

STATE OF MAINE
PUBLIC UTILITIES COMMISSION

CENTRAL MAINE POWER COMPANY and
PUBLIC SERVICE OF NEW HAMPSHIRE

Request for Certificate of Public Convenience and
Necessity for the Maine Power Reliability Program
Consisting of the Construction of Approximately
350 Miles of 345 kV and 115 kV Transmission
Lines ("MPRP")

Docket No. 2008-255

**BRIEF OF
GRIDSOLAR, LLC**

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1. SUMMARY OF POSITION

On July 1, 2008, Central Maine Power Company (“CMP”) filed a petition seeking a Certificate of Public Convenience and Necessity (“CPCN”) from the Commission for approval to invest approximately \$1.5 billion in a major upgrade of its bulk power system transmission facilities (“MPRP”). The Commission must deny this petition for reasons summarized below and discussed more fully in this Brief.

The threshold requirement for the issuance of a CPCN is a finding by the Commission of “public need” based upon evidence presented by the petitioner. CMP has failed to demonstrate credible evidence that a need for the full MPRP exists. The two pillars on which such need is based – peak load forecasts and system stress conditions - cannot support the burden of proof CMP is required to bear. The MPRP peak load forecast has been shown to be grossly exaggerated to the point where conditions CMP projected to occur in Maine by 2017 are now forecasted to occur no earlier than 2028, well outside the 10-year transmission planning horizon. And, the MPRP models of system stress conditions presume unprecedented and unreasonable – to the point of being extreme – stresses on CMP’s grid.

Using more reasonable peak load growth forecasts and system stress conditions, and by judiciously installing relatively inexpensive non-transmission line equipment in certain localized load pockets, the Commission Staff has found a much lower “need” for transmission upgrades, amounting to well less than 50% of the \$1.5 billion proposed by CMP. This lower level of need is reasonable, based on the record evidence in this case, and should be found so by the Commission.

The Commission’s obligation, however, does not stop here. Having found that a need exists, the Commission must examine alternatives and must find that the transmission line is

reasonable in comparison to such alternatives. As required by Maine law and Commission rules, CMP submitted a Non-Transmission Alternatives (“NTA”) study performed by LaCapra Associates. This NTA study – which defined and evaluated a limited set of non-transmission solutions to the full MPRP as originally proposed by CMP – is deeply flawed and falls well short of the legal requirements to obtain a CPCN. For example, at no time did LaCapra or CMP examine non-transmission solutions based on lower need levels such as those defined by the Commission Staff. Further, the NTA study did not consider viable non-transmission alternatives such as battery storage systems, solar PV or hybrid solutions, significantly underestimated demand resources and did not account for planned infrastructure in the region that is likely to come on-line in the next 10 years; has multiple methodological errors such as imputing value to transfer capability in a manner that is inconsistent with CMP’s assertion of line loss savings and that are biased against non-transmission solutions; and failed to take into account cost savings non-transmission solutions will generate on CMP’s non-bulk power, non-PTF and distribution systems and therefore is biased. Based on these facts – which are not in dispute – the Commission cannot rely on this NTA study to find that the MPRP is reasonable in comparison to alternatives.

Even if the Commission is somehow able to disregard the failings of the NTA, a second fundamental problem arises. The non-transmission solutions are all less costly than the MPRP. CMP asserts that total cost is not the appropriate criterion and that since ISO-NE rules allow the costs of transmission solutions to be spread across the entire New England region but do not permit the same accounting treatment for the costs of non-transmission solutions, the relevant standard for comparison is the cost to Maine ratepayers. On this basis, CMP argues, the MPRP is less costly.

The difficulty with this argument is that it requires the Commission to repudiate findings of fact that it made less than a year ago in its orders in Docket 2008-156, during the time when the MPRP was also before it. As a result of an exhaustive assessment of ISO-NE rules, performance and governance, the Commission found, among other findings, that the manner in which ISO-NE allocated the costs of transmission reliability upgrades such as the MPRP was not in Maine's best interest. In addition, it adopted the conclusion of a study undertaken by the Brattle Group that found that over the longer term, socialization of transmission costs will cost Maine ratepayers more than if these ratepayers bore the full cost of the MPRP but no allocated share of other transmission projects in the region. These findings of fact were so powerful that the Commission specifically ordered CMP not to execute any new agreement with ISO-NE. None of these findings of fact or, for that matter, any other findings of fact listed by the Commission in that case have been changed in any manner since they were made. Yet, with the MPRP, CMP is asking this Commission to overlook its findings and orders in 2008-156 before the ink has even dried.

It need not do so, however. The CMP (LaCapra) NTA study is not the only alternative presented in this case. GridSolar, LLC presented the GridSolar Project as an alternative to the MPRP. As discussed in four thorough and detailed submittals, the GridSolar Project represents a very different vision of the electric grid of the future – a vision based on the concepts of distributed renewable generation, conservation and demand response and a Smart Electricity Grid. Rather than expand the transmission system meet peak load requirements with remotely-generated electricity, the GridSolar Project would provide needed additional peak capacity using distributed solar generation located proximate to demand in combination with back-up generation and investments in a smart electric grid to promote energy efficiency and demand response.

In its initial filing, GridSolar demonstrated that the GridSolar Project was technically feasible and, based on the level of need initially defined by CMP, would cost significantly less than the full cost of the MPRP. GridSolar filed a Supplemental Filing in September 2009 that demonstrated additional benefits of the GridSolar Project, including that it would create more jobs than the MPRP. A Second Supplemental Filing was made in October 2009 based on the lower levels of need resulting from a lower peak load forecast and more reasonable stress conditions. This filing showed that the GridSolar Project is less costly to Maine ratepayers than the MPRP, even after allowing for the cost socialization of the MPRP. It also described how the GridSolar Project would become the foundation of a smart electric grid in Maine and provide significant additional benefits to Maine ratepayers. Finally, in its Surrebuttal Filing, GridSolar showed that the cost to Maine ratepayers of the GridSolar Project is even lower when the benefit of avoided non-bulk power, non-PTF and distribution system upgrades made possible by the GridSolar Project are included in the evaluation. GridSolar demonstrated that with these savings included the GridSolar Project is less than 50% of the costs of the MPRP, resulting in a net present value savings to Maine ratepayers of more than \$300 million over the next 10 years.

These facts cannot be ignored by the Commission. All parties agree that the GridSolar Project will work and that it will meet reliability requirements; not a single party has challenged GridSolar's ability to develop, manage and operate the GridSolar Project as required; the OPA's witness has confirmed the economic viability of the GridSolar Project; and all parties agree that the GridSolar Project will save Maine ratepayers money by avoiding expensive upgrades to non-bulk power, non-PTF and distribution systems necessitated by future load growth. Only CMP has raised any challenge to the GridSolar Project and that

challenge related to the costs of solar PV systems and interconnection costs. Neither of these challenges was able to withstand cross-examination.

Based on this record, the Commission simply cannot find that the MPRP is “reasonable” compared to the GridSolar Project alternative, and therefore must deny CMP’s petition for a CPCN for the MPRP.

Such a denial, however, does not end the case. The Commission must still address the lower level of need identified by its Staff, as it has a paramount obligation to protect the health and safety of Maine residents. To do so, the Commission must implement the GridSolar Project as the best alternative to the MPRP, and must do so through an order requiring CMP to enter into a Commission-approved contract for grid reliability services with GridSolar.

2. Legal and Regulatory Framework

2.1. The Commission Cannot Abrogate Its Responsibility Under Maine Law by Deferring to ISO-NE and CMP on How to Balance Economics, Safety, Reliability and Alternatives

In the entire federal, state and regional transmission planning process there is but one place where the interests of Maine ratepayers are protected and where the full suite of impacts from new transmission projects and alternatives to new transmission projects is considered. That place is the Maine Public Utilities Commission. *See* 35-A M.R.S.A § 3132(6)(“ In determining public need, the commission shall, at a minimum, take into account economics, reliability, public health and safety, scenic, historic and recreational values, the proximity of the proposed transmission line to inhabited dwellings and alternatives to construction of the transmission line, including energy conservation, distributed generation or load management.”)

The Legislature has placed upon the Commission an enormous responsibility to protect Maine ratepayers from excessive transmission investments by directing it to balance reliability, safety, economics and other factors, and to ensure that transmission is not given preference over conservation, distributed generation and load management. Before it may issue a CPCN to all or part of the MPRP in this case, the Commission must determine that the basis on which the CPCN is granted strikes an appropriate balance between economics and reliability, and explain that balancing through “specific findings.” 35-A M.R.S.A § 3132(6). It must further issue “specific findings” determining that there are no alternatives to construction of the transmission line (e.g., conservation, distributed generation or load management) that would strike a better balance, including considerations for public health and safety and historic and recreational values.¹ *Id.*

These are precisely the findings that rational policy making demands, and among all the parties in the transmission planning process, only the Commission is directed to make such a determination. It may not abrogate this mission by deferring to ISO-NE or to CMP.

3. Determination of “Need”

3.1. CMP’s Needs Assessment Exaggerates both the Magnitude of and Urgency for Need for Transmission Upgrades to Meet NERC Reliability Standards

Chapter 330 of the Commission’s Rules provides that the Commission shall issue a CPCN upon a finding that a “public need for the proposed transmission line exists.” *See also* 35-A M.R.S.A §3132(6). The Commission noted in its order in Docket 2006-487 that “need” is established by balancing economics, safety and reliability, “but the statute and rule do not

¹ All findings must be supported by substantial evidence in the record, and when the commission abuses its discretion or when its decision is “unreasonable, unjust or unlawful in light of the record,” its orders will be vacated. *Dunn v. Public Utilities Comm’n*, 890 A. 2d 269, 270-71 (ME. 2006).

provide much guidance on how to balance economics, safety and reliability or how to determine whether transmission service is safe, reasonable and adequate.”²

“Balancing” is an act that, at its core, requires reasonableness.³ *See Dunn v. Public Utilities Comm’n*, 890 A. 2d 269, 270-71 (ME. 2006) (when a commission decision is “unreasonable” it will be vacated by the courts). The electric grid cannot be so reliable and robust that the price of electricity becomes crippling for businesses and consumers that rely on it; planning assumptions regarding load cannot be so aggressive that they result in excessive and unnecessary investment in transmission facilities; and operating parameters cannot be set so far outside the range of actual experience that they move from the realm of possibility to that of extreme improbability.

ISO-NE, however, is not constrained by its need to balance competing objectives. As the Commission noted in Docket No. 2008-156, the “ISO-NE objectives do not include ensuring that costs are reasonable or the need to choose the most cost effective alternative. Thus, cost containment is not a part of the ISO-NE review process.” (*Order*, Docket 2008-156, Jan.16, 2009, at page 48.) In a subsequent Order in the same docket, dated June 30, 2009, the Commission again expressed its concerns with respect to ISO-NE’s consideration of costs:

We judge the efforts to reform the ISO-NE governance process as only a partial success and ISO’s approach to reform to be somewhat disappointing. While ISO-NE did agree to a mission statement that included cost considerations, their ‘cost-effectiveness language is weaker than the alternative Joint Commission Proposal which would have required ISO to actually identify alternative solutions to a problem being addressed and to choose the one which addressed the problem at the lowest reasonable cost.

² *Order*, Docket 2006-487, at page 8.

³ “Reasonably stressed conditions are those severe load and generation system conditions which have a reasonable probability of actually occurring.” Staff Bench Analysis, at page 23, quoting ISO-NE Planning Procedure 5-3.

(*Order*, Docket 2008-156, Jun. 30, 2009, at page 18.)

This singular focus on reliability to the exclusion of the costs of electricity to consumers is echoed in the compensation schemes adopted for ISO-NE employees, where no weight is given to the market price of electricity or the cost of the transmission system. (ODR-12-15.)

In light of this, it is not surprising that at each step in the ISO-NE needs assessment and planning process, where a reasoned decision is required, ISO-NE repeatedly and consistently takes an extreme position that results in the most aggressively pro-transmission expansion reading possible. This bias in the process has been incorporated and even extended by CMP in performing its needs assessment, which includes the following errors and unreasonable assumptions:

- Peak Load forecast based on exaggerated load forecasts and on 90/10 weather conditions;⁴
- Load forecast that incorporates contract maximum loads for large paper companies rather than the coincident peak methodology used for all other customers; (Tr., 2/5/10, pages 189-191.)
- Treatment of generating facilities with multiple generators as a single “generator”, an approach that exaggerates threats of outages;
- Assuming simultaneous outages of two major generating facilities in a region during peak load conditions;
- Overly stringent thermal and voltage limits;⁵ and

⁴ A more thorough assessment of this matter is contained in the Staff Bench Analysis, October 26, 2009, which GridSolar endorses and hereby incorporates by reference.

⁵ *See id.*

- Arbitrary exclusion of existing demand resources, including even demand response resources that have cleared the ISO-NE forward capacity market, from the needs assessments. (Fagan Surrebuttal Test., pages 11-12, note 7 and pages 22-23.)

Each of these factors taken alone pushes the limits of reasonableness; the compounding effect of all of them is to posit conditions on the bulk power system that are well beyond extreme and therefore well beyond reasonable planning assumptions. As a consequence, CMP has severely exaggerated the amount of transmission investment necessary to ensure reliability of the bulk power system and accelerated forward the year of need, i.e., the year in which investments must be made.

3.2. CMP's Peak Load Forecasts for the MPRP Are Severely Inflated and Have Been Proven False by Recent Events

The extreme stress conditions are exacerbated by CMP's peak load forecast. Each of the parties that has reviewed the CMP load forecast has reached the same conclusion – that the CMP Needs Analysis is based on a load forecast that is a gross overstatement of future peak loads. As noted by the Staff in its Bench Analysis, the overstatement of loads “render the MPRP TNA questionable at best” and “[B]ecause load levels are a significant driver for transmission need, the use of excessively high loads in the MPRP TNA is likely to overstate the level and accelerate the timing for transmission investment.” (Staff Bench Analysis, Oct. 26, 2009, at pages 14-15.)

CMP has revised its load forecast three times since the forecast that was used to support the MPRP. Each time the result was the same – lower actual loads than previously forecasted and reductions in future forecasted loads. For example, CMP's 2006 forecast

projected a 2009 summer peak load of 1,885 MW on a 90/10 basis. Its January 2009 forecast showed a 90/10 peak load of 1,729, fully 8.3% below the MPRP level.

