

BEFORE THE PUBLIC UTILITIES COMMISSION OF  
THE STATE OF CALIFORNIA

Order Instituting Rulemaking Pursuant  
to Assembly Bill 2514 to Consider the  
Adoption of Procurement Targets for  
Viable and Cost-Effective Energy  
Storage Systems.

R.10-12-007  
(Filed December 16, 2010)

**COMMENTS OF DIVISION OF RATEPAYER ADVOCATES  
ON THE PROPOSED DECISION ADOPTING STORAGE  
PROCUREMENT FRAMEWORK AND DESIGN PROGRAM**

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## **I. INTRODUCTION**

Pursuant to Rule 14.3 of the California Public Utilities Commission's (Commission) Rules of Practice and Procedure, the Division of Ratepayer Advocates (DRA) timely submits these comments on the proposed *Decision Adopting Energy Storage Procurement Framework and Design Program* (PD) in the above-referenced docket. According to Rule 14.3(c), comments shall focus on factual, legal or technical errors in the proposed or alternate decision and shall make specific references to the record or applicable law.

## **II. DRA SUMMARY OF RECOMMENDATIONS**

In general, DRA supports the PD, but recommends the following:

1. The final decision should allow storage projects to count towards the targets upon contract approval by the Commission;
2. The Commission should allow shifting energy storage procurement across all domains<sup>1</sup>;
3. Commission approval of energy storage should be granted through applications rather than an Advice Letter process until the Commission gains sufficient experience:
  - a. The Commission should clarify that coordination with other activities requires discouraging over-procurement and clarifying when projects will count towards the targets;
  - b. The final decision should correct errors with regard to cost-effectiveness and establish a new phase which is critical to ensure a healthy and viable energy storage market;
  - c. The final decision should require a completion date for the "common evaluation protocols," and establish a clear directive on next steps;
4. A working group is necessary to establish a transparent process to develop the common evaluation protocols and preserve stakeholders' due process rights;
5. The final decision must clarify cost-effectiveness terminology and what the Investor Owned Utilities (IOUs) must submit in their applications to demonstrate reasonableness; and

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<sup>1</sup> Points of grid interconnection. PD, p. 15.

6. The final decision should direct Energy Division (ED) to create a market transformation planning methodology.

### **III. DISCUSSION**

#### **A. The PD Errs by Not Considering the Time Lag Issue; Storage Projects Should Count Towards the Targets Upon Contract Approval by the Commission**

The operational requirements of the PD create a situation where storage projects from the initial solicitation may not count towards the targets until after the end of the program in 2022.<sup>2</sup> Specifically, the PD states that the projects must be operational within four years of the solicitation date and must have been in operation for one year before it will count towards the targets.<sup>3</sup> The PD proposes the following procurement activities:

- (1) Solicitation applications filed by January 1, 2014;
- (2) The potentially lengthy process of approving the solicitation applications;
- (3) Issuing an RFO;
- (4) Evaluating bids;
- (5) Contract negotiations and filing the winning bids by the utility;
- (6) Contract approval by the Commission;
- (7) Potential four-year construction time; and
- (8) One-year operation requirement before counting towards the targets.

Table 1 below illustrates this process, and the resulting significant gap of up to eight years between the contract solicitation and when the project can reduce an IOU's targets obligation:

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<sup>2</sup> PD, p. 31.

<sup>3</sup> PD, p. 32; Appendix A, p. 9.

**DRA Table 1: Potential Time Lag from Solicitation to Target Dates**

Energy Storage Target Time-Lines									
Years	2014	2015	2016	2017	2018	2019	2020	2021	2022
Targets									
Application	1/1/2014								
RFO		1/1/2015							
Evaluation & Approval			1/1/2016						
Construction			Up to Four Years						
One year Operation								1/1/2021	
Counting towards target									1/1/2022

This process holds true for all solicitations. According to Table 1 above, the targets set for 2014 may not even be counted until 2022, after the program’s end, and projects started in 2020 may not count towards the targets until 2028. The IOUs could wait many years before meeting the targets within the current time frame, which discourages procurement for specific technologies. The eight-year lag will frustrate the target program’s purpose to procure and contract storage, and transform the market with new and emerging technologies. If adopted, the time lag will delay program evaluation and effectively disallow any course adjustments such as whether the overall targets should change.

