposed in the 3C-REN BP will produce the following results<sup>23</sup>.

**198. Provide budget amounts for each sector and, to the extent possible, for each proposed program.**

3C-REN has provided a listing of anticipated programs,<sup>24</sup> and estimated budget amounts for each subprogram in its Residential sector business plan proposal. The CPUC decision informing the development of the Business Plans specifically indicated that the detailed for programs and their respective budgets should not be included in the Business Plan, only in the Implementation Plans. Therefore, these programs and budgets may be adjusted and updated in the Implementation Plan process, especially

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<sup>22</sup> 3C-REN BP, p.1-11

<sup>23</sup> 3C-REN BP, Table 4, 3C-REN Metrics p.24

<sup>24</sup> 3C-REN BP. P. 51

those that are anticipated in the later years of the Plan. The subprogram break out is as follows, and is clearly demarcated in Appendix A as Resource/Non-Resource:

- *Residential Program*
- *Single family*
- *Multifamily*
- *Direct install Bundles*
- *Residential Workforce, Education and Training program (WE&T)*
- *Code Compliance and Technical Assistance Program (C&S/Code Coach)*

The 3C-REN BP incorporates Intervention Strategies and Tactics for each program element through a coordinated approach with IOUs, Local Government Partnerships, local jurisdictions, and with other Regional Energy Networks, and views these agencies and organizations as complementary partners.<sup>25</sup>

**199. Describe 3CREN's plan for coordination and alignment with IOU programs.**

The 3C-REN will include in the implementation plan a list of agency roles and responsibilities, including designating a lead IOU.

Encompassed as basic functions of 3C-REN, activities to expand

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<sup>25</sup> 3C-REN BP, Purpose of 3C-REN Business Plan p.2; 5.4 Key Partners p. 65-67.

existing relationships with partners are the following:

- Regular coordination and communication meetings
- Continued engagement with codes and standards groups
- Establishing channels for capacity, resources and tools review
- Providing opportunities for exchange of best practices.

3C-REN will align with IOU programs and would like to select Southern California Gas (SoCalGas) as the lead IOU contact for coordination and to maintain administrative effectiveness.

**200. For those programs or program elements that will be combined or run jointly with non-energy efficiency programs, define the funding source and financial and accounting structure for assigning and delineating the non-energy efficiency funded components.**

The Tri-counties have existing funding from the CEC and the DOE that can be leveraged to provide financing for solar water heating projects and solar photovoltaic (PV) projects that are combined with energy efficiency upgrades. To ensure loans are properly placed, the lenders who process these loans have a loan loss reserve matrix that provides guidance on how to place loans with the proper loan loss reserve based on specific eligibility requirements. In addition, staff receives a monthly loan report where they are able to review loan information.

These funding sources also provide some budget to cover staff time related to facilitating financing and providing customer education. Staff time is tracked through electronic timesheets and staff are required to code their time to specific programs and specific activities. Timesheets are reviewed for accuracy by management and fiscal leads. 3C-REN does not expect to host any workforce training or marketing activities specifically related to solar technologies. Contractors will be required to report energy savings associated with solar projects separately from the energy savings associated with energy efficiency projects to ensure that these savings are attributed to the appropriate funding agency.

**201. 3CREN asserts that its constituents are “underserved” vis a vis IOU energy efficiency programs. Provide evidence that supports this claim for programs that 3CREN proposes to administer. This should include a comparison of participation rates within the three counties to those in other California counties, including for the hard-to-reach segment that 3CREN proposes to target.**

The 3C-REN BP provides market analysis detailing the market and the gaps in services to the communities in the region. The summary provided in the 3C-REN BP<sup>26</sup> includes evidence of lack of service as seen in the “Summary of Important Finding from the Market Analysis”:

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<sup>26</sup> 3C-REN BP, 5.1 Market Analysis, Summary of Important Findings from the Market Analysis, p.27-28

“The following are key findings that impact the ultimate design, delivery and growth of the 3C-REN programs informed by this Business Plan.

- 3C-REN’s service area is geographically diverse with varying microclimates, but with a large percentage on the coast in Climate Zone 5.
- The Tri-Counties have three different IOUs providing programs in the Region.
- The limited service population means that contractors must work across counties to be profitable and the current situation with multiple IOUs offering programs with different requirements, make it difficult to achieve efficiencies of scale.
- Fewer than 30 percent of the community can afford the median priced house with a minimum income of \$125,000.
- 33 percent of the Tri-Counties population has incomes between \$50,000 and \$100,000, which is just above the eligibility for low-income programs and below the typical level of service for mainstream utility programs.
- 34 percent of all housing units and 45 percent of the single family homes are occupied by renters, which complicates program delivery.
- 33 percent of the population’s primary language is not English.
- Approximately 8 percent of the population is located in rural areas, which are traditionally underserved by utility programs.