This reduction, however, failed to anticipate the actual peak load experienced in 2009. Adjusted for 90/10 weather conditions, this peak was 1,625.5 MW, an additional 6% below the January 2009 forecast and 16% below the load level on which the MPRP is based. (ODR-12-57 and EX-09-02 Supplemental.)

Even CMP's most recent forecast, issued in the Fall 2009, was inaccurate the moment it was issued. In large part, this is because the CMP load forecast is tied to an economic forecast prepared by Global Insight that contained an overestimate of economic activity for 2009-Q2. This overestimate is because the U.S. government revised its own forecast from a 3.5% growth to a 2.8% growth and subsequently to a 2.2% growth for this period. (Global Insight used a growth rate of 3.6%.) As John Davulis noted:

MR. DAVULIS: The testimony was completed prior to that. It (the November revision to 2.8%) did come out as we were reviewing the final draft of the testimony and we didn't change it.

DR. SILKMAN: So it's not -- but basically neither of those revisions -- obviously the one today would never be reflected but the other one was not reflected either?

MR. DAVULIS: That's correct.

(Tr., 12/22/09, pages 212-213; *see also*, GridSolar Surrebuttal Test., Feb. 2, 2010, page 20, lines 20-26.)

By its own acknowledgement, load forecasts used by CMP in its needs assessment for the MPRP are wrong and grossly over-inflated. The Staff load forecast (which is confirmed by GridSolar) demonstrates this very clearly:

Figure 4
90/10 Summer Peak

<u>Year</u>	<u>CMP Fall'06</u>	<u>CMP '09</u>	<u>Actuals with Projected Growth Rates</u>
2007	1,869.6	-	-
2008	1,845.4	-	-
2009	1,885.7	1,729.0	1,625.5
2010	1,925.8	1,733.9	1,646.6
2011	1,960.8	1,759.6	1,668.0
2012	1,999.5	1,783.6	1,689.7
2013	2,038.9	1,810.0	1,711.6
2014	2,079.1	1,842.9	1,733.9
2015	2,120.1	1,885.5	1,756.4
2016	2,161.9	1,931.5	1,779.2
2017		1,978.0	1,802.3
2018		2,028.5	1,825.8

(Staff Bench Analysis, Oct. 2009, at page 17.)

The Staff's 90/10 load forecast shows a reduction in peak load of 382 MW – 21.5% - for 2016, as compared with the CMP load forecast that is the basis for the MPRP, and by extension the Non-Transmission Alternatives study. This has enormous consequences with respect to the need for the MPRP; more importantly, it completely redefines the scope and timing of the need for NTAs by reducing by almost 50% the amount of NTAs necessary and by pushing the need for those NTAs ten years into the future. Further, since even the lowered

Staff forecasts and the most recently issued CMP forecasts do not incorporate significant downward revisions in the condition of the U.S. economy, they are out-of-date and cannot be used by the Commission as any indication of the “need” for the MPRP.

Based on the above flaws, the Commission should determine that CMP has failed to meet its burden to demonstrate, based on substantial evidence in the record, a public need for full build out of the MPRP. *See Bertl v. Public Utilities Comm’n*, 2005 ME 115, ¶ 7 (Commission decisions must be supported by substantial evidence on the record”); *cf. New England Tel. & Tel. Co. v. Public Utilities Comm’n*, 448 A. 2d 272, 278 (Me 1982) (utility has burden to prove rate changes are just and reasonable).

To the extent that some increased investments to improve the reliability of CMP’s electric grid are deemed prudent and necessary – such as those needs recommended by the Commission Staff in its October 26, 2009 Bench Analysis – GridSolar has shown on the record that those limited needs can be better met by the GridSolar Project, which will provide the same or better reliability, at lower costs to Maine ratepayers, and with fewer environmental or societal impacts.

4. Cost Comparisons of Alternatives

4.1. The Non-Transmission Alternatives Analysis Performed by LaCapra Associates Is Fundamentally and Fatally Flawed and Fails to Meet the Legal Requirements of 35-A M.R.S.A Section 3132(6)

Pursuant to the statute and rules, *see* 35-A M.R.S.A § 3132(2-C), (6), and PUC Rules, ch. 330, § 6(I), CMP provided an analysis of Non-Transmission Alternatives (“NTA”) to the MPRP that was performed by LaCapra Associates. Unlike the attention that has been paid to the MPRP, however, the LaCapra NTA analysis has received very little to no scrutiny by the Commission Staff. As stated in its Bench Analysis, “Staff believes the record will be well-

developed on NTAs, and at this point in the case, Staff is not presenting any of our own analysis on the issue of NTAs.” (Staff Bench Analysis, Oct. 26, 2009, at page 43.) This was in October 2009. Since then Staff has not performed any analysis on NTAs that has been subject to review by the Parties:

MR. CUNNINGHAM: Yes, we do. Good morning. My name is Greg Cunningham. I'm here on behalf of the Conservation Law Foundation. Can I refer your attention to pages 43 and 44 of the bench analysis? And I can -- I can read it to you. You'll probably recognize it. On those pages at the bottom, beginning with "Accordingly", the staff indicates, as part of its consideration of non-transmission alternatives in the bench analysis, concludes that, as it says, "The staff believes the record will be well developed on NTAs and at this point in the case the staff is not presenting any of our own analysis on the issue of NTAs." This was from October of 2009. Has the staff performed any additional analysis with respect to non-transmission alternatives since the bench analysis?

MR. COHEN: No. No, I mean, I -- other than I think there's been preparation for the hearings, but other than that, no, we haven't done that.

MR. BUCKLEY: Not any analysis that's worthy of being a bench analysis. We've read testimony, we've gotten prepared for hearings, and things like that. Some might call that analysis but –

(Transcript, 2/11, Pages 36-37)

The failure of Commission Staff to conduct its own analysis of the LaCapra NTA filing deprives the Commission and the parties of the expertise and judgment of the Staff on this critical issue.

Notwithstanding this gap in the Staff's analysis, other parties, including the OPA (through its consultant, Mr. Fagan) and GridSolar have identified extensive and very serious shortcomings, flaws and omissions in the LaCapra NTA study that render it wholly inadequate to meet the requirements of subsections 3132 (2-C) and (6). Indeed, the errors in the LaCapra NTA study noted by Mr. Fagan's testimony are so fundamental, that the entire study must be dismissed in its entirety.

LaCapra evaluated NTAs using the wrong criteria. LaCapra based its entire analysis on the original needs analysis performed by CMP. The use of significantly inflated and

accelerated needs set the bar for NTAs artificially high, prematurely and incorrectly excluded NTAs from full consideration and ignored the benefits of energy efficiency and those non-transmission alternatives whose costs are falling over time, such as the GridSolar Project. (GridSolar Supplemental Filing, Sept. 8, 2009, pages 12-16.) These flaws are so comprehensive and fundamental as to render the LaCapra NTA study worthless for purposes of reasoned analysis in this case. Nor did the Staff conduct an NTA study based on its significantly lower Needs Assessment, which shows much lesser need, and needs that occur further out in time. (Tr., 12/21/09 at page 159; Tr., 2/11/10, at page 36.) For this basic reason, the Commission cannot rely upon the LaCapra NTA study. However, the problems go even deeper, including the following fatal errors:

- LaCapra has not updated its NTA study to reflect the findings of a July 2009 FERC Report that shows substantial amounts of demand response resource potential in Maine, well in excess of the levels modeled in the NTA analysis. (Fagan Surrebuttal Test., at page 10.) In fact, LaCapra was not even aware of this most important study. (*Id.*, at page 12, note 9.)
- The NTA study did not include any consideration of battery storage, instead indicating that “Battery storage units were technologically immature and also very expensive.” (MPRP CPCN Exhibit I-3, page 42 of 464.) In fact, LaCapra was completely unaware of a major effort underway by Tokyo Electric Company to deploy Sodium Sulfide (NaS) batteries for reliability purposes on its grid that by 2006 had installed 160 MW. (Tr., 2/4/10, page 22-25.) This omission is very significant, particularly in light of the FERC’s decision in the Western Grid case to approve the use of NaS batteries of the type deployed by Tokyo Electric for grid reliability services and transmission cost allocation. Thus, not only does the record

show that a battery-based NTA is technologically mature and in use for reliability purposes, but also that the cost of this NTA could be eligible for socialization, which could reduce the costs of a battery-based NTA to Maine ratepayers by over 90%. By arbitrarily excluding this option, CMP has denied this Commission the ability to evaluate the full range of alternatives.

- The NTA analysis did not include any consideration of solar PV systems in excess of 100 kW, stating that "... PV solar ... were too small and would require a large number of units to meet the NTA needs." (MPRP CPCN Exhibit I-3, page 42 of 464.) LaCapra offers no explanation as to why a "large number of units" is problematic, but more importantly, based on data in its own report, LaCapra and CMP clearly knew that many multi-MW systems were being installed in the U.S. and worldwide at the time the NTA study was undertaken.⁶ Additionally, the solar analysis that LaCapra did perform is based upon a narrow selection of historic and out-of-date project costs and totally fails to account for the declining costs of solar installations. By arbitrarily restricting its examination to older PV installations and to very small PV installations, which are the most costly to develop, the LaCapra NTA study is incomplete and biased.
- The NTA analysis was not updated to incorporate the new HQ transmission line proposed through New Hampshire. (Tr., 2/4/10 at page 114.) This line will transmit at least 1,200 MW of low cost Canadian power into southern New Hampshire, which will lower energy prices in New England. The failure to include

⁶ In fact, the Lawrence Berkeley National Labs Study relied upon by LaCapra for information related to the cost of solar PV systems includes a table showing multiple projects in excess of 2 MW in the U.S. (See GridSolar Surrebuttal Testimony, Table on Page 38.)

the HQ line in the dispatch modeling performed by LaCapra results in an overstatement of the regional energy benefits of the MPRP.

- The NTA analysis did not include major new off-shore wind projects located off Cape Cod and Rhode Island. (Tr., 2/4/10 at page 117.) By omitting these projects from its model, LaCapra assumes that renewable energy portfolio requirements in New England will be met by major new wind projects north of the North-South Interface, that this will lower energy prices in Maine and that this will only happen if the MPRP is constructed. This assumption is false. If some or all of the proposed projects are built south of Maine, the need for wind projects in Maine to meet regional portfolio requirements will be reduced, as will be the need for additional transmission in Maine and any cost impact in Maine.
- The energy price benefits derived from the MPRP in the LaCapra model result from the utilization of the additional North-South Interface transfer capability of the MPRP. However, to the extent this transfer capability is being used, loadings on the lines must increase beyond what they are today, thereby eliminating all or a significant portion of the benefits CMP is claiming for the MPRP by being able to reduce line losses on its system. CMP cannot have it both ways – either the MPRP provides line loss reductions or it is used to bring cheaper power from Maine and Canada to the rest of New England. (Tr., 2/10/10, pages 235-240.)
- As explained in more detail in the next section, the NTA analysis arbitrarily and capriciously excludes the avoided costs of non-PTF and distribution system

investments that can result from distributed generation and load response but not from the MPRP. (Tr., 2/4/10 at page 103-107.)⁷

⁷ It does appear that the LaCapra NTA includes a limited allowance for avoidable distribution system costs, but only those that are avoided from investments in energy efficiency and not from other NTAs; however, there is considerable confusion about this matter and whether the manner in which LaCapra modeled this limited effect, if at all, is correct:

DR. SILKMAN: Now, is it your interpretation that that number in the La Capra study is a savings that results from doing energy efficiency because you're avoiding T&D costs that you would otherwise have to spend because of load growth?

MS. HUNTINGTON: Well, that's -- I think that's our understanding, but it's -- it's not based on any in-depth analysis on where those numbers came from but that's what we assume it is. But let me -- now that you -- now that you've asked the question, it appears that it -- it -- from the note that it could also include savings to customers from paying for less kilowatt hours on their T&D bill. So I guess it's not -- it may not be as clear as -- as how we initially interpreted it.
(Tr., 2/10/10, page 243.)

DR. SILKMAN: If you could call that demand response in response to a peak on the local circuit, would there be any difference?

MS. HUNTINGTON: If you could -- if you could reduce demand on the local system at times that were coincidence with the local peak -- that were coincident with the local peaks, I assume it could have a similar effect.

DR. SILKMAN: Okay. If it were to have a similar effect, and you could do that through a Smart Grid application, through metering and monitoring of circuits and you could do that, would the avoided T&D costs be simply the ratio of that 17.9 to 12.6 multiplied by 53 million? Would it be just proportionate to what you would get under energy efficiency?

MS. HUNTINGTON: I don't know. I don't know. Again, and I -- in part because I don't think we're sure what that avoided T&D cost number is.

DR. SILKMAN: Well, let's not worry a moment about what it is, but using the methodology that was used by La Capra, how would you figure out -- if you could, how would you figure out what the peak load savings multiplied by the Energy Maine avoided T&D rates were for the demand response component of the NTA, given what we just described as the demand response component having the same impact on peak load on the circuit and, therefore, the ability to avoid distribution costs as energy efficiency?

MS. HUNTINGTON: I'm not sure I could figure it out from these numbers. And again, what -- what caused me to be a little bit less certain about my initial interpretation of the numbers in the LaCapra study was the use of the term -- well, the way the calculation was done where they attributed the benefits to the energy efficiency at the full T&D rate which caused me to wonder whether they weren't trying to include customer benefits from -- from a lower T&D bill as opposed to avoiding costs, incremental costs, on the T&D system to serve that incremental load.
(Tr., 2/10/10, page 250-251.)

GridSolar requested in an ODR that this issue be addressed explicitly through additional analysis to avoid any confusion. LaCapra and CMP objected on the basis that such analysis would require considerable additional modeling and would take a lot of time. This is clear indication that the work has not been done. Hearing Examiner, Chuck Cohen, denied GridSolar's request indicating that "...they (LaCapra) basically said they didn't study it" (Tr., 2/4/10, page 126) and:

MR. COHEN: I -- I'm going to -- support the objection for -- and -- and it's not something that's been studied. They don't have it readily available. I think it -- it could not be accommodated in the timeframe of -- of the hearings and possibly without further discovery and analysis. So, Rich, I think you're point could go to the weight of the analysis and, certainly, further argument but in terms of a study at this point. (Tr., 2/4/10, page 128.)

- The Transmission Alternatives Study and the Non-Transmission Alternatives Study have different design parameters that result in an arbitrary bias against NTAs. (Tr., 2/11/10, pages 20-23.)