While DRA agrees it is reasonable to set a deadline for the operation of storage projects, the one-year operations requirement and the four-year construction period are too restrictive in the context of the entire program. It is premature to require one year of operation given the variety of technologies and the emerging market. Furthermore, the solicitation applications of 2016, 2018, and 2020, and the program evaluations can identify the projects that are not operational, and have no chance of being operational, and revise the amount of MWs in compliance accordingly. Thus, DRA recommends the final decision delete the one-year operations requirement.

Similarly, there is no reason to require construction within four years of the solicitation<sup>4</sup> as technologies vary and non-operational projects can easily be accounted

<sup>4</sup> PD, Appendix A, p. 9.

for in solicitation applications and program evaluations. Some storage projects, such as pumped hydro, take much longer than four years to go through permitting and construction. Imposing this limitation would potentially prohibit some potential technologies from participating in the Request for Offer (RFO) process, thereby discouraging competition among the different technologies and resulting in potentially less optimal solutions with more expensive projects being selected at a higher cost to the ratepayers. DRA recommends the Commission replace the four-year requirement with a case-by-case determination based on the type of technology and need.

To ensure timely program administration, DRA recommends the Commission count projects towards the targets upon contract approval, delete the one-year operation requirement, and evaluate the reasonableness of the construction period on a case-by-case basis.

**B. The PD Errs by Using Conflicting Directives and Should Allow Shifting Energy Storage Across All Domains**

The PD sets MW targets for Pacific Gas and Electric (PG&E), Southern California Edison (SCE) and San Diego Gas & Electric (SDG&E) allocated in three categories based on the grid domains (points of grid interconnection): transmission-connected, distribution-connected, and customer-side applications.<sup>5</sup> The PD allows shifting procurement between the transmission and distribution domains, but it does not approve any shifting of MWs between the customer domain and the transmission and distribution domains.<sup>6</sup> DRA disagrees.

The PD fails to explain this limitation although it states that “there should be flexibility among all three points of interconnection to maximize and balance both developer and ratepayer value.”<sup>7</sup> In fact, the Conclusions of Law indicate that maximum

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<sup>5</sup> PD, p. 15.

<sup>6</sup> PD, p. 37.

<sup>7</sup> PD, p. 36.

flexibility between domains should be allowed, stating: “flexibility among grid domains eliminates the need to set a cost cap on storage procurement contracts.”<sup>8</sup>

DRA recommends the IOUs have flexibility to shift procurement between all three domains instead of just between the transmission and the distribution domains. If the need is higher than the designated target amount in any of the three domains, then the utilities should have the flexibility to procure higher amounts in the appropriate domains, with a corresponding decrease in other domains. Such a change allows the IOUs to meet identified needs optimally and maximize value for both developers and ratepayers.

**C. The PD Errs in Assigning Commission Approval of Energy Storage Contracts to Advice Letters**

Appendix A of the PD sets forth the “Energy Storage Procurement Framework and Design Program,” proposing the IOUs seek approval of winning contracts through an Tier 3 Advice Letter filing, and for non-conforming contracts—those not meeting the terms of the solicitation—through submission of an application.<sup>9</sup>

The PD fails to discuss its reasoning behind the approval mechanism using the Tier 3 Advice Letter process for winning bids. Other than meeting the requirements of Appendix A, not much more is required by the PD for the IOU to make its case before the Commission. The PD seems to suggest that in the case of a Tier 3 Advice Letter filing, so long as the winning bid is consistent with the terms of the solicitation, the project is reasonable.<sup>10</sup> DRA disagrees.

The Advice Letter process fails to allow enough time to review complex projects on a case-by-case basis. The Advice Letter process is intended to consist of “simplified reviews that are expected neither to be controversial nor to raise important policy questions,” and does not provide for evidentiary hearings.<sup>11</sup>

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<sup>8</sup> PD, COL # 33, p. 68.