- 37 percent of the housing stock in the Tri-Counties was built before 1970.
- There is the opportunity for high job growth in key energy efficiency occupations in the Region, however, employers have found it difficult to fill these jobs with skilled workers.”

The following evidence supports 3C-REN’s assertion that its constituents are underserved and hard-to-reach and that the 3C-REN BP proposal fulfills those service gap needs. As stated earlier in this document, comparisons of participation rates of existing IOU programs for the three counties compared to those in other California counties, is difficult due to lack of access to local level data from the IOUs via EESTATS. Further, the gaps in provision of existing IOU services to the region can be identified in the HUP participation maps<sup>27</sup>. An explanation of the characteristics of constituents and existing services provided to the Central Coast Region are described within the 3C-REN BP.<sup>28</sup>

The 3C-REN BP provides an understanding of how the Tri-Counties are underserved, and the 3C-REN BP Strategies<sup>29</sup> clearly focus on its hard-to-reach segments. The proposed subprograms will target underserved constituents but will in no way duplicate existing services. 3C-REN would

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<sup>27</sup> M. Frank and S. Nowak, "Who’s Participating and Who’s Not? The Unintended Consequences of Untargeted Programs", American Council for an Energy-Efficient Economy, 2016

<sup>28</sup> 3C-REN BP p. 28-35 and 3C-REN BP on p. 39-40

<sup>29</sup> 3C-REN BP, 5.3 Strategies and Tactics p. 44-64, and specific language on p.45

like uniform and comprehensive residential services (currently not provided) to be implemented locally across the Tri-Counties Region and will continue to collaborate with all PAs regarding any perceived existing program overlap.

**202. 3C-REN's assertion that its constituents are underserved is nonetheless premised on a baseline for current IOU program participation. It would seem that 3C-REN must go beyond those in order to be addressing the "underserved" market. Related to Question 5, provide program participation baselines and describe how 3C-REN will deploy new or more effective strategies to improve those participation rates (e.g., as would be measured in its proposed metrics):**

- Number of property owners reached and conversion to projects
- Number of participating households, businesses and jurisdictions
- Number and percentage of hard-to-reach populations served
- Number of kWhs, kW and Therms saved by program activities)

It is not conclusive that the IOU program participation levels would in fact be the baseline for the 3C-REN programs. 3C-REN does not have access to those numbers and therefore cannot estimate or use them as a baseline. Based on research and experience, it is the opinion of the 3C-REN that there are substantial markets as identified in the 3C-REN BP<sup>30</sup> that are not being addressed by the IOU programs in any meaningful and

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<sup>30</sup> 3C-REN BP, Energy Usage and Potential Savings, p. 39-43

persistent way. Based on the premise of current IOU programs participation, the markets addressed in the 3C-REN BP are not comprehensively included in the IOU programs and the Tri-County Region is a severely underserved area.

3C-REN's constituents are underserved<sup>31</sup> based on and the best available information, such as geographical distribution of residential electricity savings,<sup>32</sup> and the 3C-REN's best efforts to extrapolate data from existing studies and reports from the IOUs. The 3C-REN BP provides program elements that will be employed to address the underserved in the Tri-County Region, and asserts by following the outline strategies will improve EE savings and participation rates. 3C-REN seeks clear guidance from the CPUC and acceptance of the definition of hard-to-reach to include underserved areas within the Tri-County Region presented in the 3C-REN BP.

### ***Financing***

#### **203. Would 3C-REN classify the financing components of its proposed business plan as “resource” or “non-resource” activities?**

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<sup>31</sup> 3C-REN BP, Energy Usage and Potential Savings, p. 39-40, also 3C-REN BP, Tri-County Area Definition and Characteristics, p. 28-34

<sup>32</sup> 3C-REN BP, Energy Usage and Potential Savings, Figure 9: Geographical Distribution of Residential Electricity Savings, p. 39

3C-REN currently classifies the financing components of its proposed business plan as "non-resource" given the energy savings associated with upgrade projects are typically attributed to rebate and incentive programs, such as Home Upgrade or the Multi-Measure programs, 3C-REN is proposing. 3C-REN would like to request guidance from the CPUC on how the cost-effectiveness of non-resource activities is currently calculated.