These wrongful assumptions, omissions, methodological flaws and other errors make the NTA study submitted by CMP wholly out-of-date, incomplete, arbitrary and biased. The evidentiary value of the LaCapra NTA is inconsequential. It provides no basis upon which the Commission can satisfy its obligation under Chapter 330(9) to find that “The proposed transmission line must be reasonable compared to other alternatives” or under 35-A M.R.S.A § 3132(6) “to take into account ... alternatives to construction of the line, including energy conservation, distributed generation or load management.” *See also id.* § 3132(2-C); *Dunn*, 890 A. 2d at 271 (Commission findings must be “reasonable” and “supported by substantial evidence in the record”); *Bertl*, 2005 ME 115 at ¶ 7 (same).

4.2. CMP’s Refusal to Provide the Information Necessary to Determine Potential Non-PTF and Distribution System Benefits to Maine Ratepayers That Would be Created by Implementation of Non-Transmission Alternatives Violates Statutory Requirements and Renders the NTA Analysis Arbitrary and Capricious

Throughout these proceedings, CMP has attempted to justify the MPRP based upon the economic benefits and costs to Maine ratepayers created by ISO-NE rules that socialize the cost of the MPRP, levying almost 92% of the cost upon the region and 8% on Maine ratepayers. GridSolar disagrees both with CMP’s cost justification and its conclusion that the MPRP is a benefit to Maine ratepayers. But even using the CMP methodology, CMP can only show an economic benefit of the MPRP compared to NTAs by using a double standard; it

includes cost savings to Maine ratepayers under ISO rules for PTF investments like the MPRP, while excluding cost savings to Maine ratepayers that NTAs will create on the CMP's non-PTF and distribution systems.

As described in GridSolar's filings and testimony, if located strategically, energy efficiency, demand response and distributed generation, will simultaneously avoid the need for investments at each level of the CMP system – PTF, non-PTF and distribution. Since non-PTF and distribution system costs are not subject to socialization under the ISO-NE transmission cost allocation system, they are paid solely by Maine ratepayers. These costs are substantial. The record shows that CMP's three-year local system plans include extensive local system upgrades in the same regions that CMP identified in its MPRP needs assessment. (See GridSolar Exhibit 6.) If done, an analysis based on the 10-year term of the MPRP and the peak load growth projected over this term would show further non-PTF and distribution system needs.

The failure to assess and include the benefits to Maine ratepayers of avoiding these non-bulk power system upgrade costs in the assessment of NTAs is, in and of itself, arbitrary and creates bias in the results. CMP's refusal to provide, after repeated requests, the documentation and data necessary to allow other parties to assess these savings is inexcusable and violates the rights of the parties to effectively participate in this proceeding, thereby rendering a Commission decision legally infirm. (Tr., 2/5/10, page 217; Tr., 2/12/10, pages 28-29; *see also supra* Section 4.1, note 7 and *infra* Section 5.4) GridSolar repeats its objection to the Examiner's refusal to order this assessment. By law, the Commission must make "specific findings" on public need based upon, among other items, the "economics" of the proposed transmission line and alternatives "including energy conservation, distributed generation or load management." 35-A, M.R.S.A § 3132(6). Without full and equal

consideration of all costs and all savings to Maine ratepayers, the Commission simply cannot perform the required comparisons necessary to make the required specific findings, and therefore is prohibited from making a finding of public need for the MPRP until it does so. *New England Tel. & Tel. Co.*, 448 A. 2d at 278 (Commission must follow legislative mandates).

5. GridSolar Project

5.1. The NTA Study Submitted by CMP is Incomplete, Inadequate and Biased, Which is Why GridSolar Filed Testimony and is Participating in this Case

While CMP has a statutory obligation to undertake a thorough and complete analysis of alternatives to any transmission line for which it seeks a CPCN, its financial incentives are all dramatically tilted toward a preference for a transmission solution. If this Commission awards a CPCN for the MPRP, and if CMP is able to obtain all of its environmental permits, CMP stands to earn both a substantial return on its investments and a FERC guaranteed premium. If the Commission finds in favor of GridSolar or another alternative, CMP stands to earn nothing, because the requisite work will almost certainly be undertaken by other parties on a cost pass through basis. Even the more than \$90 million that CMP has spent to date⁸ on the MPRP is likely to be recoverable in rates, regardless of whether the Commission issues or denies a CPCN for the MPRP in its entirety. CMP's economic incentives are perverse at best and compel that the Commission give the strictest scrutiny to CMP's flawed case.

⁸ CMP reported spending \$87,539,810 on the MPRP case (inclusive of the CPCN proceeding, the DEP permit proceeding and Real Estate assessments and acquisitions) through November 2009. (*See* response to ODR-12-46, January 8, 2010)

The fact that CMP's incentives are so heavily transmission oriented leads to one unavoidable conclusion – CMP cannot be relied upon as the sole source of information regarding the definition, scope, performance or costs of alternatives to the MPRP. As we note in this Brief, GridSolar has carefully reviewed and evaluated the Non-Transmission Alternatives study performed by LaCapra Associates on behalf of CMP and has concluded that it is incomplete, inadequate and biased, and therefore does not provide the Commission an adequate foundation for making the findings required of it under Maine law. These are not just GridSolar's findings, but are also those of Mr. Fagan, the OPA's expert witness on this matter. (Mr. Fagan, Surrebuttal Test., pages 2-3.)

To help complete the record with respect to alternatives to the MPRP, GridSolar developed a complete and well-documented non-transmission alternative to the MPRP. Had GridSolar not entered this case, the record would contain not a single alternative that includes even 1 kW of non-biomass renewable generation resources, despite repeated declarations by the State Legislature that the development of such resources is in Maine's best interests and a cornerstone of Maine's energy policy. (*See*, for example, 35-A M.R.S.A §§3210(1), 3210(C)(2), 3302 and 10103.)

5.2. The Commission Must Find that the GridSolar Project Will Meet the Reliability Requirements of CMP's Bulk Power System

GridSolar filed its proposed GridSolar Project in this case over a year ago. During this time, GridSolar has made scores of public presentations, including to ISO-NE at its Holyoke headquarters, that have described how the GridSolar Project will provide grid reliability benefits to CMP, and more generally the New England region. At no time has any party made any attempt to provide, let alone actually provided, any credible evidence that the GridSolar Project could not perform as intended or could not meet NERC reliability requirements for the

CMP bulk power system. This includes ISO-NE, CMP, Commission Staff or any other intervenor in this case.

In fact, the record demonstrates the viability of the GridSolar Project. Mr. Fagan, in his Surrebuttal Testimony, concludes, “Conceptually and technically, it [the GridSolar Project] is fundamentally sound.” (Fagan, Surrebuttal Test., page 48, line 8.) CMP performed its own evaluation of the GridSolar Project and reached a similar conclusion. On both “reliability compliance” and “reliability longevity” the GridSolar Project received identical ratings as the MPRP at the three load levels evaluated (1800, 2000 and 2200 MW). (GridSolar Test., 10/27/09, Exhibit – Second Supplemental 1.)

Finally, CMP witness, Mr. Stinneford, indicated that he had no reason to believe that the GridSolar Project would not work just as well as the so-called “Gap RFP” process instituted by ISO-NE to address a reliability problem in Southwestern Connecticut:

MS. STILMAN: You were here yesterday when ISO New England was talking about that problem in southwest Connecticut that they ran in to when they had to issue this gap RFP, and I somewhat -- not facetiously -- but mentioned that is sound an awful lot like grid solar. That is to meet a local reliability problem with in region-distributed generation backed up with demand response. Are you aware of any potential problems that ISO ran into, or not any potential, but any real problems that ISO ran into with that system during the four-year period when it was necessary to be there while transmission was being built?

MR. STINNEFORD: I’m not aware of any operational problems. I’m aware that there were a number of other problems associated with that whole process. It was very unpopular with generators in the region; it was [un]popular with a number of market proponents who felt that this was inconsistent with the market structure in the region.

MR. STILMAN: Uh-huh. No, and I understand those, but there were no operational problems that arose. There were no problems associate with having to respond to outage situation and cycles, for instance, that couldn’t be met with that arrangement.

MR. STINNEFORD: Not that I’m aware of.

MR. STILMAN: So to the extent that the result RFP process is similar to the system that Grid Solar is proposing you wouldn’t expect any problems to arise in Maine either, would you?

MR. STINNEFORD: Only the same problem that occurred in Connecticut, and that was that it was very expensive and Connecticut customers paid a great deal of money.

MR. STILMAN: And the generators wouldn't like it.

MR. STINNEFORD: And the generators would not like it.

MR. STILMAN: And we all know that's very important. If it didn't cost as much money, if for some reason it was able to be done a lot cheaper, would that solve some of these problems?

MR. STINNEFORD: It would hypothetically solve the cost problem, yes.

(Tr., 2/3/10, pages 237-238, with the note that both Ms. and Mr. Stilman is in fact Dr.

Silkman.)

Based on the record and the uncontested facts presented in support of the GridSolar Project's reliability benefits, the Commission must find that the GridSolar Project will meet NERC reliability standards in a manner that is comparable to or better than the MPRP.

5.3. GridSolar, LLC Has the Experience and Capability to Develop, Manage and Operate the GridSolar Project and Deliver Grid Reliability Services to CMP as Proposed

While the record is clear with respect to the conceptual and technical fitness of the GridSolar Project, CMP has raised the question of whether or not GridSolar has the ability to develop and operate the Project to provide the degree of certainty required under reliability standards. (GridSolar Test., 10/27/09, Exhibit – Second Supplemental 1.) This concern has been stated in only one place in all of CMP's volumes and volumes of testimony in this case, where Stinneford and Dumais state, "the suggestion by GridSolar that Maine can do without substantial additional transmission and substitute, on an unprecedented scale, some combination of solar and fossil "backup" generation, together with a "smarter grid," cannot withstand even cursory scrutiny." (CMP Rebuttal Test., page 14, line 11.) This dismissive attitude is wholly without support and is belied by the evidence in the record.

In point of fact, non-transmission alternatives that replace transmission with backup generation and a smarter grid do work very well, which is what LaCapra's NTA study demonstrated and what ISO-NE proved when it undertook the so-called "Gap RFP" process for southwest Connecticut. (Tr., 2/2/10, page 71 and page 208 - *see also* J. E. Phelps, "Final Report on Evaluation and Selection of Resources in SWCT RFP for Emergency Capability, 2004-2008." ISO-NE System Planning Department, Oct. 4, 2004.)

Relying upon distributed solar generation will not make the NTA solution more complicated. Quite the contrary, like energy efficiency, distributed solar generation will reduce the number of hours when GridSolar is called upon to manage actively the backup generation and demand response resources to ensure grid reliability. If parties other than GridSolar choose to install demand response or distributed solar generation on their own initiative, GridSolar can reduce either its own solar generation or its quantity of back-up resources, thereby reducing the cost of the GridSolar Project. On the other hand, if the MPRP is built and third parties elect to install significant quantities of solar generation or demand response, the MPRP investment will become a stranded cost. In this sense, the economic benefit of the GridSolar alternative to Maine ratepayers is clearly superior to the MPRP.

The GridSolar Project may not yet be implemented in Maine, but it is hardly untested. All of its component parts have well-established track records that are known throughout the industry:

- Distributed Solar Generation Facilities - As of the end of 2008, there were approximately 13,000 MW of grid connected solar PV facilities installed world wide.⁹ Approximately 1,000 MW of this capacity was located in the United States. These facilities range in size from a few kW's to multi-MW's. While there may be

⁹ See http://www.ren21.net/pdf/RE_GSR_2009_update.pdf p.24.

disagreement in this case as to the cost of constructing and interconnecting facilities of the type proposed by GridSolar, there is no question that it is possible to deploy and interconnect such facilities.

- Emergency (“Back-up”) Generation and Demand Response Resources (“DR”) – These are already well-recognized components of system planning in New England. ISO-NE’s efforts in recent years have led to the integration of DR into all aspects of the energy and capacity markets. As of January 4, 2010, ISO-NE had 2,292 MW of “Ready to Respond” DR, of which 532 MW were located in Maine.¹⁰ The 120 MW of DR required under the GridSolar Project through 2020 is far less than what is currently being provided to ISO-NE. Since GridSolar can offer payment in excess of that offered by ISO-NE, GridSolar anticipates no difficulty in attracting sufficient resources to meet its requirements.
- Metering and Monitoring – The metering of electricity flows on tie lines is well-established in the industry. The same metering technologies are now being deployed within utility service areas to monitor flows and power conditions on individual circuits. GridSolar provided information on Southern Company’s testing of direct circuit metering to determine need and to monitor for line outages within its service territory. Detroit Edison is currently deploying GridSense™ metering as proposed by GridSolar and trailer mounted distributed generation located at distribution system substations. There has been no testimony in this case to suggest that this component of the GridSolar Project will not perform as proposed by GridSolar.¹¹

¹⁰ See [http://www.iso-ne.com/genrtion_resrcs/dr/stats/enroll_sum/2010/lrp_as_of_2010_01_04.ppt#1990,3,Demand Response](http://www.iso-ne.com/genrtion_resrcs/dr/stats/enroll_sum/2010/lrp_as_of_2010_01_04.ppt#1990,3,Demand%20Response) (as of January 4, 2010)

¹¹ It is likely that type of metering and information systems proposed by GridSolar will also be useful to CMP in providing information on outages and recurring faults. We refer to an attached article by GridSense™

- Reliability Dispatch – As of November 2009, ISO-NE listed approximately thirty companies as Demand Resource Providers and six providers of Internet Based Communication Services (IBCS). The ISO-NE DR system is composed of ISO-NE, two different types of providers, and many end users. ISO-NE monitors loads and sends the signals for the Demand Response; the Demand Resource Providers receive the signal and send these on to their contracted end users; the IBCS providers monitor performance and provide information to all participants regarding performance, and ISO-NE provides compensation based on this data. This system ensures that the Bulk Power System in New England remains reliable during periods of peak loads and is now integral to ISO-NE operations and planning.¹²

The ISO-NE structure is actually more complex than that proposed by GridSolar because of the number of entities involved, the amount of information sharing implicit in ISO-NE structure and the relationship between the demand response programs and the Market Rules. Under the GridSolar Project, a single entity, GridSolar, monitors loads, sets the parameters for demand response, controls the dispatch of distributed back-up generation, evaluates performance and manages payment.¹³ No party has filed testimony suggesting that GridSolar cannot provide the monitoring and dispatch functions contained in the GridSolar Project.

