BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Integrate and Refine Procurement Policies and Consider Long-Term Procurement Plans.	Rulemaking 12-03-014

COMMENTS OF THE LARGE-SCALE SOLAR ASSOCIATION ("LSA") ON THE ENERGY DIVISION STRAW PROPOSAL ON STANDARDIZED PLANNING STANDARDS

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The Large-scale Solar Association ("LSA") appreciates the opportunity to comment on the Energy Division "Straw Proposal" for standardized planning assumptions which was distributed electronically to the service list on May 10, 2012 and discussed at a workshop held on May 17, 2012 in this proceeding. These comments are filed in accordance with the Commission's Rules of Practice and Procedure and the Scoping Memo and Ruling of Assigned Commissioner issued in this proceeding on May 17, 2012, which requested comments on the Straw Proposal by May 31, 2012.

LSA's comments conform to the template that Energy Division distributed electronically to the service list on May 23, 2012, and appear in Attachment 1. In general, LSA endorses the Straw Proposal's approach of grounding the LTPP planning process in real-world possibilities that reflect committed RPS procurement decisions and incorporating information developed in other proceedings, including use of the RPS proceeding (R.11-05-005) to develop a core set of renewable resources assumed to develop in all scenarios. However, LSA disagrees with the Straw Proposal's transmission and deliverability assumptions, and believes that consistency with the approach of using assumptions that reflect "sunk" decisions and completed planning efforts means that the transmission and deliverability assumptions should conform to the California

Independent System Operator Corporation's ("CAISO") adopted transmission plan and reflect Commission-approved power purchase agreements.

LSA's comments respond to some but not all of the questions in the template. LSA reserves the right to respond subsequently to those questions it did not address in the attachment.

Respectfully submitted,

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ATTACHMENT 1

General

1. Guiding Principles

In general, LSA concurs with the guiding principles expressed in the Straw Proposal. LSA strongly agrees with the principles that the assumptions should take a realistic view of expected resource achievements (Principle A), and reflect real-world possibilities, including the intentions of market participants, particularly as expressed through market transactions and committed investments (Principle B). Through the course of multiple proceedings and exertion of substantial effort by a host of stakeholders over the last decade, the Commission has created a rigorous process for RPS procurement. This proceeding should build from a foundation of the contractual commitments that have resulted from that effort. LSA accordingly strongly supports deriving the expected renewable energy resources assumed in the scenarios developed in this proceeding from the RPS proceeding (R.11-05-005), as discussed further below.

LSA has some reservation about Principle E, which states that infrastructure portfolios should be substantially unique from each other. While we agree that planning efforts should consider a diverse set of future possibilities where such outcomes are reasonably likely, we note that this principle could be in tension with Principles A and B. For instance, the portfolios may be substantially similar in a situation where contracted resources will fulfill much of the resource need over the planning horizon, particularly during the initial 10-year planning period. Thus, LSA strongly recommends that expected resource achievements serve as the primary focus of the Commission's planning efforts.

LSA agrees with the principle that the scenarios should be informed by an "open and transparent process" including the use of publicly-available market data, but is concerned by the caveat that publicly available market-price data may be checked against confidential market price data for accuracy. While such verification is appropriate in concept, additional information should be provided regarding how the check would be conducted as well as the sources and vintage of the confidential data.

LSA also commends the Straw Proposal's description of how the scenarios will be used and statement of the questions this LTPP seeks to answer. As discussed in LSA's comments on the Preliminary Scoping Memo, greater clarity regarding the purpose of the LTPP and specific definition of the questions to be decided helps parties focus their attention appropriately and should contribute to more efficient and better-informed outcomes. However, LSA remains uncertain about the relationship of the LTPP and other proceedings addressing renewable integration costs. LSA believes that the integration analysis produced in this proceeding should be designed to provide the quality of data required for the development of integration values in the RPS proceeding for use in the resource selection process. Further, the design and use of integration values in the "least cost, best fit" calculation should be part of a broader examination of integration cost responsibilities which includes the CAISO's efforts to allocate costs for its market products. LSA recommends that the "problem statement" be expanded to include

development of integration values for use in the "least cost, best fit" calculation and creation of a roadmap for identifying and resolving integration cost responsibilities. Both questions should be addressed after the integration analysis is completed and integration requirements are better defined.