<sup>9</sup> PD, Appendix A, pp. 8-9 (“The Advice Letter filing shall be limited to only those contracts that are consistent with the terms of the decision approving the solicitation application. Approval for non-conforming contracts shall be sought by IOUs via submission of applications.”).

<sup>10</sup> PD, Appendix A, p. 8-9.

<sup>11</sup> General Order 96-B, Rule 5.1.



As noted in both this PD and in the July 10, 2013 Assigned Commissioner’s Ruling (ACR), energy storage technologies are still emerging.<sup>12</sup> Given the nascent technology of energy storage, it is prudent for the Commission to gain experience through the application process before using informal proceedings to expedite approval. DRA’s caution is not intended to be a barrier in adopting storage technology. Rather, evidentiary hearings are essential to test the assumptions in the cost-effectiveness common evaluation protocols—which yet have to be developed—or the utilities’ own cost-effectiveness methodologies. Until the Commission gains more experience with, and understanding of, energy storage technologies, it is necessary to preserve the parties’ access to evidentiary hearings. Absent a thorough review, the Commission may violate its statutory obligation to ensure that energy storage services are “just and reasonable.”<sup>13</sup>

Finally, although it may appear the Advice Letter process may provide an expedited approach to approve projects, this is not a guarantee. Advice Letters can certainly be delayed for long periods of time, even longer than the application process, which statute requires the Commission to resolve within 18 months.<sup>14</sup> For instance, the Commission is still considering PG&E’s 2010 request for approval to purchase renewable energy credits from Barclays Bank PLC.<sup>15</sup> Although PG&E submitted a supplement to that Advice Letter this year, stating that the amended contract better reflects the current value of Renewable Energy Credits, there is currently no Draft Resolution to address the Advice Letter and it is unclear when and if the Commission will approve the contract.<sup>16</sup> With an application, on the other hand, parties may seek a motion for expedited treatment, and the Commission often grants a motion to do so. For example, PG&E’s Smart Grid Compressed Air Energy Storage (CAES) demonstration

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<sup>12</sup> PD, p. 7.

<sup>13</sup> P.U. Code § 451.

<sup>14</sup> P.U. Code § 1701.5 (“[T]he commission shall resolve the issues raised in the scoping memo within 18 months of the date the scoping memo is issued.”).

<sup>15</sup> Advice Letter 3600-E, filed January 26, 2010.

<sup>16</sup> Supplemental Filing to Advice Letter 3600-E-C, filed May 17, 2013, *available at* [http://www.pge.com/nots/rates/tariffs/tm2/pdf/ELEC\\_3600-E-C.pdf](http://www.pge.com/nots/rates/tariffs/tm2/pdf/ELEC_3600-E-C.pdf).

project (Application (A.) 09-09-019) lasted four months from application to decision.<sup>17</sup> Moreover, Public Utilities Code § 454.5(c)(3) states that the Commission shall provide for expedited review and either approve or reject the individual contracts submitted by the electrical corporation to ensure compliance with its procurement plan.

The Commission should not favor the Advice Letter process in order to hasten market transformation. Rather, a more prudent and reasonable approach is to maintain parties' rights to hearings given the uncertainty and variety of energy storage projects in the utilities' upcoming solicitations. Smaller, less-complex projects that can easily be classified as cost-effective may utilize the expedited application process. Commission approval of energy storage should be made through applications rather than an Advice Letter process until: (1) Commission gains sufficient experience with the technology; and (2) adopts a final common cost-effectiveness framework that can determine the value of the proposed program.

**D. The PD Errs Because Coordination with Other Activities Requires Discouraging Over-Procurement and Clarifying When Projects Will Count Towards the Targets**

The PD emphasizes coordination among storage and other proceedings that impact storage procurement.<sup>18</sup> To ensure consistent treatment of storage, the PD emphasizes that the rules and requirements of Long Term Procurement Planning (LTPP), Renewable Portfolio Standard (RPS), Resource Adequacy (RA), and the Self-Generation Incentive Program (SGIP) will apply to energy storage.<sup>19</sup> DRA agrees. However, the PD commits factual error in failing to consider concerns regarding over-procurement when meeting target goals and clarifying coordination between proceedings.