(LineTracker_Application_Notes.pdf) where GridSense™ discusses a few cases where utilities have made practical application of their technology for this purpose. While fault tracking and outage reporting are not the primary GridSolar's purpose in deploying these meters, this type of information would nevertheless be available to CMP as the host utility. This result is typical of the underlying concept applied throughout the GridSolar project - to get as many useful outputs as possible from every deployed component and every dollar of capital investment.

¹² It is interesting to note that the T&D utilities have essentially no role in the entire DR undertaking.

¹³ GridSolar has executed a Memorandum of Agreement with EnerNOC, Inc. for services related to establishment and operation of the network operations center and the dispatch of distributed back-up generation and demand response resources.

(See Tr., 2/12/10 pages 35-38.)

Nor does the record contain a single, substantiated assertion that GridSolar is not capable of developing, operating and managing the GridSolar Project in a manner that will provide the necessary grid reliability services. In the multiple volumes of testimony filed in this case, the OPA and its witnesses never once raised a question about whether GridSolar could deliver on its proposed GridSolar Project. Similarly, in the multiple volumes of testimony filed by CMP, there is not a single assertion that GridSolar is not capable of performing the obligations necessary to make sure the GridSolar Project functions as required. In fact, when CMP had the opportunity to question GridSolar on this very subject during the hearings, CMP's legal counsel declined:

MR. DONAHUE: Okay. The GridSolar witnesses are available for cross examination.

MR. BUCKLEY: Thank you. CMP?

MR. WELCH: We have no questions .

(Tr., 2/12/10, page 26.)

5.4. The GridSolar Project Is an Alternative to Constructing the MPRP that Includes Distributed Generation and Load Management, and that Provides Superior Reliability Benefits than the MPRP, Is Less Injurious to Public Health, Safety, Scenic, Historic and Recreational Values and Is Less Costly than the MPRP

CMP has asserted that “GridSolar systematically underestimated the costs of its own proposal ...” (Dumais and Stinneford Rebuttal Test., page 14, lines 14-18) It reaches this conclusion based upon testimony by Brian Conroy and LaCapra Associates. These testimonies are so off-the-mark with respect to their definition of the GridSolar Project and corresponding scope of analysis as to be useless.

We begin first with Mr. Conroy. His analysis purports to show that GridSolar has omitted interconnection costs of approximately \$295,000 per MW of installed distributed solar

generation.¹⁴ This figure is based on his assumption that GridSolar will distribute its facilities based on some “law of averages” across the CMP service territory (Tr., 12/21/10, page 245) and that none of them will interconnect to 34.5 kV circuits. (Tr., 12/21/10, page 253-254). Both of these assumptions are flat-out wrong. Mr. Conroy further conceded in relation to his \$295,000/MW cost figure that:

- The \$14,400 cost for the Substation Transformer Upgrade could be avoided by not using 6 specific substations of the 250 or so substations on the CMP distribution system, 3 of which are not even in the CMP defined area of need (Tr., 2/5/10, page 226);
- The \$110,329 cost for the Distribution Conductor Upgrade costs could be avoided by locating on the over 1,200 miles of 3-phase distribution conductors on the CMP system that have adequate carrying capacity or by interconnecting to 34.5 kV circuits. (Tr., 2/5/10, page 228);
- The \$40,000 cost for the of Distribution Recloser Upgrade, the \$21,000 cost for the Distribution Regulator Bank Upgrade, and the \$40,000 cost for the Substation Recloser Upgrade can be cut in half or more by locating multiple distributed solar generating facilities on the same circuits or substations (Tr., 2/5/10, page 226);
- None of the costs in his Exhibit 2 reflect any interconnections at the 34.5 kV level and, depending on the location of the connection at the 34.5 kV, the GridSolar costs could be less expensive than those shown in Exhibit 2 (Tr., 12/21/09, pages 255-256); and
- The \$40,000 GridSolar cost used by Mr. Conroy is incorrect. GridSolar’s cost number is \$40,000/MW or \$80,000 for the 2 MW facilities modeled by Mr. Conroy. (Tr., 2/12/10, page 40.)

¹⁴ As GridSolar noted in its Surrebuttal Testimony, even if this figure were correct, the incremental costs to GridSolar are \$0.15 per Watt or 4% of the total installed cost. This would not change the relative cost advantage GridSolar has compared to the MPRP. (See GridSolar Surrebuttal Test., page 11, line 27.)

In addition, Mr. Cannata testified that some or all of the costs identified in Exhibit 2, Page 1 of 1 of Brian Conroy's Rebuttal Testimony will be incurred by CMP as it upgrades its local distribution plant to accommodate projected peak load growth over the next 10 years, and that these costs can be avoided by the GridSolar Project. (Transcript, 2/10, Pages 227-228.)

Mr. Cannata further noted that the load limitations on local distribution circuits are often a function of line clearances, and that additional carrying capacities can be achieved through pole extensions at a much lower cost than reconductoring entire circuits. (Tr., 2/10/10, page 224.) Finally, Mr. Cannata stated that by strategically locating its distributed solar generating facilities within the CMP service territory, GridSolar could significantly reduce its interconnection costs, while providing substantial benefits to CMP. (Tr., 2/10/10, page 229.)

This last point has been a central contention of GridSolar's since its initial filings in this case. To support this contention, GridSolar has repeatedly asked for detailed information about the CMP transmission and distribution grids (at voltages of 34.5 kV and below). CMP has provided some limited information with respect to its bulk power system and with respect to the locations of substations, but it has refused to provide the necessary information that would allow GridSolar to develop a strategic location plan that would minimize cost and maximize the benefits from the location of distributed generation facilities. On January 14, 2010, CMP responded to GridSolar's data request CMP-08-01 issued on November 24, 2009 as follows:

CMP also objects to this request on the grounds that it seeks information not relevant to the subject matter involved in the pending action. While detailed substation information of the type requested in CES-08-01 may be of interest to a public utility that has been granted the right to operate in CMP's service territory, it is not relevant to establishing the need for MPRP or an alternative to MPRP, which is the subject matter of Docket No. 2008-255.

However, under cross-examination, Mr. Conroy acknowledged that, without the information sought by GridSolar in CMP-08-01, it would be “extremely difficult” to optimally locate 200, 2MW distributed solar facilities and that “I would need more information” to do this job well. (Tr., 2/5/10, page 217).

Mr. Cannata reaffirmed Mr. Conroy’s assessment:

DR. SILKMAN: Thank you. Could you take a look at -- and I believe Mark did hand this out to you, the first page which is -- it’s a response from CMP to CES-08-01? In looking at the information that CES or GridSolar requested in this instance, the substation name, the circuits interconnected at various substations, the ratings of those circuits, their physical geographic location, their configurations, whether or not they have communication devices at them, whether or not there’s single-phase power located at the substation. Is this part of the information that you might want to have available to you if you were going to locate distributed generation on the system to minimize the cost to CMP ratepayers of upgrades that otherwise would be necessary?

MR. CANNATA: This would be very helpful.

(Tr., 2/10/10, page 229.)

CMP’s argument that the information sought by GridSolar is somehow not necessary to structure and evaluate alternatives to the MPRP, when its own expert employee and Staff’s expert consultant both acknowledge that it is necessary for the development of an NTA is nothing less than a strategic effort to deny GridSolar critical information, on the one hand, and utilize GridSolar’s lack of information to disparage the non-transmission alternative, on the other, as evidenced by this cross-examination of Mr. Cannata:

MR. DES ROSIERS: And the -- there was also some questioning yesterday about the GridSolar proposal and its feasibility or -- to save costs. Has the staff received any specific proposal from GridSolar that sets forth the location and specifications and details of the distributed solar generation that GridSolar would install on the system, such that a determination could be made that, in fact, GridSolar will save on distribution and transmission costs?

MR. CANNATA: No and yes.

MR. BUCKLEY: Well, are you asking in the context of this case?

MR. DES ROSIERS: In the context of this case, yes.

MR. CANNATA: It's no, but yes. What we were discussing yesterday was

Brian Conroy's analysis of locating a two-megawatt solar plant somewhere on the system. And as he stated when he presented it, he just took -- you know, it could be anywhere on the system so that would be like rolling the dice and that's the cost it would be. What we were discussing yesterday was if, in fact, somebody were to go through with a little bit more sharper pencil and look for places, that those costs would come down.

MR. DES ROSIERS: Certainly, you could site one solar, two-megawatt solar generation station, at an optimal spot. But is your understanding that GridSolar is proposing to install only one two-megawatt installation?

MR. CANNATA: No, we discussed yesterday that some locations may have multiple installations at one spot.

MR. DES ROSIERS: Okay. And has there been any presentation to know where the 100 or 200 spots would be on the system?

MR. CANNATA: I don't want to take a position and defend Rich here, but I think he said he's asked for that information many times and has not been able to get it.

(Tr., 2/11/10, p. 105-107.) This approach by CMP is highly prejudicial against a fair consideration of the GridSolar alternative and cannot be viewed as anything short of an attempt by CMP to prevent the Commission from fulfilling its statutory obligation.

We turn now to LaCapra Associates. As GridSolar demonstrated in its Surrebuttal Filing, the LaCapra analysis of the GridSolar financial model is wrong in a number of instances. Contrary to LaCapra's assertions, GridSolar does not utilize too high a capacity factor, but instead uses a level of output (MWhs per MW) that is the same as that recommended by NREL, which was cited by LaCapra as an industry standard; LaCapra's interpretation of how capacity is determined for intermittent resources under the FCA is incorrect; LaCapra's critique of GridSolar's use of accelerated depreciation is not relevant, as a careful review of the GridSolar financial model would clearly have demonstrated. The effect of all of LaCapra's modifications, with the exception of the price per kW to install solar PV systems (which we discuss further below), is negligible.

The Commission does not have to accept GridSolar's work alone in this regard. The Commission can also rely on Mr. Fagan's conclusion that (a) the GridSolar proposal is not "Highly Uneconomic and Not Financeable", as asserted by LaCapra, that (b) "Testing the

model with a range of not unreasonable assumptions leads me to the opinion that on its face, the proposal is much more economical than one might first think” and that (c) “a not unreasonable set of assumptions can lead to economically feasible outcomes.” (Fagan, Surrebuttal Test., page 50, line 11 and page 54, line 12.)

An important factor in the economics of the GridSolar Project is the cost of the distributed solar facilities proposed. The record in this case supports the costs used by GridSolar. The testimony of Dr. William Behrens, founder of ReVision Energy, demonstrates very clearly that rooftop solar is being installed on commercial buildings in Maine today for less than \$5.00 per Watt (Behrens, Surrebuttal Test., page 4, line 22) and that the cost would be 25% lower (taking it to below \$4 per Watt) for facilities of 2 MW constructed on greenfields:

Q. Most of your installations have to date been small scale – less than 100 kW, and on rooftops. If you could move into larger scale installations of 2 MW on greenfield sites such as has been proposed by GridSolar in this case, would your installation costs be lower?

A. Yes, they would be considerably lower. Photovoltaic modules are offered in the market at varying volume levels. A pallet holds 20-40 modules, depending on brand; each module is roughly 200 watts. A standard 40’ shipping container will hold approximately 70-100 kW of modules. At purchase quantities less than a single container, but in pallet quantity, distribution costs add roughly 10-15% to the cost. At purchase quantities of 10-20 containers, roughly 2MW, module cost will be roughly 25% lower than what we are paying now, purchasing by the pallet. Additionally, racking systems receive strong quantity discounts; racking cost per watt will also fall. We would expect an installed cost, at the 2MW level, to be as much as 25% below current rooftop costs.

(*Id.*, page 6, line 1-14) This is non-controverted testimony by the only witness in this case that is in the business of installing solar PV system in Maine. Dr. Behrens was available for cross-examination by CMP and by the Staff, but both parties declined to question his expert testimony.

Instead of the testimony of experts in the field of solar PV systems, CMP has offered

LaCapra Associates to refute the cost figures presented by GridSolar. One would expect LaCapra to have discussed solar PV installation costs with experts in the field or to obtain quotes for representative projects similar to those proposed by GridSolar. They did no such thing, seeking advice from only a single company, which happens to be CMP's prime contractor on the MPRP. (Tr., 2/4/10, page 50.)

LaCapra relied instead on various third-party sources for information related to the cost of solar PV systems. Most of this information arose from data that bore no relationship whatsoever to the GridSolar Project, either in terms of the facility's installation date, its geographic location, its size or whether it was on a rooftop or greenfield site. The primary source of information – two studies done by Lawrence Berkeley National Laboratories ("LBNL") – contained a sample of observations that included no facility built after January 1, 2009, no facility located in the State of Maine, no facility larger than 1.5 MW and no facility constructed on a greenfield site. Under cross-examination, Mr. Peaco, President of LaCapra Associates, conceded that the sample of solar installations in the LBNL Studies was not representative of the GridSolar Project. (Tr., 2/4/10, page 37.)

Where the LBNL Study did identify solar installations that were more comparable to the GridSolar Project, LaCapra arbitrarily ignored this evidence. The following chart from the 2009 LBNL Study (contained in the GridSolar Surrebuttal Test. at page 38) shows that 2 MW or greater installations were being constructed with costs below \$5.00 per Watt in 2008. These clear examples of costs that support GridSolar were rejected by LaCapra, based on the fact that they did not include "non-module costs", which LaCapra asserts represent "about half of the cost – total cost of the installed PV systems". Under cross-examination, however, it was clear that LaCapra knew very little about these installations. At the Boulder installation, for example, LaCapra alleges that the non-module costs include the racking and the

interconnection costs, but in fact LaCapra did not know whether these components were part of the project costs or were already in place:

DR. SILKMAN: Did you look to see what the incremental cost of all of that infrastructure around the Hoover Dam represented in terms of a dollars per watt, if you had to reproduce that for a solar installation?

MR. PEACO: My understanding in large -- in large PV systems that the non-module costs are about half the cost -- total cost of installed PV systems.

DR. SILKMAN: If they were less than half the cost, would that matter to you?

MR. PEACO: If they were?

DR. SILKMAN: Yes.

MR. PEACO: I'm -- I'm sorry, if --

DR. SILKMAN: Well, let me back up. Withdraw that. What is your understanding of 50 percent of the cost being the non-modular costs come from?