2. **Planning area and planning period**

LSA supports the proposal to consider a planning period of 20 years or greater in this proceeding. Discussion at the May 17, 2012 workshop proposed use of more detailed assumptions and studies for the initial 10-year period, and use of simplified assumptions and less detailed review for the subsequent years. LSA supports this approach. The longer horizon will provide more flexibility to consider the implications of alternative scenarios and sensitivity cases, and yield more information to guide policy development moving forward. Planning efforts over the longer horizon can be less detailed and granular than the studies of the nearer term 10-year period, while still considering key variables that will affect energy development in the state. LSA notes that the longer planning horizon provides an opportunity to consider significantly different futures in terms of policy and resource build-out. Going forward, LSA urges the Commission to consider and identify the major policy drivers that will affect energy demand and supply over this 20-year time horizon. As the Commission and stakeholders gain more experience with the 20-year planning horizon, these policy drivers may help inform the development of the 20-year planning assumptions and scenarios

Demand-side Assumptions

3. **Economic & Demographic assumptions**

4. **Load Forecast**

    a. **Is the most recent revised demand forecast appropriate to use in the absence of a recent adopted demand forecast?**

5. **Incremental Energy Efficiency**

Note: **Some impacts of energy efficiency are embedded into the Energy Commission's IEPR forecast. The savings here are above and beyond those levels.**

6. **Non Event-Based Demand Response**

Note: **Most Demand Response is accounted for on the supply-side via Event-Based programs.**

7. **Incremental small photovolatics (demand-side)**

8. **Incremental combined heat and power (demand-side)**

Note: **CHP is split between demand-side and supply-side. See supply-side values for incremental CHP assumed exporting to the grid.**

   a. **What capacity factor is appropriate to use?**

9. **Traditionally, local area and other assessments utilizing a higher peak forecast have been based on a middle forecast for energy and peak. If this should be changed, please explain why.**

A 1-in-2 peak load "middle" forecast may be used for system resource planning because the resource planning will include a margin of 15% - 17% of peak load. However, in planning a transmission system, transmission planning studies require an algorithm in which the transmission resource must equal load plus losses. Therefore, load forecast assumptions in transmission planning would typically represent 1-in-5 adverse weather forecast for the bulk transmission system and 1-in-10 for the local area system, because the transmission system must be able to support the various generation patterns depending on future operating conditions. The load forecast for the bulk system (1-in-5 adverse weather) can be less stringent than that of the local area (1-in-10 adverse weather) because of the higher load diversity that typically exists for high voltage systems.

10. **Are there any significant demand-side assumptions that have been missed? If so please identify, provide sources, and the MW and GWh magnitude and likelihood.**

11. Other comments on demand-side assumptions.

At the May 17, 2012 workshop, concerns were expressed that the range of demand forecasts resulting from the proposed standardized planning assumptions might be too narrow. While LSA reserves comment on the specific demand side assumptions, LSA believes the demand forecasts that are ultimately created should be sufficiently differentiated and robust to encompass a range of outcomes that include both success and failure of current demand-side policy initiatives. LSA also supports close examination of super peak load conditions, where high temperatures may lead to high loads as well as stress and temperature-induces performance degradation of supply-side resources.

Supply-side Assumptions

12. Should all resources be accounted for by their NQC or a forecast of NQC?

13. What year and data source should be used for variable resources' production profiles?

LSA notes that the CAISO has been working on a stochastic simulation effort to complement the deterministic approach that was used in the 2010 LTPP modeling. This stochastic approach should provide a better sense of the range of possible outcomes for renewable resource production. Thus, the specific year selected for the initial production profile development will not necessarily dictate the final results. Use of the stochastic simulation would help to overcome the limitations inherent in selection of a single year for the deterministic integration modeling approach used in the 2010 LTPP. LSA supports this stochastic modeling effort and urges the Commission to account for the uncertainties in key input assumptions by incorporating the results from the stochastic effort into this proceeding.