First, the Commission needs to ensure the storage program does not encourage over-procurement by clarifying that not only will procurement from other proceedings count towards the storage targets, but vice versa—that procurement from the storage

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<sup>17</sup> D.10-01-025, p. 5 (“In addition to setting the Prehearing Conference (PHC), the ALJ ruling held that this Application would be considered under the expedited process established by D.09-09-029, set deadlines for protests or comments accordingly, and requested PHC statements.”)

<sup>18</sup> PD, p. 63.

<sup>19</sup> PD, p. 63.

program will count in other relevant proceedings as well. For instance, if an IOU finds a storage project too expensive for RA, but later procures a storage project under the Storage Framework Solicitation that could satisfy RA requirements, then the storage project should count towards the IOU's RA obligations. It is counter-productive and costly for an IOU to procure a non-storage project to meet RA need, when a storage project it procures under the storage targets program could satisfy the RA requirement but was not counted. In short, coordination among the proceedings should prohibit double procurement for similar or identical end-uses.

Second, it is unclear from the PD if projects that do not bid into the Storage Framework Solicitation will count towards satisfying the storage targets. The PD states procurement from other proceedings will count towards the storage program targets.<sup>20</sup> Elsewhere, the PD states the storage procurements associated with RA and LTPP will count towards the targets but “projects procured pursuant to any other Commission authorization in other proceedings may not bid into the competitive solicitations under the Storage Framework.”<sup>21</sup> This statement seems to indicate only storage projects authorized by the Commission underway in the RA and LTPP proceedings will count towards the targets. These restrictions are contrary to the PD's overall coordination goal of collectively counting towards the targets storage procurement from other parallel activities, which will not use the Storage Framework Solicitation process.<sup>22</sup> There are a variety of projects that may not require Commission approval because they are not directly ratepayer funded, such as PIER- or EPIC-funded projects.<sup>23</sup> As such, it is important to ensure that all storage projects, even those outside the Commission proceedings count towards the targets. The sentence should be replaced with “If the storage project is procured via other proceedings or initiatives, then the same project may

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<sup>20</sup> PD, p. 63.

<sup>21</sup> PD, p. 33.

<sup>22</sup> PD, p. 63.

<sup>23</sup> PD, p. 28.

not bid into the Storage Framework Solicitations, but will count towards to satisfying the targets.”

**E. The PD Should Correct Errors With Regard to Cost-Effectiveness and Establish That a New Phase is Critical to Ensure a Healthy and Viable Energy Storage Market**

The PD commits legal error by failing to establish a new phase to finalize the cost-effectiveness protocols. A new phase is essential for three reasons: (1) the PD lacks a schedule and a final date to complete the “common evaluation protocols,” nor is there an order to submit the protocol for final Commission approval through an Advice Letter filing; (2) the lack of process transparency potentially violates interested stakeholders’ due process rights; and (3) the PD should clarify its use of terminology and when it is proper to use “cost-effectiveness methodologies” versus the “common evaluation protocols” and when the IOUs are to use them for “bid evaluations”<sup>24</sup> or during the Commission’s evaluation for reasonableness.

Without formal adoption of a “common evaluation protocols,” it would be a huge waste of ratepayers’ time and money should the utilities not be able to utilize a common framework. Reviewing each storage project using a different cost-effectiveness methodology on a case-by-case basis would be time consuming, could lead to disparate treatment among similar types of projects, and will likely slow down market transformation.

**1. The PD Lacks a Final Date to Complete the “Common Evaluation Protocols,” and Fails to Establish a Clear Directive on Next Steps**

The PD acknowledges a variety of cost-effectiveness evaluation mechanisms proposed by various parties, yet the PD allows the IOUs to propose their own methodology to evaluate the cost and benefits of bids.<sup>25</sup> The PD also requires the IOUs to work with ED to develop a “common evaluation protocol” using the use-case framework and the reports submitted by Electric Power Research Institute (EPRI) and

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<sup>24</sup> PD, p. 59.

<sup>25</sup> PD, p. 59.