MR. PEACO: It comes from -- I think it's referred to in the large Berkeley study and other materials we looked at. I don't recall specifically, but the -- in the materials we reviewed, that was the -- the number that we -- that we -- that was the determination we made. And I'm -- as I sit here I can't remember which source.

DR. SILKMAN: Well, does the non-modular cost in your mind represent the racking for a solar system?

MR. PEACO: It includes that.

DR. SILKMAN: It includes the racking? Does it include the foundation for the system?

MR. PEACO: Yes.

DR. SILKMAN: Does it include -- the non-modular cost? Does it include the interconnection piece?

MR. PEACO: Yes.

DR. SILKMAN: And so when you talk about the Boulder City, Nevada facility at \$3.20 you indicated that there was a lot of infrastructure available from the Hoover Dam.

MR. PEACO: Not from the -- it's a -- it's located near the Hoover Dam but --

DR. SILKMAN: And --

MR. PEACO: -- there is -- there is an existing facility there where they -- a large solar thermal installation and a combined cycle unit, and my understanding that this was located at the same --

DR. SILKMAN: Yes.

MR. PEACO: -- same site.

DR. SILKMAN: Did -- did anything -- did any pieces of those existing facilities include racking for solar systems?

MR. PEACO: I don't know. I -- I don't know.

DR. SILKMAN: But yet you just said that we were going to benefit from having all this infrastructure available but you don't know what pieces of the infrastructure were there?

MR. PEACO: Well, clearly, the interconnection was there. Clearly, the -- the facility -- there was an existing operating facility with an added -- added increment of -- of solar PV.

DR. SILKMAN: So what we had there was the interconnection only. We

didn't have racking, we didn't have foundations. All we had was an interconnection. Is that correct?

MR. PEACO: I'm not sure which pieces were --

DR. SILKMAN: Then how can you come to a conclusion that the cost for the Boulder City, Nevada is not representative of GridSolar if you're not even sure what was there?

MR. PEACO: I don't -- I don't have the particulars of that but it was a clearly a -- an installation and existing facilities with infrastructure, and therefore, it clearly benefited -- the cost to install benefited from the fact that that infrastructure was there. I don't -- we haven't done a -- a detailed audit of how that project was put together.

DR. SILKMAN: When you say benefited, did it benefit but to the tune of ten cents a watt? Twenty cents a watt? Fifty cents a watt?

MR. PEACO: I don't know.

DR. SILKMAN: So then how do you know the \$3.20 number is not a reasonable number if you don't know?

MR. PEACO: Well, I haven't seen your proposal, and I'm looking for something that's comparable that we understand and this -- this does not fit that -- that concept.

(Tr., 2/4/10, pages 42-45.)

LaCapra rejected the lowest cost solar PV without knowing anything about the project and without performing a detailed audit of its costs, because maybe the project did not have to bear the costs of interconnecting to the grid. Yet, *arguendo*, even using the largest figure presented by CMP for the full costs interconnection, such costs represent approximately 4% of the total installed costs per Watt, as we noted earlier in this Brief.

Under further questioning, it became clear that LaCapra did not know anything about any of the projects on the list, including those with higher costs upon which it relied for its conclusions about the reasonableness of GridSolar's costs. In fact, LaCapra did not even know something as fundamental as the fact that the more expensive Nellis, NV and Fort Carson, CO installations were on top of capped landfills on military installations -- information that explains the higher costs and that could have been obtained from a simple "Google" search:

DR. SILKMAN: Thank you. The facility at Nellis, Nevada, did you look into that one?

MR. PEACO: I don't recall specifically looking -- I don't -- I don't have a

recollection of that one.

DR. SILKMAN: So you don't know whether that was similar or not similar to the GridSolar installation?

MR. PEACO: I don't remember that particular one, no.

DR. SILKMAN: Would it surprise you to find that that was done on a capped landfill, and therefore, its cost would be substantially higher?

MR. PEACO: I'm -- I'm not familiar with the project.

DR. SILKMAN: You don't know?

MR. PEACO: I don't know.

DR. SILKMAN: But yet you said you looked into these and you decided which ones were more comparable and less comparable to GridSolar but you didn't look at Nellis one?

MR. PEACO: I didn't represent that Nellis was the benchmark that we used for the -- for your -- for the analysis.

DR. SILKMAN: Did you look at the Fort Carson one?

MR. PEACO: I don't -- I'm not -- I don't recall that specifically, Fort Carson.

DR. SILKMAN: So you didn't look at that one either to determine whether that \$6.50 would be comparable to the GridSolar installations.

MR. PEACO: I don't recall.

DR. SILKMAN: Well, let's -- let me ask you, which ones did you look at? When you said you looked at these and compared them to GridSolar and you decided that they were comparable to GridSolar which ones did you spend time looking at?

MR. PEACO: We looked at -- we looked at these -- these range of costs. We looked specifically at the ones that were on the low end of the curve to find out what those represented. We also were familiar with other projects that were proposed in Massachusetts that were quoted in the six to seven dollar range and concluded that from that standpoint the types of projects that we were looking at were in that range and not in the range of three or four dollars.

(Tr., 2/4/10 at page 41.)

Table 3. Installed Cost of Large (≥ 2 MW) Out-of-Sample PV Systems

Location	Year of Installation	Plant Size (kW _{DC})	Installed Cost (2008\$/W _{DC})	Actual or Expected Capacity Factor	Tracking System Design
Boulder City, NV	2008	12,600	3.2	21%	none (fixed-axis)
Fairless Hills, PA	2008	3,000	6.7	14%	none (fixed-axis)
Fontana, CA	2008	2,400	4.3	no data	none (fixed-axis)
Riverside, CA	2008	2,000	6.5	15%	none (fixed-axis)
Nellis, NV	2007	14,200	7.3	24%	single axis
Alamosa, CO	2007	8,220	7.6	24%	none, single axis, and double axis
Fort Carson, CO	2007	2,000	6.5	18%	none (fixed-axis)
Springerville, AZ	2001-2004	4,590	6.2	19%	none (fixed-axis)
Prescott Airport, AZ	2002-2006	3,388	5.6	21%	single axis and double axis

Notes: Cost for Springerville is for capacity added in 2004. Cost for Prescott is for single-axis capacity additions in 2004.

A second example of arbitrary and biased selection criteria, involved the use of the following table taken from the 2008 LBNL Study and reproduced in the LaCapra April 3, 2009 Rebuttal Testimony on page 9.

Cost Per KW of Active and Proposed US Solar Photovoltaic Installations					
Utility	Location	MW	Completion Date	Total Cost in Millions	\$/watt
Duke Energy	NC	16.1	2010	\$ 173	\$ 10.7
Duke Energy	NC	8	TBD	\$ 50	\$ 6.2
PSE&G	NJ	120	2014	\$ 773	\$ 6.4
Napa Valley College	CA	1.2	October-07	\$ 8	\$ 6.2
Florida Power & Light	Kennedy Space Center, FL	10	2010	\$ 79	\$ 7.9
Florida Power & Light	De Soto County FL	25	2009	\$ 174	\$ 6.9
Southern California Edison	CA	250	TBD	\$ 962	\$ 3.9
San Diego Gas & Electric	San Diego, CA	52	TBD	\$ 250	\$ 4.8

This table shows installed costs ranging from \$3.90 to \$10.70 per Watt, with the lowest prices from utility projects of a comparable size and scope to the GridSolar Project. LaCapra rejected the lowest cost project, the Southern California Edison cost estimate, even though it matched the GridSolar cost estimate very closely and involved the build out of approximately 50 MW per year in facilities of 1.5 to 2.0 MW in size. Mr. Hahn, whom Mr. Peaco, President of LaCapra Associates, said “did the lion’s share of the work on the GridSolar section of our testimony”, (Transcript, 12/21/2009, Page 134) indicated that he did not know whether this project was a single 250 MW facility or multiple smaller facilities and testified that LaCapra rejected this project without discussing it with anyone at Southern California Edison to verify the estimated installation costs:

DR. SILKMAN: And yet you had an eighth project from Southern Cal Edison

that had costs of \$3,850 a kilowatt for 250 megawatts rolled out over a long period of time. Did you not call Southern Cal Edison and find out why they believe that those costs, at 3850, are realistic?

MR. HAHN: I didn't and I don't believe anybody at La Capra called Southern Cal Edison. That's one point on a table. There are other figures in the tables that show figures as high as ten dollars a watt. So from our viewpoint, that estimate of Southern Cal Edison was so far below the rest of the numbers in the table that we had reason to be concerned about it.

(Tr., 2/21/09, p.141.)

By two months later, however, under cross-examination, LaCapra had developed a rationale for rejecting the Southern California Edison project:

DR. SILKMAN: Did you conclude that the \$3.90 number from Southern Cal Edison was a highly optimistic costs of the future --

MR. PEACO: Yes.

DR. SILKMAN: -- of the future cost of solar?

MR. PEACO: Yes, and it also was not a comparable project to GridSolar.

DR. SILKMAN: What was different about it than GridSolar?

MR. PEACO: Southern California Edison program is 50 megawatts a year over five years of roof-mounted PV systems targeted to warehouse buildings and so forth that would have minimal non-modular infrastructure in targeted locations within Edison's system. So it would not have any of the non-module characteristics of GridSolar and it is -- would be fixed-access, not single-access.

DR. SILKMAN: Do you know whether it is more expensive, as a general rule in the industry, to install solar on a rooftop or on a green field site?

MR. PEACO: Well, based upon Edison's representations it's less expensive to install on -- on these rooftops than -- these are specifically one- to two-megawatt installations. They had a defined range simply because Edison identified a niche in the California solar program that wasn't being served and they -- so they -- they petitioned to be able to develop projects in the one- to two-megawatt size on underutilized commercial rooftops across their system. That was the purpose of this. It's a cost-of-service arrangement so the costs are not guaranteed. Edison has the right to walk if they don't -- if they can't meet those costs. And -- and they have, you know, a 20,000-megawatt system within a much defined -- these locations.

(Tr., 2/4/10, pages 53-54.)

Of course, none of this was known to LaCapra at the time it made its decision to reject the Southern California Edison project as a price point for distributed solar PV systems, since, according to Mr. Hahn, no one at LaCapra had discussed the project with anyone at Southern

California Edison even to the point of knowing whether the 250 MW proposed was to be a single facility or multiple facilities.

LaCapra's "new-found" knowledge, however, did not extend to any of the other projects with higher installed costs. LaCapra did not know whether these other projects were rooftop installations, nor did it know anything about the regulatory circumstances in which they were being undertaken. The full transcript here is very enlightening:

DR. SILKMAN: The other facilities located -- or that are identified on that chart, the Duke Energy facilities --

MR. PEACO: Yes.

DR. SILKMAN: -- do you know where they were proposed to be located?

MR. PEACO: I do not.

DR. SILKMAN: You didn't reject those, though, did you?

MR. PEACO: Well, we looked at -- we looked at the total of the costs and we looked at the outliers and concluded that the -- to see whether the outliers were indicators of some trend or indicators of something that was, you know, unusual about those projects. And in the case of the ones that we saw the -- the outliers on the low side had special circumstances that, in our estimation, made them not comparable to the proposal that you have in front of us.

DR. SILKMAN: But you don't know whether the outliers on the high side had the same special circumstances.

MR. PEACO: We did not look at every project. We just looked -- looked at the outliers to see what -- what -- what circumstances pertained to those.

DR. SILKMAN: Well, the outliers on the Southern Cal Edison proposal that you identified that I heard from your testimony so far was that they were on the rooftop. Is that correct?

MR. PEACO: That's right.

DR. SILKMAN: Do you know how many of these other projects were on the rooftop?

MR. PEACO: I don't.

DR. SILKMAN: So how do you know that's an outlier?

MR. PEACO: It's an outlier based upon the -- the dollars per watt cost on the left -- on the right-hand side of this table.

DR. SILKMAN: And then you said it was -- you didn't consider it because it wasn't comparable to the GridSolar because we were not locating on rooftops. Is that correct?

MR. PEACO: That's correct.

DR. SILKMAN: But yet you don't know whether any of the other ones were on rooftops.

MR. PEACO: That's right.

DR. SILKMAN: The second outlier you said was that it was a regulated utility, as I recall.

MR. PEACO: It's -- it -- they're doing it on a cost-of-service basis, that's

correct.

DR. SILKMAN: Do you know whether or not Duke Energy, PSE&G, Florida Power and Light or San Diego Gas and Electric are doing theirs on a cost-of-service basis?

MR. PEACO: I -- I do not know.

DR. SILKMAN: But yet, you didn't reject those either, did you?

MR. PEACO: No but the cost-of-service -- the point about the cost-of-service is that the way that the particular construct was set up for Southern California Edison they had a number target that would define a threshold below which there would not be any further review of costs. If they came in above that they could do that but there would be a review of costs. So here was no guarantee -- there wasn't a contract guaranteeing a price. It was a -- an amount that they were -- a target that they were shooting for and they were going to go out and see if they could realize that. And if so, they would have regulatory pre-approval for recovery of the debt level of cost.

DR. SILKMAN: Did you look at the regulatory approvals for Duke Energy?

MR. PEACO: No.

DR. SILKMAN: So you don't know whether it was the same exact system at Southern Cal Edison, do you?

MR. PEACO: No, I don't.

DR. SILKMAN: Did you look at San Diego Gas and Electric, which is a California utility, to see if they were in the exact same program that Southern Cal Edison was participating in?

MR. PEACO: I did not.

DR. SILKMAN: But yet you didn't reject that one, either, did you, as being different from GridSolar?

MR. PEACO: We didn't look at that one in particular.

DR. SILKMAN: But yet you used the numbers in this chart to draw the conclusion that our cost, at \$3.70, was not representative of the costs in the industry?

MR. PEACO: That's right.

DR. SILKMAN: Well, which of these projects in that chart is similar to GridSolar?

MR. PEACO: We didn't -- we didn't review each of those to see how they matched up. We just looked at the -- the -- the collection of data for most projects is in the six to seven dollar range. The two projects, I guess, we're most familiar with are the ones that were proposed in Massachusetts. I don't know, do you want to talk about those?

DR. SILKMAN: Well, I'm not interested in those yet. I'm just focusing --

MR. PEACO: Well those --

DR. SILKMAN: -- on this.

MR. PEACO: -- those are ones we also looked at.

DR. SILKMAN: Well, I was just looking at this table.

MR. PEACO: Okay.