14. How should transmission capacity be considered?

LSA has been heartened by the recent efforts of the California energy agencies to coordinate their siting, transmission and procurement planning efforts. Minimizing redundant activities should be a key goal as the agencies move forward with this coordination. These planning efforts must build on the results of completed planning efforts in order to send clear and consistent signals to the renewables market and achieve the state's RPS objectives. To do so, this proceeding should start with the results of the CAISO's completed transmission planning process ("TPP"). On March 23, 2012, the CAISO Board of Governors adopted the 2011-2012 Transmission Plan.[1] The standardized transmission assumptions used in this proceeding should be consistent with that plan. The transmission projects included in the plan and expected to be online within the planning period should be assumed irrespective of the status of CPUC approval. According to the Straw Proposal, one of the primary anticipated uses of the scenarios

[1] Available at http://www.caiso.com/Documents/Board-approvedISO2011-2012-TransmissionPlan.pdf.

developed in this proceeding is to inform the CAISO's next transmission planning cycle. It makes no sense to disregard the results of the CAISO's most recent transmission planning effort and generate scenarios which, in essence, propose that the CAISO start all over again in its next TPP.

The CPUC's review of transmission projects lags the CAISO transmission planning process, and the CPUC has only approved a subset of the transmission projects included in the CAISO's adopted TPP. Consequently, the Straw Proposal proposition of assuming only those transmission projects that have received the approval of both agencies means that more than half of the new transmission projects included in the CAISO's most recently adopted TPP will be removed from the transmission base case used in this proceeding.[2] Disregarding these CAISO-approved projects in this proceeding could significantly complicate transmission planning efforts and hinder the State's ability to reach its RPS and AB32 objectives of 33% renewables by 2020:

1. This assumption will create a starting base case with a transmission system that could be insufficient to support the load growth and resource additions. It will require that within the next TPP cycle, the CAISO and the participating transmission owners (PTOs) redo the planning work and transmission studies and that have been completed over the last few years. Because the transmission projects that have not yet been approved by the CPUC are typically the more complicated ones, the transmission planning studies to support such projects will likely be more involved. Based on the CAISO's TPP schedule, the earliest that a new transmission plan can be approved by the CAISO Board is March 2014. Adding to this date the lead time for permitting, engineering, procuring and construction, the expected operation date for projects approved in that new transmission plan will likely be past 2020, which means that this transmission will not be completed in time to support achievement of 33% renewables by 2020.

2. This assumption may delay completion of other planned transmission. The design of transmission projects assumes prior approved transmission projects. Removing transmission projects already approved by the CAISO could therefore cause redesign of other projects, or otherwise impact their timing and operation, in addition to resurrecting transmission problems that were to be resolved by the removed transmission projects. This will add more uncertainty to the plan for other transmission projects that may depend on the development of the removed transmission projects.

3. To meet the operating dates for projects approved by the CAISO but not yet approved by the CPUC, the utilities may have already started the environmental and other studies in preparation for submitting an application for the project CPCN. If the project is removed, the utility may suspend, delay or revise the costly and time-consuming studies needed to support the CPCN application, particularly if there are uncertainties about how the cost of these studies will be

[2] The Straw Proposal does not distinguish policy and generation interconnection-driven transmission projects from reliability-driven transmission projects. (P. viii). This comment assumes the Straw Proposal is addressing only the former types of transmission projects; not those which the CAISO has approved to meet reliability needs. The problems LSA describes in these comments could be even more acute if the Straw Proposal requirement for approval of both agencies applied also governs whether reliability-driven transmission projects are included in the base case planning assumptions.

recovered. Delays in the studies may result in delays in the submittal of the CPCN application, and in the completion of projects that may be required for the state to achieve 33% by 2020.

Accordingly, LSA strongly recommends that all the transmission projects included in the most recently adopted CAISO TPP be assumed as part of the base case standardized planning assumptions. Incorporating the results of the CAISO's completed TPP should also assist the CPUC's transmission permitting processes, which the Straw Proposal identifies as an additional objective, by enabling a comprehensive examination of consequences of the approved CAISO transmission plan for California's energy future. As part of the supporting data for a CPCN application for a particular transmission project, the CAISO and utilities can perform sensitivity studies to cover the case where the transmission project is not constructed. Unlike the Straw Proposal's approach of assuming away all of the transmission projects without CPUC approval, such sensitivity studies can be specifically tailored to satisfy the requirements of the CPCN application at hand.