DNV KEMA Energy & Sustainability (DMV KEMA).<sup>26</sup> DRA agrees, in part, but the PD commits legal error in failing to establish a clear directive moving forward, and potentially denies stakeholders due process rights in developing these “common evaluation protocols.”

The PD lacks clear direction regarding the development of the “common evaluation protocol,” including providing basic criteria. While the PD instructs the IOUs and ED to create a consistent set of assumptions for valuing benefits, the PD fails to identify specific criteria that should be part of the analysis. At the very least, the PD should propose a set of basic principles from reports offered on the record, given the extensive effort parties have made in workshops and in comments.<sup>27</sup> In addition, as part of a comprehensive cost-effectiveness evaluation, the PD should order that the “common evaluation protocol” describe the specific storage project, and value the applicable end-uses<sup>28</sup>, such as ancillary services and voltage support.<sup>29</sup> The “common evaluation protocol” should also utilize publicly available data, to the extent available. The value of energy storage should be considered for as many end-uses as possible compared to the cost. That additional analysis will enable the Commission and stakeholders to better understand how the IOUs use the storage, whether for one use or multiple uses, and how the values compare to each other. DRA recommends the Commission order the utilities seeking contract approval include cost-effectiveness analysis based on valuing applicable end-uses specific to the storage project for which the IOU seeks approval.

It is also unclear whether the utilities may propose their own cost-effectiveness methodology to value to the end-uses when submitting their storage applications for Commission approval, or whether the “common evaluation protocol” will be submitted *in addition* to its application for Commission approval. This should be clarified in the final

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<sup>26</sup> PD, p. 59.

<sup>27</sup> PD, p. 5 (stating that between September 2012 and March 2013, Energy Division held five workshops regarding cost benefit models and use case development).

<sup>28</sup> *Assigned Commissioner’s Ruling Proposing Storage Procurement Targets And Mechanisms And Noticing All-Party Meeting (ACR)*, June 10, 2013, pp. 12-13, which cites 21 specific end uses.

<sup>29</sup> ACR, pp. 12-13.

decision. DRA does not have a recommendation at this time until it is clarified a final the common evaluation protocol is determined.

**2. A Working Group is Necessary to Establish a Transparent Process to Develop the “Common Evaluation Protocols” and Preserve Stakeholders’ Due Process Rights**

The PD commits a potential due process violation because it does not offer a transparent process where interested stakeholders can evaluate the “common evaluation protocol.” Given the fact the protocols will be used to evaluate the reasonableness of costs, DRA must ensure the protocols are *useful*, so that the Commission can make reasonable findings that energy storage costs and benefits are both just and reasonable.<sup>30</sup> DRA recommends the Commission order ED to establish a working group<sup>31</sup> in the new phase, open to interested stakeholders and intended to create the basic parameters of the cost-effectiveness protocols.

DRA can provide useful input in finalizing the energy storage protocols. For example, the Commission should consider utilizing some of the lessons learned in the development of the demand response cost-effectiveness framework and models, which is also seen as a supply-side resource. Also, given the variety of storage end-uses and the emerging market, creative funding strategies should be accorded higher weight in determining cost-effectiveness of energy storage. Alternative funding, such as from other government initiatives and in-kind contributions from vendors that reduce the ratepayer’s burden and help to improve the likelihood of success, should be given higher weight. In doing so, the Commission can encourage alternative funding collaborations in the competitive procurement process. It should be the Commission’s end goal to utilize a consistent evaluation protocol for evaluating cost-effectiveness for final energy storage projects to provide a consistent comparison across utilities, bids and use-cases, and have

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<sup>30</sup> PD, Appendix A, p. 6 (emphasis added).

<sup>31</sup> A working group is a smaller task force, focused on a specific objective—as opposed to a larger workshop where parties brainstorm and discuss ideas in an open forum in the hope of coming to consensus.

a benefit-to-cost ratio of at least more than one in order to be selected on a competitive basis.

