

Comments of DRAM Coalition on DRAFT DOE Report to Congress

January 1, 2006

A. Overall Comment

The high quality and quantity of thought and information in the Report is remarkable given that it was accomplished under a very tight time constraint. The wealth of information compiled and newly processed in the Report will be very valuable to various audiences, both those that are well versed in demand response and those that are new to the subject. DRAM applauds DOE and its Report Team and provides comments below mainly in the vein of adding to the report in certain areas that may be conspicuous by their absence. Some specific requests for changes or corrections are also included.

B. Major Issues

1. Short-Term vs Long-Term DR and the use of DR as an option for deferral/optimization of transmission and distribution

The EPACT Provision which is driving the DOE Report to Congress requests recommendations relative to DR that can be achieved by January 1, 2007. This by itself would seem to indicate that the sole purpose of the Report is to discuss and recommend actions related to short-term demand response programs. But the overall thrust of Section 1252 of EPACT is to provide a broad framework and a solid foundation that allows demand response to become a more serious energy option in the policy, planning and operational mix over the long term.

Compared to discussion of short term demand response, there is not much mention in the Report of the importance of long term DR/ Yet institutionalized, longer term DR programs can be a major factor in ensuring reliability and in optimizing the system. Demand response is not all about market pricing or avoiding or deferring the next peaking unit, as evidenced by the work underway in the Pacific Northwest to incorporate DR into transmission planning and operations. The same could be said about the targeted DR programs in Southwest New England where grid capacity has been the issue. Yet another example is the increasing focus within the various arms of GridWise, ostensibly grid-driven efforts, on DR.

DR needs to be thought of by policy makers on Capitol Hill and elsewhere as an essential element of the smart grid and not just of keeping the lights on during a peak emergency. The Report should help policy makers understand that.

Relative to this discussion, DRAM suggests the following specific modifications in Section 2.2: (additions in italics)

“In recent years, there has been growing consensus among federal and state policymakers that insufficient levels of demand response exist in the U.S. electric power system (EPACT 2005, FERC 2003, NARUC 2000). Due to its physical properties, electricity is not economically storable at the scale of large power systems. This means that the supply of electricity must precisely equal consumers’ demand for it in real time. Electricity also has few substitutes for certain end uses (e.g. refrigeration, lighting). The marginal cost of supplying electricity is extremely variable because demand fluctuates cyclically with time-of-day and season and can surge randomly due to unpredictable events (e.g., extreme temperatures) and because generation or transmission capacity availability fluctuates (e.g., due to a generation plant outage or transmission line failure). Typically, wholesale electricity production costs vary on very short timescales (e.g., every 15 minutes, hourly), while most consumers face retail electricity rates that are fixed for months or years at a time, representing *average* electricity production costs. *This short-term disconnect extends to constraints at transmission and distribution levels with long-term implications. Demand response can be used to defer generation, transmission, and generation investments in the longer term.*

This disconnect between short-term *and long-term* marginal electricity production costs and retail rates paid by consumers leads to an inefficient use of resources. Because customers don’t see the underlying short-term cost of supplying electricity, they have little or no incentive to adjust their demand to supply-side conditions. Thus, they tend to over-consume – relative to an optimally efficient system – in hours when electricity prices are higher than the average rates they pay, and under-consume in hours when the cost of producing electricity is lower than average. Thus, electricity costs may be higher than they would otherwise be because consumers are not adjusting their usage in response to high marginal prices (i.e., they are price inelastic). The lack of price-responsive demand also allows generators to raise prices above competitive levels and exercise “market power” in certain situations. *The lack of dispatchable, controllable demand response is also a forgone opportunity to defer generation, transmission, and distribution over the longer term, and save consumer unnecessary costs. Demand response provides an alternative to these investments in some circumstances, when it can be installed in targeted ways, rapidly, and at lower costs”*

2. Price-induced DR Programs vs. Reliability/Reduction DR Programs

The Report does a good job of addressing and documenting price-responsive DR. More discussion and acknowledgement of load responsive DR is necessary, however. In Chapter 4, much of the discussion is on price responsive programs. This is exemplified by Table 4-4, where most of the programs cited are price-based programs.

There have been great strides made in recent years in the development and implementation of the DR business model whereby a party aggregates and manages a “negawatt” block of DR and provides such to a Load Serving Entity in a manner equivalent to that of a conventional peaking resource. This DR model should be

included and addressed throughout the Report to a greater extent, even if there is less data available on it.

3. Energy Efficiency and Demand Response

A major issue with demand response, although one not often discussed, is the interrelationship between energy efficiency and demand response. Many of the demand response efforts to date do not even monitor or measure DR activity to determine whether there is a net conservation effect from such activity. While efficiency is frequently accepted as being capable of yielding demand response, DR is rarely if ever considered to be something that yields efficiency and it is considered by many parties, particularly in the environmental and efficiency communities, to not create any net conservation impact at all; indeed, some consider the default situation to be one where DR results in *increased* usage.