15. Should all "known" and "planned" (non-RPS) resources be used in all supply-side scenarios?

Since "known" additions are defined as resources under construction, LSA believes it is appropriate to assume them in all supply-side scenarios. However, "planned" resources should be discounted for the possibility of project failure in a manner similar to that used for RPS resources with approved contracts but not yet under construction.

a. Are the definitions of "known" and "planned" clear?

Note: **At the workshop, "planned" having a contract in place was clarified to mean "approved contract by the appropriate entity" (e.g. Muni approved or CPUC approved). Do you support this clarification?**

16. Deliverability

Note: **The previous assumption of deliverability assumed all resources were deliverable unless otherwise noted.**

While LSA believes it is appropriate to use this proceeding for development of better analysis of the options for providing generic capacity as the Straw Proposal states, LSA does not support the Straw Proposal's suggested standardized planning assumption that resources be considered deliverable only if they "fit" on existing or CPUC approved transmission or provide "baseload" or "flexible" generation. This proposal is not consistent with the Straw Proposal's approach, which LSA supports, of building the expected renewable supply from a detailed, contractual focus on the load serving entities' actual RPS procurement portfolios, and of accounting for "sunk decisions."

The Straw Proposal anticipates that the residual RPS net short will be small, and that states that "there is limited flexibility for significantly altering the 33% RPS procurement direction within a ten year forward timeframe, even accounting for contract failure." (P. xix). LSA understands that few of the existing RPS

procurement contracts are energy-only. The standardized planning assumption for deliverability should be consistent with terms of the existing, CPUC-approved agreements. Accordingly, LSA recommends that the "expected" renewable supply be assumed to be deliverable. Further, as discussed previously, LSA believes that the standardized planning assumptions for transmission should be consistent with the CAISO's adopted transmission plan, irrespective of the status of CPUC approval. Thus, if the basic Straw Proposal approach is followed, renewable resources should be assumed to be deliverable if they fit on existing or new transmission included in the CAISO's most recently adopted TPP.

However, the Straw Proposal's suggested assumptions for deliverability raise numerous implementation questions that require further consideration, as CPUC Energy Division staff acknowledged at the workshop. These questions include the following:

- "Fits on existing transmission." It is unclear how a resource would be determined to "fit" on a transmission line. It is not possible to know the proportion of electricity from a resource that will flow through a certain line without a reasonable technical study. For example, the energy from a planned 100 MW resource to be connected at Colorado River Substation could potentially flow through multiple transmission paths, including West of Devers, a project approved by the CAISO but not yet by the CPUC. In the absence of a technical study, there is no reasonable basis to assign the project's energy flows among the various potential paths and therefore no reasonable basis to determine if the project "fits" on existing or assumed transmission. In response to a similar question asked during a CAISO stakeholder meeting, the Energy Division representative stated that the project "fit" would be based "from a simple assessment - not from power flow study." Such an approach is insufficient. The "fit" determination could determine if a resource will be included in the renewable portfolios or if a new transmission line is needed. It would not be fair or reasonable to make these determinations, which could have significant impacts on individual projects, on the basis of a simplistic and highly unreliable assessment.

- What is the definition of "baseload" resources? Will it be determined by technology, performance or some other measure?

- What is the definition of "flexible" resource? Is this the same or related to an ongoing initiative at the CAISO? What are the performance criteria that need to be satisfied for a resource to be considered as flexible?

- It is unclear how a baseload or flexible resource can be deemed to be deliverable if that resource is located in a transmission-deficient area. Does this proposal contemplate new transmission will be assumed for any transmission study group that includes baseload or flexible resources? If so, what is the justification for treating baseload and flexible resources differently from other resources? Such an approach could also result in unintended and inappropriate outcomes in interconnection studies that use the cluster approach, as it would create a perverse incentive to join groups that contain baseload or flexible resources.

- It is unclear how "energy only" resources are proposed to be reflected in the planning studies. "Energy only" resources are modeled in the CAISO Deliverability Study at 0 MW generation, meaning the resource may not be counted upon to support the peak load. As written, the proposal could be interpreted as assigning a 0 MW generation during peak periods for other types of

transmission and resource planning studies as well. However, even though "energy-only" resources cannot be counted on to support the peak load, they can still generate at the time of system peak. Representing them as generating 0 MW would skew transmission planning study results and under-plan the system for reliability unless such "energy only" project are assumed not to generate at the time of system or local peaks. Such an assumption would be valid only if the CAISO changes its current operating practices and these "energy only" projects are curtailed before other resources during constrained peak periods.

a. Are any changes to the definition of future resources considered deliverable warranted?