Although 3C-REN financing activities are currently proposed as non-resource, 3C-REN would be amenable to reclassifying financing as a resource activity if a cost-effectiveness framework that accounts for the benefits and costs associated with financing can be developed. 3C-REN hopes such a framework may result from the Regional Finance Program Attribution and Cost-effectiveness study currently being conducted by Opinion Dynamics and Dunsky Energy Consulting and appreciates the CPUC's commissioning of this important study.

**204. For resource-classified financing programs or program elements, how will savings be estimated and measured?**

3C-REN currently classifies financing activities as non-resource, as a majority of projects are not financed and a majority of residents who finance projects use conventional financing<sup>33</sup> options that have no energy

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<sup>33</sup> PY 2014 Finance Residential Market Baseline Study Report, Vol. I of II, CPUC, March 2016,  
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efficiency requirement. The dynamics of financing residential EE upgrade projects is evolving. 3C-REN would like to work with the CPUC and other PAs to move towards reclassifying financing activities.

For the 3C-REN BP resource-classified program element Direct Install (DI),<sup>34</sup> savings will be estimated and measured through multi-measure project bundles. The measures will be based upon the climate zone and regional construction conditions to provide forecasted savings results, track cost-effectiveness, and deliver high value results to customers.

**205. For those financing programs/program elements classified as “non- resource,” on what basis will 3CREN evaluate their success or goal attainment?**

3C-REN views financing as a tool that enables energy efficiency projects, but that does not necessarily drive demand. As a result, 3C-REN’s metrics for evaluating the success of financing components are more nuanced as shown below:

**Goals/Metrics**

- Open up new market and financing opportunities for moderate income homeowners who would utilize smaller loans that range from

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p. 1, and 5. Market Baseline Findings, p. 20-32

<sup>34</sup> 3C-REN BP, Strategy 1. Build Trust and Interest in Deeper Energy Savings Over Time, Tactic 1.2 Utilize Direct Install Program to Build Base for Deeper Savings, p. 47 and p. 52

\$5,000-\$15,000, addressing the high first cost barrier that is a primary barrier among lower income brackets

- Maintain a loan product offering with competitive rates and terms (rates starting at 3.9%, 15 year payback)
- Number of property owners that utilize financing options
- Number of contractors offering financing options

#### **IV. SERVICE**

In alignment with requirements by the Public Utilities Code and the Commission's Rules of Practice and Procedure, this supporting document will be served to all parties on the official CPUC service list for the application proceedings A17-01-013, A17-01-014, A17-01-015, A17-01-016 and A17-01-017, and a copy of this and other documents relating to the 3C-REN BP are publicly available online at:

<http://www.ventura.org/environment/energy-efficiency>.

#### **V. CONCLUSION**

3C-REN asserts there is significant and demonstrated need to fill service gaps in the Tri-County Region's Residential Sector, and that a REN should be created to address those needs. Moreover, 3C-REN asserts that local government agencies, particularly ones building off of existing residential programming, are best positioned to address those needs. 3C-REN looks forward to building upon the successes of existing RENs and

coordinating closely with all RENs and IOUs to fill service gaps and provide complementary rather than duplicative services in an effort to meet aggressive statewide goals for energy efficiency. The 3C-REN respectfully submits this supporting document and requests that the Commission approve its Residential EE Business Plan and Budget proposal.

Respectfully submitted,

/s/ Alejandra Tellez

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For the 3C-REN, Tri-County Regional Energy Network  
San Luis Obispo County, Santa Barbara County and Ventura County