DR. SILKMAN: This table you've put in here for a reason. You've got a number of projects that are identified in here. The cheapest one, which is supportive of the GridSolar cost structure at \$3.90, you said you rejected because it wasn't the same as GridSolar.

MR. PEACO: Correct.

DR. SILKMAN: Comparable to GridSolar. But yet you didn't reject any of

the others but you don't know whether or not they were comparable to GridSolar or, in fact, they were exactly like the Southern Cal Edison one that you did reject.

MR. PEACO: Right. With -- with very few exceptions, most of the project costs were coming in the six to seven dollar range and those two -- so we looked at the outliers from that range to determine whether there was reason to consider them or not. And that was the extent of our review, other than the -- the Massachusetts projects which were proposed in the six to seven dollar range.

(Tr., 2/4/10, pages 54-59.)

Under re-direct, LaCapra indicated that they had relied as well on cost estimates from Western Massachusetts Electric and National Grid for projects being undertaken in Massachusetts.

Both companies are regulated utilities and among the projects were rooftop solar installations ("I think Western Mass was going to put a one-and-a-half or 1.8 megawatt facility on the roof of their head --- corporate headquarters in western Massachusetts." – Tr., 2/4/10, page 110.)

However, LaCapra indicated that it rejected the Southern California Edison cost estimate precisely because it was a regulated utility and involved rooftop installations. This selection criterion is blatantly arbitrary and cannot be relied upon by this Commission. The LaCapra selection standards can only be assumed to have been designed to eliminate all project costs that supported the GridSolar model and to include those that did not, with the final objective of overpricing the GridSolar NTA in comparison to the transmission alternative. Accordingly, the Commission should reject LaCapra's testimony as not credible.

Finally, Mr. Hahn, who, to quote, "did the lion's share of the work" on the GridSolar project, confessed to not knowing the build out schedule for the GridSolar Project.

Nevertheless, LaCapra assumed that 500 to 600 MW of the GridSolar Project will be fully built out by 2012, despite the clearly stated build out schedules provided by GridSolar in its filings in this case. (Tr., 2/21/09, page 136.) This assumption is clear error. By assuming that all of the GridSolar facilities are installed by 2012, LaCapra fails to give consideration to the

overwhelming evidence that the costs of solar PV systems will fall significantly over the next 10 years, as noted by Mr. Fagan:

Elements of the GridSolar proposal can play a very important role in designing a non-transmission alternative for Maine that could be less expensive than the effect of building the MPRP. Waiting a few more years before ramping up the installation of solar PV can have significant cost-saving benefit, based on some projections of solar PV costs. In effect, as long as the real costs of solar PV are declining due to technological and market driven changes, it is best to wait to install the solar PV as long as the other resources - DR and EE – are able to maintain peak load at or below the threshold level for reliability without MPRP. As I have indicated elsewhere in this testimony and in my direct testimony, incorporating aggressive EE and DR resources could allow for the scope of the MPRP proposal to be reduced considerably. The use of solar PV as part of such a plan could prove an attractive and economically feasible alternative to a ‘stand alone’ MPRP.

(Fagan Surrebuttal Test., page 55, lines 2-13.)

It is eminently clear from reading the testimony of LaCapra Associates that LaCapra is not knowledgeable about the details of how solar projects are constructed, the relationship of the various components of a solar project to total cost, or the likely future path of solar PV costs. While LaCapra has asserted that its effort was to find projects that were similar to the GridSolar Project for comparison purposes, it is obvious that rather than attempt to make a serious comparison of physical attributes, LaCapra’s approach was simply to eliminate all of the lowest cost projects. With the exception of limited conversation with CMP’s prime contractor, LaCapra acknowledges that it never attempted to contact anyone with the expertise to analyze these projects from a cost perspective or to verify its results. The only conclusion that can be reached is that the LaCapra analysis is arbitrary, extremely biased against the GridSolar Project and cannot be relied upon by this Commission. *See Dunn*, 890 A. 2d at 271 (Commission findings must be “reasonable” and “supported by substantial evidence in the record”),

5.5. The Commission Cannot Find that a Public Need Exists for the MPRP, and Therefore Cannot Issue a Certificate of Public Convenience and Necessity for the MPRP

Chapter 330 directs the Commission to establish public need for a proposed transmission line seeking CPCN approval by determining that ratepayers will benefit based on the electrical need for the line, taking into account economics, safety, reliability and other factors. Were this the extent of the direction provided by Chapter 330, the filings made by CMP and all of the parties in this case would have been much more limited. However, it is not the extent of direction. Chapter 330, §9(B) further requires that any “proposed transmission line must be reasonable compared to other alternatives.” *See also*, 35-A M.R.S.A. § 3132(6) (requiring the Commission to consider non-transmission alternatives including energy conservation, distributed generation and load management.) As a result, CMP retained LaCapra Associates to undertake a study of Non-Transmission Alternatives, a study that GridSolar and the OPA have shown is incomplete, inadequate, arbitrary and biased and cannot be relied upon by this Commission. On this basis alone, the Commission cannot find that the MPRP is reasonable compared to other alternatives.

The LaCapra NTA is not the only alternative to the MPRP in the record. GridSolar has provided a different alternative than any studied by LaCapra – the GridSolar Project. GridSolar has demonstrated that the GridSolar Project is vastly superior to the MPRP in its ability to meet CMP’s reliability requirements over the next ten years, as those are defined in the Staff Needs Assessment¹⁵ and in CMP’s analysis provided to GridSolar on September 1,

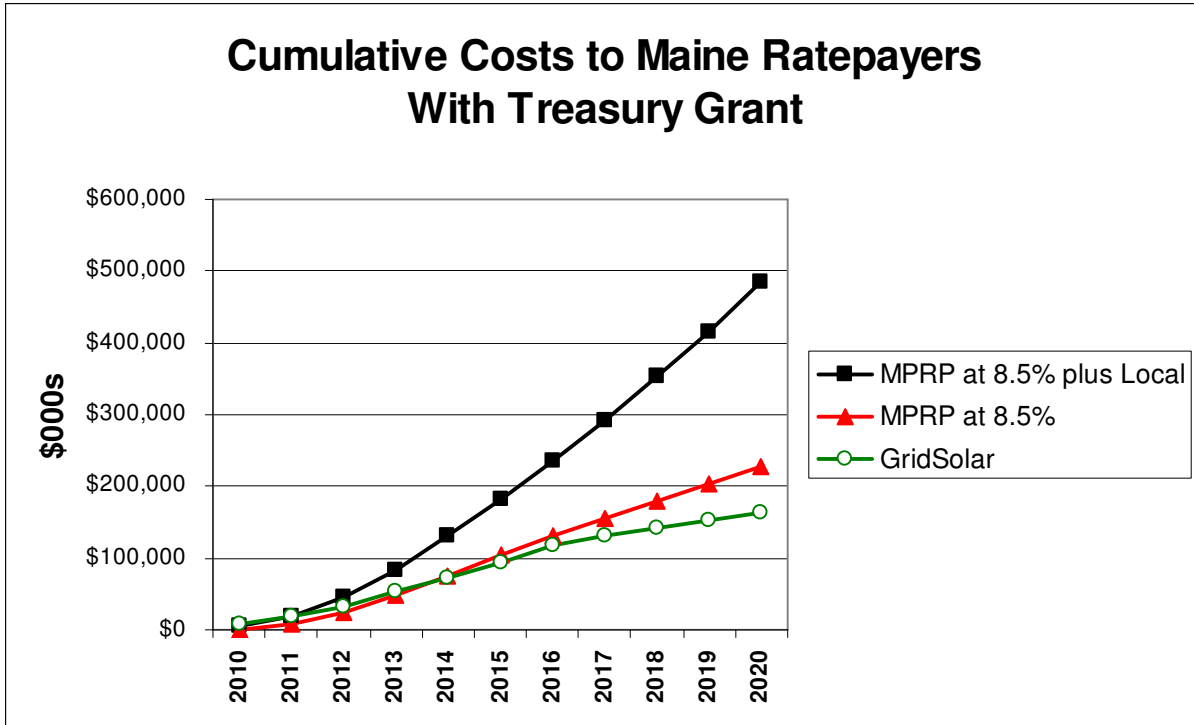
¹⁵ Maine Public Utilities Commission Staff Requested Needs Analysis, (CONFIDENTIAL), prepared by RLC Engineering, May 29, 2009.

2009,¹⁶ and when future needs on the non-PTF and distribution level systems are included in the assessment.

The figure below shows that at the lower needs levels resulting from the Staff Needs Assessment, the GridSolar Project will cost Maine ratepayers less than the MPRP, even if Mainers pay only 8.5% of the total costs of the MPRP. When savings from the avoided costs of non-PTF and distribution level investments that would otherwise be needed over the next 10 years are included, costs that are paid 100% by Maine ratepayers, the GridSolar Project costs less than half of the cost of the MPRP and will save Maine ratepayers more than \$300 million of net present value over the next ten years. When an alternative costs less than 50% of the transmission line and can save Maine ratepayers over \$300 million, the transmission line cannot be found to be “reasonable” compared to the alternative, by any definition of the word reasonable.

In addition, the GridSolar Project will (i) reduce the risks to Maine ratepayers from overbuilding transmission, (ii) promote Maine’s overarching energy policy of developing indigenous renewable and zero-emission generating resources, (iii) create more long-term job opportunities in Maine for Maine residents and (iv) do no damage to Maine’s fragile and limited wetlands. This package of secondary benefits is further proof that the MPRP is simply not reasonable compared to the GridSolar Project and cannot be found to be so by this Commission. Accordingly, this Commission must deny CMP’s request for a CPCN.

¹⁶ MPRP – Grid Solar Data Request for NTA Threshold Load Levels at 1600 MW CMP Load, (CONFIDENTIAL), provided by RLC Engineering, September 1, 2009.



(Figure from GridSolar Surrebuttal Testimony, February 2, 2010, Page 51)

5.6. The Commission Has the Statutory Authority to Require CMP to Enter Into a Contract with GridSolar, LLC to Provide Grid Reliability Services Through Development, Management and Operation of the GridSolar Project

Both Section 3132(6) and Chapter 330(9) require the Commission to consider alternatives to a proposed transmission line and to find that the transmission line is reasonable compared to the alternatives before the Commission may issue a CPCN for the transmission line. On this, the law is very clear. The law is silent on how such alternatives may be introduced to the Commission. One possibility is through alternatives reviewed by the applicant pursuant to 35-A M.R.S.A §3132(2-C)(C). *See also* Chapter 330(6)(I).

A second option is for another party in the case to provide one or more alternatives. Since alternatives include energy conservation, distributed generation and load response and since these are areas that are no longer within the purview of Maine’s transmission and distribution utilities, it is reasonable to assume that such alternatives would, in fact, be

proposed by non-utility parties engaged in these specific functions. This is what GridSolar has done in this case.

The law is similarly silent on what the Commission should do if it finds that the transmission line is not reasonable in comparison to one or more of the alternatives presented to it. Silence, however, cannot be interpreted as the Commission having no authority to act upon such a finding. By requiring a comparison, Commission rules and Maine law must be interpreted as anticipatory of a finding and therefore of an action. One clear action is that, where a proposed transmission line is unreasonable in comparison to the alternatives, the Commission must deny the petition for a CPCN. This action, however, leaves the matter of the alternative unsettled. More importantly, if there is found to be a grid reliability problem to which the alternative is a solution, failure to act would leave this problem unresolved. This could create a situation that negatively impacts the health and safety of Maine residents and could put Maine in violation of federal law. In addition to its express powers, the Legislature has granted the Commission implied powers to carry out its responsibilities. 35-A M.R.S.A. §104.

On this basis alone, the Commission must be accorded deference to act, and such actions must include ordering the development and implementation of such an alternative solution. Any other reading of subsection 3132(6) and the rest of Title 35-A would make the Legislature's directive to consider alternatives meaningless, on the one hand, or severely limit the Commission's statutory obligation to "...ensure safe, reasonable and adequate service and to ensure that the rates of public utilities are just and reasonable to customers and public utilities." on the other. 35-A M.R.S.A. §101.

In addition to inferred powers and what is contained in Section 3132 and Chapter 330, the Legislature has given the Commission other authorities that it may call upon to fulfill its

statutory obligations and meet Maine’s energy policy. Specifically, 35-A M.R.S.A §3153-A (1) directs the Commission to “order transmission and distribution utilities to develop and submit specific rate design proposals and related programs ... designed to encourage energy conservation, minimize the need for new transmission and distribution capacity, minimize the costs of transmission and distribution services to consumers, minimize transmission and distribution rates over the long term or short term ...” The focus of this section is on both rates and programs. Accordingly, subsection 3153-A(1)(D) specifies “Rates or other regulatory programs that encourage transmission and distribution utility system reliability”; subsection 3153-A(1)(E) specifies “Transmission and distribution utility financing or subsidization of capital improvements undertaken by ratepayers ... as long as the goal is to economically defer or eliminate the need for transmission and distribution plant upgrades”; subsection 3153-A(1)(A) specifies “Load management techniques.” There is nothing that prohibits a transmission and distribution utility from developing such programs through a third-party provider; in fact, since Maine’s transmission and distribution utilities have been restructured, the law anticipates that many of these programs – specifically those dealing with load management, distributed generation and capital improvements undertaken by ratepayers – will be done by such third-parties under a contract or other form of oversight by the utilities and the Commission.

The Commission also has specific authority under 35-A M.R.S.A § 3210-C(3) to “direct investor-owned transmission and distribution utilities to enter into long-term contracts for capacity resources.” This authority is proscribed by certain legislatively set priorities and limitations on contract terms and conditions, but the authority is clear. To the extent that an alternative to the MPRP is consistent with those legislative priorities set forth in 3210-C (4), the Commission has the authority to order CMP to enter into a contract for the broad purposes

of this provision. There is no question as to whether the GridSolar Project would qualify – in fact, it appears as if the criteria in subsection (4) were written precisely with the GridSolar Project in mind.

Pursuant to these myriad authorities, there can be no doubt that the Commission has full power to direct CMP to contract for grid reliability services through alternatives to the MPRP and specifically through the GridSolar Project. *See Competitive Energy v. Public Utilities Comm’n*, 818 A. 2d 1039 (Me. 2003) (Commission’s interpretation of an ambiguous statute it administers is reviewed with “great deference and will be upheld unless the statute plainly compels a contrary result”). Also, if the Commission were to grant any part of CMP’s request, the Commission could condition the grant on CMP also contracting with GridSolar for grid reliability services.