More discussion of this issue in the Report would be extremely important in trying to bridge the gap of understanding and acceptance that currently exists on this issue, including among policy makers. The Report should point out that energy efficiency does not just mean end-use efficiency. Just as CHP is now seen as a different type of efficiency, DR needs to be also seen as a different type, i.e. making the entire system of generation and transmission more efficient. The Report should also specifically state that in research to date, DR has not been shown to lead to increased usage overall. On top of making that statement, the Report should also cite from the attached article that shows that in fact most DR programs have been shown to have an overall conservation effect.

4. Study vs Action; Lead Time

The Report calls for increased studies and analysis and the development of structures and frameworks for doing so. DRAM agrees with this. But the Report might also make more of an effort to convey that all of this work is not necessarily a threshold to an increase in DR activity at present or in the near term.

The Report does not necessarily convey any sense of urgency or timescale for demand response to be a contributing factor to the U.S. energy mix. It leaves the reader with no sense of what the lead time is for DR to be available as a resource given such factors as infrastructure deployment, regulatory proceedings, etc.

The EPACT language indicates that the Congress is focused on how soon DR can be injected into the energy mix, even picking a target date of 2007. The Report does a good job of explaining why the 2007 date is difficult to deal with. The Report should also address the issue of what the potential timelines for action and DR delivery are. It is important that Policy Makers understand that if they wish to have DR available as a resource, they need to undertake the preparatory work now.

5. Significance of advanced metering

The Report may at present underemphasize the significance of advanced metering to demand response and its role as the core technology that enables demand response. While advanced metering is not needed for every type or instance of demand response, the ability to measure usage according to the time it is used is the essential element for demand response, i.e. providing a price signal or incentive based on time of use (or reduction).

6. Inadequate funding of DR to date

A significant addition to the Report would be to state the amount of funding/investment that has gone towards DR to date, especially when compared to other energy options. LBL has included slides in public presentations showing the very low amount devoted to DR and this is an important point for policy makers and others to understand.

This is particularly the case with Congress, the main target of the Report. Congress must each year make decisions on how to allocate federal funding. These decisions will impact the amount of funds, if any, that go towards demand response – including to fund the very studies, analysis, etc that the Report calls for as being necessary to advance the ball on DR.

The Report needs to appropriately and correctly paint the picture of demand response as an energy sector that receives essentially no public funding or investment but which should be considered for such – not because DR is not cost effective on a project basis, but because just as with energy efficiency, renewable energy, fuel cells, etc, it requires a framework and base of support to allow it to accelerate beyond the trajectory it may currently be on.

7. Confusion between Report Recommendations and EPACT requirements

While the Report appropriately acknowledges EPACT and its demand response provisions in addition to those requiring this Report, some of the recommendations in the document are often difficult to identify as different from the other EPACT DR provisions. This is particularly the case with the new PURPA provisions in Section 1252 of EPACT.

It may be that the Report intends to ratify the importance of these provisions and convey that message to state policy makers and other target audiences. If so, then language might be modified to address this objective.

8. Insufficient discussion of what Congress can/should do

It is DRAM's understanding that in requesting that the Report be produced, the Congress was seeking not only recommendations as to what state policy makers and other DR actors could do, but what it as a body could do to increase the amount of DR in the U.S. The Report does not seem to include the Congress as one of its target audiences and does

not seem to include any recommendations for possible actions by that body. Yet it may be the case that the Congress is expecting such.

DRAM believes that there are recommendations that can be made and included such as those in its original comments submitted prior to the issuance of the Draft Report. DRAM understands that the Department is not in a position to endorse specific recommendations but yet believes that providing possible policy actions might be appropriate.

9. Importance of highlighting that DR is also a customer tool

DR is first and foremost thought of in terms of it being a tool that can be used to positively impact the electricity system or market. DR needs to also be thought of as another tool for customers to use in trying to manage their energy usage and reduce their energy costs. Public policy needs to focus on both levels - system/market levels and customer. The Report would benefit from more attention to the fact that DR is a new option for customers as well as energy providers and other components of the industry. More acknowledgement of this in the benefits discussion would be beneficial.

C. Technical Corrections

1. In Table 4.4 and elsewhere in Chapter 4, it should be made explicit that “normalized gross benefits” refers to \$ per system peak load (vs. \$ per DR KW enabled). As it is now, a reader might come away concluding that the gross benefit of enabled DR is about \$1.00 per kW per year.

2. On page 24, the Report states that “few customers have yet adopted fully automated demand response”. DRAM does not believe this is correct. One of the services that certain DRAM members provide is to automate customer sites for fully-automated demand response. As indicated elsewhere in DRAM’s response above, the DR provider model of demand response, which has seen rapid growth in recent years need to be more fully acknowledged by the Report. As to page 24, the statement should not stand as is; if a different point is being attempted, DRAM would be happy to discuss this issue to help clarify the statement.

3. Page 73 of the Report includes a recommendation on time-based pricing, yet the specific wording of the Report uses the word TOU. If the recommendation is intended to be only TOU, then DRAM disagrees. The wording should be changed to “time-based pricing” or something similar.

D. Further DRAM input

DRAM would be happy to further discuss the above comments at the Department’s convenience.

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