Dated: **May 15, 2017** in Ventura, California

**Appendix A**

**Table 1: 3C-REN Residential Program Elements**



Appendix A - Table 1: 3C-REN Residential Program Elements

3C-REN Residential Program Elements		Residential Program			Residential Workforce, Education and Training Program	Code Compliance and Technical Assistance Program	Phase 1 Short Term	Phase 2 Mid Term	Phase 3 Long Term
		Single Family	Multifamily	Direct Install	(WE&T)	(C&S)	2018 2019	2020 2021 2022	2023 2024 2025
Intervention Strategy	S1: Strategy 1 Build trust and interest in deeper energy savings over time.	S1	S1	S1					
	S2: Strategy 2 Employ neighborhood approaches to achieve scale in reach and savings.	S2	S2	S2	S2				
	S3: Strategy 3 Establish Local, Targeted Training for Residential Building Professionals.			S3	S3	S3			
	S4: Strategy 4 Provide Regional assistance to Building Department and Jurisdictions to help comply and adjust to Codes and future updates.				S4	S4			
Market Segment & Potential  (see 3C-REN BP, p. 26-35)	Occupied Households: 512, 207 - Affordability Index: 25% - Moderate Income (\$48k to \$100k): 168,186 - Rural Homes: 39, 569 - ESL: 33% - Homes built before 1970: 37% - Home built after 2000: 12%	396,291	115, 023		9,000				
Baseline	Program Initiation Year	2018	2018	2018	2018	2018			
Target Metrics  (see 3C-REN BP, Table 4: 3C-REN Metrics, p. 24)	Avg of New Participants per Year	X	X				2,200	7,500	12,300
	Percentage of Homes in targeted Neighborhoods Receive Energy Coach Site Visit	X	X				Ramp Up	50%	60%
	Percentage of Energy Coach Site Visits Converted to "Bundled" Projects	X	X	X			35%	40%	45%
	Avg Total Energy Savings in kWh	X	X	X			1,410,000	4,884,000	8,295,000
	Avg Total Energy Savings in therms	X	X	X			130,000	471,000	828,000
	Avg Total Energy Savings in kW	X	X	X			1,000	3,600	8,295,000
	Avg Avoided CO2 in tons	X	X	X			1,600	5,550	6,300
	Avg of New Contactors Trained				X		240	600	1,080
	Avg Percentage Increase in Permit Closure for Projects that Trigger Title 24, Part 6 Compliance					X	X	5%	15%
Number of Jurisdictions using Permitting Tool						X	Ramp Up	14	28
Resource vs. Non-Resource (NR)		NR	NR	Resource	NR	NR	Phase 1	Phase 2	Phase 3
Budget Amounts  (see 3C-REN BP, Table 2: 3C-REN Implementation Budget, p. 19)	Total	28,333,246		12,162,890	6,133,415	6,133,415	7,310,850	17,865,883	27,586,234
	Admin	1,817,222		647,296	605,741	605,741	684,000	1,298,000	1,694,000
	Implementation	14,688,003		11,200,995	4,896,001	4,896,001	5,129,000	12,143,000	18,409,000
	Marketing & Outreach	1,396,800		280,000	465,600	465,600	531,000	925,000	1,152,000
	Incentives	9,933,000					847,000	3,207,000	5,879,000
	3C-REN EM&V	498,221		34,599	166,074	166,074	119,850	292,883	452,234

**Appendix B**

**Workbook: 3C-REN TRC and PAC**

## Appendix B - Workbook: 3C-REN TRC and PAC

### WORKBOOK: 3C-REN TRC and PAC

	Yr 1		Yr2		Yr3		Yr4		Yr5		Yr6		Yr7		Yr8		All Years	
	2018		2019		2020		2021		2022		2023		2024		2025			
	TRC	PAC	TRC	PAC	TRC	PAC	TRC	PAC	TRC	PAC	TRC	PAC	TRC	PAC	TRC	PAC	TRC	PAC
DI & DI Copay	0.65	0.84	0.68	0.89	0.71	0.92	0.74	0.97	0.76	1.00	0.78	1.03	0.80	1.05	0.82	1.08	0.76	1.00
Smart Bundles	0.40	1.55	0.41	1.62	0.43	1.74	0.44	1.81	0.46	1.87	0.47	1.98	0.49	2.04	0.50	2.09	0.46	1.90
<b>Resource Portfolio</b>	<b>0.50</b>	<b>1.07</b>	<b>0.52</b>	<b>1.13</b>	<b>0.53</b>	<b>1.21</b>	<b>0.55</b>	<b>1.27</b>	<b>0.57</b>	<b>1.31</b>	<b>0.58</b>	<b>1.39</b>	<b>0.59</b>	<b>1.43</b>	<b>0.61</b>	<b>1.47</b>	<b>0.57</b>	<b>1.33</b>

	Yr 1		Yr2		Yr3		Yr4		Yr5		Yr6		Yr7		Yr8		All Years	
	2018		2019		2020		2021		2022		2023		2024		2025			
	TRC	PAC	TRC	PAC	TRC	PAC	TRC	PAC	TRC	PAC	TRC	PAC	TRC	PAC	TRC	PAC	TRC	PAC
Resource Programs	0.50	1.07	0.52	1.13	0.53	1.21	0.55	1.27	0.57	1.31	0.58	1.39	0.59	1.43	0.61	1.47	0.57	1.33
Non-resource Progams	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Portfolio</b>	<b>0.27</b>	<b>0.39</b>	<b>0.31</b>	<b>0.46</b>	<b>0.35</b>	<b>0.55</b>	<b>0.39</b>	<b>0.65</b>	<b>0.41</b>	<b>0.70</b>	<b>0.43</b>	<b>0.76</b>	<b>0.43</b>	<b>0.76</b>	<b>0.45</b>	<b>0.79</b>	<b>0.40</b>	<b>0.66</b>