6. Secondary Benefits

Chapter 330, §9 provides that “... public need can be established for a proposed transmission line that is not the least cost alternative because aesthetic, environmental or other factors justify a reasonable cost increase.” Based on this, the Commission has sought additional information related to a variety of public policy objectives that may be impacted by the MPRP or Non-Transmission Alternatives. In each area that the Commission has explored, CMP has failed to demonstrate that the MPRP will deliver secondary benefits or that, where it may provide secondary benefits, these secondary benefits are greater than those that GridSolar will provide.

6.1. The GridSolar Project Will Create More Jobs in Maine than the MPRP Will Create Over the Next 10 Years

GridSolar concedes that the MPRP will create more person-years of employment during the two-year peak of its construction period than will the GridSolar Project during that same time period. That is all GridSolar concedes.

GridSolar has shown that the GridSolar Project will create more person-years of employment over the ten-year planning period than the MPRP, and this showing has not been challenged or disputed by any party in this case. The two tables below are from our Supplemental Filing of September 8, 2009 (pages 28 and 30). These show direct and indirect job creation for the MPRP and for GridSolar under an 800 MW build-out scenario, and therefore compares “apples-to-apples”. These tables show the GridSolar Project creating more person-years of employment over the 10 year time period than the MPRP. If, however, load does not grow as rapidly as CMP initially forecasted, GridSolar would not install as much solar distributed generation. This would result in fewer jobs being created. Of course, if there is lower load, there is less need for all of the MPRP, which will also have a commensurate impact on both costs to ratepayers and the number of jobs it creates.

MPRP - Direct and Indirect Jobs Created

	Direct Jobs			Indirect	
	Constr.	Services	Total	Jobs	Total
2010	314	187	501	190	691
2011	1,611	820	2,431	896	3,327
2012	1,583	816	2,399	888	3,287
2013	578	287	865	354	1,219
2014	0	0	0	0	0
2015	0	0	0	0	0
	Total Man-Years				8,524

Source: Colgan Study

GridSolar Project - Direct and Indirect Jobs Created

	Direct Jobs	Indirect Jobs	Total	Manufacturing Scenario		Total
				Direct	Indirect	
2010	224	86	310			310
2011	389	148	537	150	57	687
2012	807	308	1,116	150	57	1,266
2013	952	364	1,316	150	57	1,466
2014	1,067	407	1,474	150	57	1,624
2015	1,155	441	1,596	150	57	1,746
2016	1,190	454	1,644	150	57	1,794
2017	363	139	502	150	57	652
2018	329	126	455	150	57	605
2019	394	150	544	150	57	694
2020	394	150	544	150	57	694
Total Man-Years						11,538

The job creation figures developed by GridSolar are supported by Dr. William Behrens, founder of ReVision Energy. (Behrens, Surrebuttal Test., at page 6.) The jobs created by ReVision Energy are not estimated jobs that derive from an economic model of Maine’s economy. They are actual jobs created by an actual company operating in Maine.

Mr. Fagan also recommended that the Commission consider the “macroeconomic effects – installation jobs and potentially manufacturing jobs” when assessing the GridSolar Project as solar policy for Maine. (Fagan, Surrebuttal Test., at page 50, line 20.)

An important consequence of the job creation benefits of the GridSolar Project as compared to the MPRP is that the GridSolar Project’s creation of a steady, long-term employment base is more likely to benefit Maine residents than is MPRP’s creation of short-term job opportunities. Long linear projects that require specialized labor skills often involve scheduling multiple crews working on specific segments simultaneously. Of necessity, this requires bringing in work crews from outside of the state to expedite the construction process, crews that follow the development of transmission projects across the country. We believe that CMP will give consideration to using primes and subcontractors from Maine; we also

know that Cianbro, for example, has been very successful in securing work outside of Maine in situations where the same consideration was being given to in-state workers. The point is that there are no guarantees that the jobs created by the MPRP will benefit Maine companies or Maine workers, and CMP has offered no such guarantee.

6.2. The GridSolar Project is the Only Alternative Before the Commission that Guarantees that Renewable Energy Will Be Developed in Maine in Furtherance of Maine Energy Policy

CMP would have this Commission believe that the sole purpose and focus of Maine's energy policy is stated in the Maine Wind Energy Act and specifically in 35-A M.R.S.A §3404. In point of fact, Maine's energy policy is much broader than the promotion of wind energy, and includes:

- Encouraging the use of renewable, efficient and indigenous resources (*Id.*, §3210 (1));
- Increasing the share of renewable energy capacity resources (*Id.*, §3210 (C) 2);
- The design of rates to encourage energy efficiency and minimize the need to build expensive new transmission capacity (*Id.*, §3152);
- The promotion of generation of from small energy production facilities using renewable resources (*Id.*, §3302);
- Active promotion of investment in cost-effective energy efficiency measures and systems that use alternative energy resources (*Id.*, §10103); and
- Reduce peak-load electric energy consumption by 100 MW by 2020. (*Id.*, §10104(4)(F)(2))

By CMP's own admission, the MPRP is a transmission project. It includes no renewable generation and no demand response in any form and certainly not in a form that would

minimize the need for expensive new transmission capacity. In fact, it meets none of the above state energy policy objectives and frustrates many.

In contrast, the GridSolar Project furthers the purposes of each of these state policy objectives, as GridSolar has demonstrated in its filings and as the table below summarizes.

State Energy Policy Objective	GridSolar Project	MPRP
Increase renewable energy	Yes – through installation of distributed solar generation	No
Minimize the need for expensive transmission projects	Yes – the GridSolar Project is an alternative to an expensive new transmission project	No
Promotion of small renewable energy facilities	Yes – the GridSolar Project is a system of small scale (less than 10 MW) renewable (solar) generation facilities	No
Investment in alternative energy	Yes – invests Maine ratepayer monies in renewable solar generation rather than high voltage transmission lines	No
Reduce peak electric loads by 100 MW	Yes – the GridSolar Project incorporates more than 100 MW of demand response through 2020	No

6.3. There is no Evidence that the MPRP Will Result in the Development of Wind Energy in Maine

We pose the following rhetorical question to the Commission: If the MPRP is so essential to wind development as CMP alleges, why is it that not a single wind developer submitted testimony in support of the MPRP in this case? We know it is not because they are unfamiliar with Commission practices. The former Chair of the Commission is an officer of First Wind, which has found its way to this Commission in other instances when its interests were at stake; Horizon Wind is an affiliate of Iberdrola and therefore CMP – it must certainly be familiar with Commission practices; TransCanada is a multi-national company that

participates on a daily basis in a wide variety of regulatory proceedings at the federal, provincial and state levels across North America; a co-founder and principal of Independence Wind is the former governor of Maine, who is certainly no stranger to state regulatory processes and proceedings; Patriot Renewable Energy is an affiliate of Beaver Ridge Wind, which is very familiar with this Commission's practices.

It is reasonable for the Commission to infer from this strange silence that the reason is because not a single wind developer in Maine could state under oath that building the MPRP would result in the development of a single MW of wind generation capacity in Maine. Rather, they would have to acknowledge that Mr. Fagan's conclusion with respect to wind is correct:

...there is no analysis in the record of the specific need to increase the firm capacity of the major bulk power transfer paths in order to interconnect and operate wind resources ... CMP has emphasized the importance of increasing transfer capability across the Maine interfaces yet has produced no analysis that demonstrates the outcome of economic dispatch associated with increases in Maine wind resources. There has been no assessment of the changes to congestion levels in Maine and New England – instead there has been an undocumented assertion that without MPRP, wind resources may not develop – even though the reality is that they have already been developing.

(Surrebuttal Test. – page 46.)

Further, they would be forced to acknowledge what Jeremy Payne of the Maine Renewable Energy Association (“MREA”) acknowledged, that one of their most significant concerns is that low-priced energy from eastern Canada and Quebec is having a depressing effect on electricity prices in Maine and New England and that the MPRP, by increasing transfer capacity from New Brunswick into New Hampshire, would facilitate a “flood” of energy from Canada. (Tr. 2/12/10, at pages 113-114.) It is at least as likely that building the MPRP will contribute to this “flood” as it is that the MPRP will facilitate the construction of new wind generation in Maine.

While there has been much discussion in the case as to the likelihood that the MPRP will contribute to the development of wind generation in Maine, there has been absolutely no evidence presented by any party as to how much wind power will be developed, where it will be located, or when it will come on line, as a consequence of this investment of ratepayers dollars. Again, as noted by Mr. Fagan, “The extent, the location, and the timing of such new transmission capacity [for wind] is not known. Nobody has studied that.” (Tr., 2/11/10, page 11.) Every interested party had ample opportunity to present such evidence and to have its evidence tested through the long process of technical meetings and cross examination. None did. The Commission must make its decisions on the basis of the evidence presented in this case and not upon the wishful thinking of various parties with an interest in the outcome, but who are unwilling to have their case tested and examined by the other parties. Any decision by the Commission that is not based upon evidence presented and tested must be deemed arbitrary and capricious on its face.

6.4. The GridSolar Project is Far More Aesthetic and Creates Far Fewer Environmental Damages than the MPRP

John Rowe, the former CEO of CMP, used to say that he found himself to be unique in his appreciation of the gracefulness and power of transmission lines. We agree – he is unique. To the average person, however, and certainly to abutting landowners, there is nothing aesthetic about 345 kV or 115 kV transmission lines or towers and the cleared swath of land necessary to accommodate them. Where they have been proposed, citizen groups and even entire towns have opposed them.

Not so with the GridSolar Project. Perhaps the town most adamantly opposed to a new 115 kV line in Maine, the City of Saco, not only welcomed the opportunity to have GridSolar

locate one of its distributed solar generating facilities in it, the City Council voted unanimously to lease GridSolar City-owned property for the development.

6.5. The MPRP cannot meet the Less Environmentally Damage Practicable Alternative (“LEDPA”) Requirement Under Section 404 of The Clean Water Act and Therefore Cannot Be Permitted

The contrast between GridSolar and the MPRP is equally sharp on other environmental matters. Whether it is impacts to endangered species from river crossings or the destruction of sensitive wetlands, the MPRP imposes far greater damage to Maine’s environment than the GridSolar Project. We note that on these issues, the Commission must ultimately defer to pending determinations by the U.S. Army Corps of Engineers about whether there is a Less Environmentally Damaging Practicable Alternative (“LEDPA”) pursuant to Section 404 of the Clean Water Act. *See* 33 U.S.C. § 1344; 40 C.F.R. § 230.10(a).

In this case, CMP will be unlikely to meet its burden to overcome the strong presumption built into the Army Corps Section 404(b)(1) Guidelines that there are less environmentally damaging alternatives to the MPRP. Under the guidelines, 40 C.F.R. § 230.10(a)

... no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences.

(1) For the purpose of this requirement, practicable alternatives include, but are not limited to:

(i) Activities which do not involve a discharge of dredged or fill material into the waters of the United States or ocean waters;

(ii) Discharges of dredged or fill material at other locations in waters of the United States or ocean waters;

(2) An alternative is practicable if it is available and capable of being done after taking

into consideration cost, existing technology, and logistics in light of overall project purposes. If it is otherwise a practicable alternative, an area not presently owned by the applicant, which could reasonably be obtained, utilized, expanded or managed in order to fulfill the basic purpose of the proposed activity may be considered.

(3) Where the activity associated with a discharge which is proposed for a special aquatic site (as defined in subpart E) does not require access or proximity to or siting within the special aquatic site in question to fulfill its basic purpose (i.e., is not "water dependent"), practicable alternatives that do not involve special aquatic sites are presumed to be available, unless clearly demonstrated otherwise. In addition, where a discharge is proposed for a special aquatic site, all practicable alternatives to the proposed discharge, which do not involve a discharge into a special aquatic site are presumed to have less adverse impact on the aquatic ecosystem, unless clearly demonstrated otherwise.

Under these guidelines, CMP must show that there are no practicable alternatives to the MPRP that would not result in greater damage to Maine wetlands. CMP can make no such showing. In fact, CMP's own analysis demonstrates just the opposite. The NTA study that LaCapra performed demonstrates that there are multiple alternatives to the MPRP that can meet project purposes – maintaining reliability of CMP's bulk power system – and do so with the same or better effect. Similarly, GridSolar has also demonstrated an alternative to the MPRP, the GridSolar Project, that CMP and other parties in this case acknowledge provides the same or better reliability as the MPRP.

Second, there can be no argument contradicting the conclusion that all of the alternatives identified in the LaCapra NTA analysis and the GridSolar Project are capable of being implemented and rely on existing technologies. Further, while cost socialization may distort the costs faced by Maine ratepayers, all of the alternatives are less costly in total than the MPRP, which is the standard that applies under Section 404.

Finally, each of the NTAs developed by LaCapra and the GridSolar Project can be implemented with significantly less destruction or damage to Maine's wetlands, and therefore without violating Section 404 of the Clean Water Act.

The LEDPA standard is a “strict” test; it does not permit mitigation or remediation. Taken together, this means that the MPRP is not LEDPA, and therefore cannot be issued a Section 404 permit. This issue is an appropriate consideration for the Commission, since it must accommodate environmental permitting determinations made pursuant to the federal Clean Water Act under both the Supremacy Clause of the U.S. Constitution and by design of the Commission’s own statutes. *See* 35-A M.R.S.A § 3132(7)-(8); cf 06-096 CMR § 310(3)(R) (Maine DEP LEDPA standard) with 40 C.F.R. § 230.10(a) (federal LEDPA standard).

7. Cost Socialization

From the outset of this case and, indeed, from the initial planning stages of the MPRP, one issue has stood above all others as the “raison d’etre” for the Transmission Solution. That issue is the ability to socialize the costs of the MPRP across the entire New England Control Area. Staff has acknowledged that the total costs of the MPRP are higher than those of each of the NTAs identified by LaCapra Associates:

As presented, the analysis defines “societal” costs as those paid only by Maine ratepayers, suggesting that the fact that the New England “society” would pay far more for the MPRP than comparable NTAs should not be relevant to the decision. The dilemma for the Commission here is whether to choose between an alternative one of which is cheaper from a global perspective but which would increase costs to Maine ratepayers and one which costs more globally but would be less expensive to Maine ratepayers. (Staff Bench Analysis, as corrected, page 43.)