**3. Cost-Effectiveness Terminology Must be Clarified As Well As What the IOUs Must Submit in Their Applications To Demonstrate Reasonableness**

It is unclear what the PD means by, “we shall allow the IOUs to propose their own methodology to evaluate the cost and benefits of bids,” as it relates to the proposed “common evaluation protocol to be used in *bid evaluations*.”<sup>32</sup> While DRA agrees that the IOUs may use their own internal evaluation processes to evaluate bids in their respective competitive solicitations, it is unclear whether the PD is indicating that the “common evaluation protocol” will be used during the bid evaluation process in the solicitations or whether the PD meant it will be used to evaluate winning bids and resulting final contracts that will be submitted for Commission review.

**F. The PD Errs by Not Providing Guidance to Evaluate Market Transformation**

The market transformation goal of the storage procurement program is—in the short term—to encourage cost-effective procurement of emerging storage technologies, and—in the long term—to eliminate targets when storage is more mature and competitive with traditional options.<sup>33</sup> The PD requires an Energy Storage Procurement Program evaluation to study whether the storage program achieves market transformation goals.<sup>34</sup> The evaluation must be completed by 2016, followed by an evaluation at least once every three years through 2022.<sup>35</sup>

The PD fails to provide guidance on the information necessary to conduct an accurate evaluation of market transformation. DRA recommends the IOUs collaborate with ED to create a market transformation planning methodology. The methodology must define the market and the baseline from which to measure market transformation progress. In addition, the parties must create a data gathering and reporting procedure.

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<sup>32</sup> PD, p. 59 (emphasis added).

<sup>33</sup> ACR, p. 3; PD, pp. 6-7.

<sup>34</sup> PD, Appendix A, p. 9.

<sup>35</sup> PD, Appendix A, p. 9.

A market transformation planning methodology evaluates whether the energy storage targets program achieves the goal of encouraging emerging technologies. DRA recommended similar market transformation planning in energy efficiency.<sup>36</sup> The steps include defining the market, understanding the dynamics of the market, defining the intervention (new product, service, or business model), defining the desired difference the intervention should cause, and developing a baseline from which to measure the desired outcomes. The steps are set forth in the Attachment.

Preliminarily, the IOUs should determine the data necessary to define the market. There are four components to defining the market: (1) a set of actual or potential customers; (2) for a given set of products or services; (3) who have a common set of needs or wants; and (4) who reference each other when making a buying decision.<sup>37</sup> In addition, the parties must determine the baseline from which to measure the desired difference that the storage targets program seeks to accomplish. The data from the IOUs may include an evaluation of the number and types of storage buyers, the types of storage for the different uses, and which buyers will communicate with each other about their purchases. Other useful data may include the price of flexible capacity and net qualifying capacity, and the number of storage projects built during the targets program.

Only with a baseline can any future progress evaluation occur; thus a baseline must be set before program implementation. The PD already orders the IOUs to confer with ED after adoption of the decision to establish a common cost benefit evaluation protocol.<sup>38</sup> As such, the Commission should also order a new phase to establish a market transformation planning methodology and create a data gathering and reporting procedure. ED should also engage interested stakeholders to participate. After the development of the market transformation planning methodology and collecting the necessary preliminary data, the IOUs' data collection activities should be part of the

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<sup>36</sup> DRA's Comments on the November 7, 2011 Market Transformation Indicator Workshops [R.09-11-014], dated Nov. 21, 2011, pp. 2-3.

<sup>37</sup> Geoffrey A. Moore, *Crossing the Chasm*, First Collins Business Edition 2006, pp. 28-30.

<sup>38</sup> PD, p. 59, Appendix A, p. 6.



January 1, 2014 application for solicitation proposal.<sup>39</sup> The application requires the IOUs to include references to needs and planning studies, operational requirements, and cost benefit analysis methodology.<sup>40</sup> A description of the type of data to be collected and how it will be reported to ED (or an ED-supervised consultant)<sup>41</sup> will ensure that appropriate and adequate data will be available for accurate evaluations.

#### **IV. CONCLUSION**

DRA respectfully requests the Commission adopt the DRA's recommendations in the attachments.

Respectfully submitted,  
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<sup>39</sup> PD, p. 52.

<sup>40</sup> PD, Appendix A, pp. 5-6

<sup>41</sup> PD, p. 62, Appendix A, p. 10