As stated in the previous response, LSA is concerned that treating all future resources as "energy only" would be inconsistent with procurement commitments for expected resources. Thus, we believe that the Commission should ensure that expected resources are modeled as fully deliverable. This modeling approach will ensure consistency with existing contractual commitments and planning efforts to date.

LSA is not opposed to exploring the deliverability requirements for future resources and how these requirements would affect the build-out of the transmission system. Looking at these differences may be more appropriate over the 20-year timeframe, where more flexibility is available and the policy signals can be sent in advance of contractual commitments.

b. How should information from other sources, such as distribution resource deliverability be incorporated?

17. What additional information is needed for resource locations?

18. Event-Based Demand Response

The final planning assumptions should contain a definition of the term, "Event-Based Demand Response", in order to avoid future confusion as in on-going discussions of resource planning and transmission planning. The term, "Event", is also used in NERC Standards and the TPP to describe sudden loss of transmission elements, for which corrective action must be taken within cycles (60 cycles=1 second) of the "Event". Since even demand response (DR) resources with the shortest activation time in the current DR program would typically be about 30 minutes, unless the DR is designed to be activated before the "Event", it would not be effective for transmission planning-type requirements. However, for the DR to be activated in anticipation of an "Event", that DR must be in place in anticipation for every potential system condition that might need it, e.g., when power flow on a

line exceeds a certain pres-set threshold, which is not necessarily at the time of system peak. Therefore, "Event-Base Demand Response" should be defined.

19. Incremental combined heat and power (supply-side)

Note: **CHP is split between demand-side and supply-side. See demand-side values for incremental CHP assumed behind the meter.**

a. What capacity factor is appropriate to use?

20. Renewable Resources

a. Establishing the 33% RPS infrastructure target via the LTPP, understanding that other requirements may also need a similar calculation within the RPS proceeding.

b. Establishing the RPS supply (i.e. the "highly likely resources") in the RPS proceeding.

LSA strongly supports the concept of using the information developed in the RPS proceeding to establish the "expected" or "highly likely" renewable resources assumed in the scenarios created in this proceeding. As discussed above, LSA believes that the California energy agencies' planning processes should build upon one another and incorporate the results of completed efforts. The projects contracted as part of the CPUC's RPS procurement process should form the basis of scenario development for planning focused on the next decade and achievement of 33% RPS. As the Straw Proposal notes, within this timeframe, much of the generation to meet the RPS 33% goal has been contracted. The power purchase agreements are one of the key indicators of the likelihood of an individual project proceeding and should be used as a primary input for scenario development in this proceeding.

LSA has been deeply concerned about the manner in which prior planning efforts have favored generic over actual projects with contracts, commercial developers and viability screenings. Assuming that unknown generic projects will prove to be less expensive or better than known actual projects has been a destabilizing strategy for both planning and the renewables market. Drawing on the RPS proceeding to develop a detailed, contractually- based set of renewable resources that will be assumed in all scenarios offers a promising way of remedying the over-reliance on generic resources in prior planning proceedings. Doing so will also allow much greater consistency in the "renewable net short" used in the two proceedings. However, the utilities appear to take divergent approaches in their RPS procurement

plans in determining the expected renewable resource development. LSA is pleased to see that the Straw Proposal contemplates development of a standard method for the LSE-specific expected renewable supply, and looks forward to participating in the anticipated workshops.

c. Base Portfolio

LSA supports development of a "'base' portfolio designed to be a best guess of future RPS development." As discussed above, LSA also support development of an "expected" set of renewable resources assumed in all the portfolios based on information drawn from the RPS proceeding, and filling out the "renewable net short" based on cost. While "net market value" is in concept an appropriate yardstick for cost, LSA has not had adequate opportunity to understand how transmission and distribution costs will be determined for specific projects, and believes that additional explanation should be provided beyond the reference to a tab in the 33% RPS calculator. LSA does not support excluding capacity value for variable resources with approved contracts on the assumption they will be energy-only, as discussed above regarding the proposed deliverability assumption. LSA does not oppose the concept of basing technology costs on the RPS Quarterly Report, but wishes clarification on the vintage of the underlying data and the precise way in which the costs will be calculated and updated to overcome the time lag built into the publicly available cost data presented in that report. In addition, LSA is concerned with any assumption that technology costs will remain static. At minimum, as discussed further in response to Question 28, sensitivity cases should be performed to evaluate the implications of technology progression and changes in costs.