Yet, despite its higher costs and despite the Staff’s statement that “Proper resource planning should not place a preference for transmission over generation. Rather, the least cost solution should be preferred.” (*Id.*, page 21), the MPRP remains CMP’s preferred solution.

For an issue that has been so central to the justification of the MPRP, cost socialization has received very little scrutiny by any party in this case except GridSolar. This Commission

cannot issue a CPCN to CMP for the MPRP without addressing the cost socialization matter head on, without repudiating its recent findings of fact, and without exposing Maine ratepayers to higher costs over the longer term and committing Maine to ISO-NE membership for the indefinite future.

7.1. The Commission Has Found as a Matter of Fact that the Socialization of Transmission Costs is Contrary to Maine's Best Interests and that Over Time Cost Socialization will be more Costly to Maine Than Other Cost Allocation Methods

Cost socialization did not burst on the Maine scene with the filing of the MPRP case by CMP. On the contrary, it has been a matter of great controversy since the initial establishment of ISO-NE.¹⁷ The phase-in of the full RNS tariff rate over 10 years was not designed to prevent rate shock; rather, its purpose was to permit those transmission utilities in

¹⁷ FERC Order in Docket No. OA97-237-000, issued April 20, 1998. *See* especially Paragraph 17, which states (footnotes omitted):

17. Transition Proposal

As noted, there is no transition for Through and Out Service and the final rate for this service is implemented immediately. The proposed transition for Regional Network Service delays implementation of a composite pool-wide PTF rate and adopts instead nine different postage stamp rates based on the PTF costs of the Local Network where the loads are located. While most Participants agree that the transition rate should be in effect at least five years, they could not agree on whether it should be continued for a longer period. NEPOOL proposes two alternatives and asks the Commission to choose between them. Alternative A adopts a transition rate for the first five years that the NEPOOL Tariff is in effect. Under this Alternative, the composite pool-wide PTF rate would become effective in Year 6. Alternative B is a 10-year transition plan that is identical to Alternative A for the first five years, gradually phases out the transition rate while phasing in the composite PTF rate over years 6-10, and places the composite pool-wide PTF rate in effect in Year 11.

Those Participants whose composite pool-wide PTF rates are lower than their Local Network rates support Alternative A, while those Participants whose composite rates are higher than their Local Network rates support Alternative B. Supporters of Alternative B argue that five years is too short a period to introduce the cost shifts that result from the pool-wide composite rate. Supporters of Alternative A argue that a ten year transition continues subsidies and preferences for too long a period of time. Some intervenors (*e.g.*, Bangor) argue that, if a composite pool-wide PTF rate is introduced before retail access is a reality, they will be forced to increase their bundled retail power sale rates before retail customers have the opportunity to take advantage of the Regional Network Service that is the basis for the composite rate. Bangor also claims that rejection of Alternative B would violate Section 16.11 of the NEPOOL Agreement which states that an amendment cannot become effective if it places a materially different burden on Participants that have not agreed to the amendment than those that have.

the New England region that had relatively little PTF plant and equipment to spend more money on transmission to achieve parity with other transmission utilities in the region in what Bangor Hydro has called their “RTO Benefit Factor”.¹⁸

From these dubious origins, cost socialization has now come into its own as the most powerful investment incentive yet devised by regulated transmission utilities. As this case has demonstrated, the lure of only paying 8.5% of the total cost of a transmission project is very powerful. However, as Bangor Hydro foretold, as the Brattle Group projected, as this Commission concluded¹⁹ and as ISO-NE confirmed, when each transmission utility has the same incentives, the result is runaway investments in transmission and, of course, transmission rates. From an RNS rate of \$44.00 per kW/year in 2008, ISO-NE is now projecting a rate of \$116.00 per kW/year for 2013.²⁰ This represents an increase of 165% over a 5 year period, a rate of increase at which even insurance company executives would blush. This increase will cost a company such as Huhtamaki in Waterville over \$1 million a year. It is no comfort to Maine industry to have an overly reliable grid when they have shuttered their production lines and laid off Maine workers due to these types of rate increases.

It is precisely this result that led this Commission to make very specific “Findings of Fact and Conclusions of Law” in its orders in Docket No. 2008-156 regarding the matter of transmission cost allocation. Specifically, in the Phase 1 order, the Commission found:

¹⁸ PUC Order – Phase 1, Docket No. 2008-156, page 44.

¹⁹“The problem with this approach is that it encourages the promotion of transmission projects by transmission owners to ensure that they have a positive “RTO Benefit Factor.” Thus, a utility that currently has a negative RTO Benefit Factor would have the incentive to develop projects to increase their benefit factor. However, every time a project is built by one transmission owner, it affects the benefit factor of another. As a result there is a never-ending incentive for each transmission owner to build more in increase its benefit factor. When combined with incentive ROEs granted by FERC, consumers in Maine and the rest of New England face a greater risk or paying spiraling rates for new transmission as each transmission owner seeks to ensure that it has a positive RTO benefit factor.” PUC Order – Phase 1, Docket No. 2008-156, page 44.

²⁰ See ISO-NE response to ODR-13-54, February 25, 2010.

- ... that there are several significant disadvantages of the socialized cost allocation methodology currently employed by ISO-NE. First, socializing the costs of transmission upgrades does not provide appropriate price signals and incentives to prospective users of the transmission system. For example, a buyer may be considering two alternative resources. The first may have relatively high generation costs but is located close to load being served and requires little or no additional investment in transmission. The second alternative has lower generation costs but is located remotely from load and requires significant transmission expenditures. The economically rational choice is to pick the alternative with the lower combined generation and transmission costs. However, if transmission costs are socialized, then the rational buyer would always choose the lower cost remote generation alternative since the additional transmission costs are not internalized into the price paid by the buyer. Over time, this would lead to too much investment in transmission plant and greater total system costs. (Page 43)
- The status quo is inadequate in the areas of transmission cost containment, transmission cost allocation, and ISO-NE governance. (Page 63)
- Before renewal of the TOA occurs, however, the problems of transmission cost containment, transmission cost allocation and governance must be addressed. (Page 63)

The Phase 1 order was issued in January 2009. Six months later, following additional investigation, the Commission issued Phase 2 of its order in this same case. It is important to note that this investigation was proceeding contemporaneously with the MPRP case, which was filed by CMP on July 1, 2008. Accordingly, the Commission must have anticipated that its findings of fact and order in Docket 2008-156 would have specific and direct application in the MPRP case.

Much of the Phase 2 Order deals with matters related to the circumstances under which a Maine utility may withdraw from an RTO. However, a number of the findings of fact and conclusions of law address the matter of cost socialization:

- 22. If the MPRP is built as proposed and current projections of transmission investment in the rest of New England are accurate, Maine ratepayers' transmission rates, in the short to medium term, would be lower under the current ISO-NE system. (page 50)
- 23. In the longer term, unless cost containment and cost allocation issues are addressed at ISO-NE, Maine's transmission costs could increase to, or exceed, the level projected for MISA in the Brattle Report. (page 50)

These findings of fact derive from a study performed by the Brattle Group. The Commission Staff confirmed that no additional work was done by the Brattle Group in this case and that the results of the study remain unchanged. (Transcript, 2/10, Pages 219 – 220) Therefore, these findings of fact are not in dispute and must be relied upon by the Commission in this case.

The Commission noted that, "... it appears unlikely that the MISA model, in the short to medium term, would benefit Maine ratepayers, in terms of transmission rates. In the long-term, however, unless the unresolved cost containment issues at ISO-NE are addressed, Dr. Silkman's argument that Maine is better off being responsible for 100% of its own costs rather than 8.0% of the 'Big Dig', may be true". (Page 41)

We note here that the RNS rate used in the Brattle Group Study for 2012 was \$86/kW year. This study was done in the Spring 2009. It is not even a year later and already the 2012 RNS rate projection provided by ISO-NE is \$97/kW year, 13% higher in one year. And, the 2013 RNS rate of \$116/kW year represents an additional 20% increase. At this rate, the "longer term" will be upon us much faster than the Brattle Group may have anticipated, perhaps even before construction of the MPRP is completed.

The prior discussion points to a critical question, which is how can Maine ratepayers be certain that the supposed benefits they will receive if the costs of the MPRP are socialized will materialize in light of the Commission's finding that cost socialization is contrary to Maine's best interests and its direct order to CMP and BHE not to execute a new Transmission Owners Agreement ("TOA") that "frustrates the provision of our Orders."²¹ The answer, of course, is that no guarantee can be provided. CMP would not provide a guarantee that the costs of the MPRP will remain socialized over the full amortization period of the MPRP

²¹ Phase 2 Order, Docket No. 2008-156, page 50.

investment or that Maine's share would not exceed 8.5% of the associated revenue requirement. (Tr., 2/3/10, page 229.) Neither would ISO-NE, which went further:

MR. ROURKE: Well, I certainly can't provide a guarantee. It would, again, be a proceeding down -- down at the FERC. If the power pool were to break up and I'm assuming some sort of a rate settlement would come out of that, obviously no one here has any idea what that would look like.

(Tr., 2/2/10, page 57.)

The inability to state with any degree of certainty that the costs of the MPRP will be socialized over its life was clearly acknowledged by Staff under cross-examination:

DR. SILKMAN: Do you also see the fifth bullet under that Finding of Fact and Conclusion of Law where it says, "Before the renewal of any TOA occurs, the problems of transmission cost containment, transmission cost allocation and governance must be addressed." Do you see that?

MR. COHEN: Yes.

DR. SILKMAN: If the TOA is not renewed, perhaps because the issues of transmission cost containment, transmission cost allocation and governance are not resolved, do you know whether or not the costs of the MPRP, or at least that amount that's not yet recovered in rates, will be socialized?

MR. COHEN: I'm not sure I understood the question, Rich.

DR. SILKMAN: Sure. Let me repeat it. If the TOA is not renewed, and this is the TOA with CMP and --

MR. COHEN: Yeah.

DR. SILKMAN: -- Bangor Hydro --

MR. COHEN: Yeah.

DR. SILKMAN: -- and it's not renewed because of the Findings of Fact --

MR. COHEN: Yeah. Okay. I understand.

DR. SILKMAN: Okay?

MR. COHEN: Yeah.

DR. SILKMAN: Do you know whether or not the costs of the MPRP, and not that amount which is already in as CWIP, but anything that's not yet in rates -- do you know whether those costs will be socialized?

MR. COHEN: No, I don't think you can say that for certain. I think, during the course of the proceeding there was actually an issue with the cost that Bangor incurred for the NRI whether Bangor ratepayers would then, after a nonrenewal, will then be sort of left with trying to recover all those costs on their own. So I think it's an unresolved question.

(Tr., 2/10/10, pages 257-58.)

We suspect that an important factor in ISO-NE's or CMP's unwillingness to offer a guarantee is this Commission's finding of fact that cost socialization is not in Maine's best interests and in its order directing CMP not to execute a TOA that is contrary to the Commission's findings of fact and orders in Docket 2008-156. With this uncertainty hanging over their heads, it is not surprising that ISO-NE and CMP were unwilling to guarantee anything.

7.2. The Federal Energy Regulatory Commission Has Broadened the Definition of Transmission Equipment to Include Energy Storage Devices, Opening the Door to Consideration of Non-Transmission Alternatives on a Comparable Basis as Transmission Solutions, a Fact that Is Wholly Absent from the Record in this Proceeding

FERC has sent a clear signal in its order in the Western Grid case²² that energy storage devices, when operated for reliability purposes and not in a manner that is intended to influence energy market conditions, are wholesale transmission facilities. FERC is very clear that the extent of its ruling is only to the specific technology and its specific application in this case; FERC is also very clear, however, that its decision is based on the function performed by the facility and not by the form of the facility:

“We note that electricity storage devices, such as those that will be used in the Projects, do not readily fit into only one of the traditional asset functions of generation, transmission or distribution. Under certain circumstances, storage devices can resemble any of these functions or even load. For this reason, the Commission has addressed the classification of energy storage devices on a case-by-case basis.”²³

This decision has very important implications for this case, since components of each NTA identified by LaCapra Associates and the GridSolar Project are energy storage devices,

²² Federal Energy Regulatory Commission, Order on Petition for Declaratory Order, Docket No. EL10-19-000, 130 FERC 61,056, Jan. 21, 2010.

²³ *Ibid.*, at ¶ 44.

including batteries and potentially demand response resources.²⁴ To the extent that these components are deployed for the purpose of ensuring grid reliability and not in a manner designed to influence energy market conditions, they may be classified as wholesale transmission facilities, and therefore treated for cost allocation purposes in the same way as the MPRP.

Because the FERC decision was issued late in this proceeding, its effect on the identification and evaluation of NTAs is wholly absent from this case. This means that the MPRP, which CMP argues is the lowest cost option under the current transmission cost allocation scheme, is almost certainly not the lowest cost option when key components of NTAs receive comparable cost allocation treatment.

7.3. The MPRP is a “Poison Pill” that Will Tie Maine to ISO-NE for the Indefinite Future and Will Weaken any Leverage Maine May Have to Secure Favorable Changes in ISO-NE Rules, Operating Procedures and Governance

CMP would have us believe that the MPRP represents a “free lunch.” Maine gets \$1.5 billion of investment, and our ratepayers only have to pay for 8% of the cost. This Commission and the people of Maine should not be deceived. What ISO-NE and CMP are not telling us is that the MPRP will so distort CMP’s cost structure by elevating its RTO Benefit Factor that it, its ratepayers and the State of Maine will be tied for the indefinite future to ISO-NE and cost socialization, even as the price of cost socialization increases year after year after year as the other New England transmission owners invest in transmission to raise their RTO Benefit Factors.

²⁴ Demand response resources meet the Western Grid test – (a) they are called upon only in response to grid reliability emergencies; (b) they do not actively participate in energy markets; (c) they store energy by meeting a customer’s energy needs when called upon through other means such as production inventory, stored heat or cooling or fuel switching; and (d) they are operated under the direction of the ISO in a manner similar to the way in which high-voltage wholesale transmission facilities are operated.

But it is not just the rising costs of transmission that Maine will have to pay. Should it grant a CPCN for the MPRP, the Commission and the State of Maine will lose any negotiating leverage they may have with ISO-NE on all matters, and specifically with respect to those areas of deficiency in ISO-NE's rules, operations and governance identified by the Commission in its orders in Docket No. 2008-156.

Put simply, once CMP is the beneficiary of \$1.3 billion from ratepayers in other states, the ratepayers of the State of Maine will be buying a lot of lunches across the region.