In the event the RPS proceeding does not support the timely development of an "expected" set of renewable resources, the starting point for the back-up base scenario should be the commercial interest scenario proposed for the 2012-2013 CAISO transmission planning process, consistent with the May 16, 2012 revised base case and alternative scenarios, with opportunity provided for party comments and updates.

d. High DG Portfolio

LSA supports consideration of a "high DG" portfolio in addition to the base portfolio. As discussed above in response to sub question c, LSA does not understand how transmission and distribution costs are proposed to be calculated in determining the "net cost" or "net market value" for individual projects, and requests further explanation.

e. Sensitivities

LSA supports consideration of a sensitivity portfolio based on a preference for siting renewable projects in preferred locations reflecting the state's environmental planning efforts, such as the Desert Renewable Energy Conservation Plan (DRECP). LSA notes, however, that the DRECP is not final, and that preliminary information derived from it will likely need to be updated as work on the DRECP progresses. LSA has not had sufficient opportunity to review the specific manner in which the environmental sensitivity scores were calculated or applied, and reserves comment on these matters. However, LSA endorses the concept of assigning low scores to generation projects that already have their primary

environmental permits, since project-specific environmental analysis reflected in an issued permit provides the best available information about a project's environmental impacts. In addition, LSA notes that the proposed "environmental" sensitivity will not provide a complete picture of the potential environmental consequences of alternative renewable portfolios, particularly for air and greenhouse gas (GHG) emissions. These should be assessed for each alternative portfolio, taking into account each portfolio's integration requirements.

LSA also suggests that a sensitivity study be performed for the high DG case to examine how weather patterns will impact the generation from the DG resources. Such a study will provide information for transmission planning purposes consistent with the existing requirement to plan for transmission requirements assuming loss of the most influential generating unit in the area.

f. Long-term Target

The long-term target for renewable development should be consistent with the state's GHG goals.

21. Retirements

a. How many retirement assumption combinations are needed? If more than one, please list the top two most important retirement assumptions to consider sensitivities on.

22. **Are there any significant supply-side assumptions that have been missed? If so please identify, provide sources, and the MW and GWh (if appropriate) magnitude and likelihood.**

23. What is a reasonable number of overall scenarios for supply-side assumptions? What is the purpose behind having that number of scenarios?

In general, LSA concurs with development of a renewable base scenario built around the expected renewable resource supply and a high-DG renewable scenario, with a sensitivity case considering preferred locations consistent with environmental planning initiatives, for the detailed integration studies and planning performed for the 2012-2022 period. The multiple renewable portfolios considered in the 2010 LTPP seemed to slow and complicate the integration studies and other analysis, and yet in the end reveal few significant differences.

24. Other comments on supply-side assumptions.

Allocation Methodologies

If another allocation methodology is appropriate, parties are encouraged to provide it. It is also appropriate to suggest alternative methodologies to be used in a subsequent LTPP if they may require significant development.

25. **Energy Efficiency**

26. **Demand Response**

27. **Other methodologies for assigning resources to busbars.**

Other

28. **What is a reasonable number of total scenarios + sensitivities to consider?**

    a. **Briefly describe the scenarios and sensitivities that are most important to consider. Please refer to the assumptions discussed above to describe and explain this recommendation.**

Please see LSA's comments in response to Question 23. While the scenarios and sensitivities for the next ten years should be shaped by existing commitments and "sunk" decisions, the outlook over a twenty-plus year horizon is less constrained and should focus on options for achieving the state's climate change goals that include technology progression on both demand (e.g., smart grid, electric vehicle expansion, energy storage) and supply (e.g., Department of Energy SunShot Vision cost projections[3]) fronts.

29. **Any other comments.**

[3] http://www1.eere.energy.gov/solar/sunshot/vision_study.html