

## Energy - Docket Optical System

<b>From:</b> Joe Mathewson [jmathewson@dpsiinc.com] <b>Sent:</b> Monday, August 18, 2014 3:59 PM <b>To:</b> Energy - Docket Optical System <b>Cc:</b> Joe Mathewson <b>Subject:</b> DOCKET No. 14-CHP-1 COMMENTS AND SUGGESTIONS <b>Attachments:</b> DPSI_RESPONSE-STAKEHOLDER_QUESTIONS-FINAL.pdf; Energy Management Division #3.pdf; DPSI - GAS MANAGEMENT-Master Services Sheet.pdf	California Energy Commission <b>DOCKETED</b> <b>14-CHP-1</b> TN 73645 AUG 18 2014
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Gentlemen:

Attached are our Comments and Recommendations in response to the Combined Heat & Power Questions for Stakeholders

We are Energy Efficiency Engineers and Developers of CHP Projects and we have become frustrated and disenchanted with the Program due to its many roadblocks and conflicting regulations.

This is really a great Program that has been essentially ruined by the regulations and IOU's that govern it.

Hopefully this effort on the part of the CEC will help formulate a plan to build a better program, California needs it and, in light of the impacts of AB-32, it could be a savior of jobs and business in California, IF the regulatory mess is cleaned up and streamlined.

We thank you for the opportunity to submit our comments and we hope that someone will read them and take some of the advice we offer.

The one man that needs to be congratulated is Bryan Neff. He has fought a one-man battle to try to make CHP work.

We hope you will seriously consider the changes necessary to see CHP become the model for the rest of the Country.

Please feel free to call us at any time.

Best Regards,

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August 18, 2014

**California Energy Commission**

Dockets Office, MS-4

Ref: Docket No. 14-CHP-1

1516 Ninth Street

Sacramento, CA 95814-5512

**SUBJECT: Comments to Combined Heat and Power Questions for Stakeholders**

Gentlemen:

The following are our comments and response to many of the Questions asked by your office regarding the current deficiencies, road-blocks, and problems with the Combined Heat & Power Program currently in place within the State of California. CHP was a great concept and a program that could easily add another 3000 – 5000 MW per year of NEW and badly needed electrical power to the users of this State. Unfortunately, the Program is being mismanaged by the bureaucratic process and obstruction by the IOU's. Further, the program needs to be better organized, incentivized and recognized as beneficial to the development of available electrical power and the reduction of GHG at very little additional cost to the industrial power users in California. We hope the following comments will help your office and the CPUC better understand the problems and deficiencies in this current program.

**I. Market Characterization and the Benefits and Costs of Combined Heat and Power:**

**1. What benefits, if any, do existing small and large on-site and exporting CHP resources provide to electric utilities and the ISO?**

**Answer:** Both small and large CHP installations offer the utility many benefits that are not now being recognized, realized or supported by the utility. These include

1. It provides a reliable source of distributed generation electrical power potential often in areas that can use the power “across the fence” from where the power is being generated to the benefit of all parties.
2. For example, it is estimated that small and medium CHP systems installed in and around the California oil fields using stranded gas, flare gas or waste gas could easily generate upwards of 2000 megawatts of power to the grid or nearby customers at a low cost that would help replace a portion of the power generation being lost by the closure of San Onofre or other generating stations.
3. CHP offers stable, reliable, and consistent power to the grid, micro-grid or as a source of distributed generation taking loads off the grid.
4. CHP is also a source of “leveling” power needed to help stabilize the “intermittent power” being generated by the more favorably treated “renewables”.

**2. What benefits/attributes do grid operators want from new CHP resources? Under what circumstances can CHP provide those characteristics?**

**Answer:** The grid operators typically want system stability, reliability, and a consistent flow of power to help them offset the increasing impacts to the grid of the intermittent “renewable” power sources such as wind and solar. The current green focus on “renewables” seriously stresses the grid due to the intermittent and unpredictable nature of this type of power generation source. CHP installations can provide both a “leveling power” and peak power to the grid and can be an overall benefit to grid stability. Typical circumstances where CHP can provide grid stability, leveling and distributed generation abound. The unfortunate part of this equation is the lack of acceptance and recognition by the grid operator and IOU of the benefits of this efficient power generation source and their blockage or discouragement of such projects. Due to the lack of any stringent CPUC mandates, the Utility Companies and Grid Operators view CHP as “competition” and they have made it increasingly more difficult for CHP projects to derive any financial incentive or benefit. Further, their onerous, lengthy and costly interconnect requirements and the CPUC lack of enforcement of Rule 1613 continues to dissuade power developers from moving forward with viable CHP projects. Any CHP installation that operates 24/7 in a stable power generating mode, when connected to the grid, provides a constant, steady, reliable, and dependable power source that can be counted on by the utility and its rate payers. This additional source of electrical power should be actively supported and even mandated by the CPUC on the utilities by forcing them to make it easier for CHP generated power to be interconnected and the excess power exported, sold to, and utilized by the grid.

**4. What CHP cost studies are needed to better understand and compare CHP resources to other resources?**

**Answer: NONE ARE NEEDED.** The CEC has already studied this to death for over 5 years. **We don’t need more academic studies, we need ACTION.** CHP has been studied incessantly and all the studies come to the same conclusion. In fact the CEC’s own CHP manager, Bryan Neff led an excellent study from the Electricity Analysis Office called “**A New Generation of Combined Heat and Power: Policy Planning for 2030**” which is an outstanding document that clearly lays out all of the current, very depressing problems facing CHP. The economic benefit of CHP has been proven and demonstrated in case study after case study. Unfortunately, as outlined in his Report and its findings, the road blocks to CHP are a result of conflicting regulations, discouraging utility requirements, demand charges, feed-in tariffs, and lack of quantifiable and easily achieved incentives. All of these things make the CHP Program a complicated and self-defeating proposition without the resolution of some or all of these factors. In-short, **STOP THE STUDIES - TAKE SOME ACTION TO FIX THE PROBLEMS.** CHP is a great program but it is being destroyed by bureaucratic in-fighting and mis-management, conflicting agendas and regulations, unnecessary requirements, and the lack of meaningful and achievable incentives. **CHP is the “low-hanging fruit” of economical power generation at far cheaper costs and much greater benefit than anything SOLAR or WIND can provide.** The CPUC needs to correct the problems with the CHP Program and help this State and rate payers realize the benefits from this underutilized source of electrical power and

heat / chilling. It is absurd to me why the CPUC, CEC, CARB and their Air Districts and the IOU's ( that a regulated by the CPUC) cannot get together and work out the roadblocks, streamline the process and make this a model program for the rest of the U.S.

**5. What other categories of CHP benefit and cost are relevant, and how should each be defined and/or quantified in ways that are meaningful to the system and the State?**

**Answer:** The CHP program to date has been an abysmal failure due to the conflicting and uncoordinated regulations, the lack of adequate incentives, and the reluctance and lack of acceptance by the utilities that have made it extremely difficult to benefit from a good CHP project. The focus and incentives of the CEC and CARB have all been on “renewables” that would all fail on their own without substantial incentives. The only way CHP will become an effective and beneficial program is if the CPUC, the CEC, and the CARB all join together, examine their regulations and streamline, coordinate, and revise some of their current rules and regulations to remove the conflicts and current roadblocks to encouraging good sound CHP projects. It is inconceivable that in this entire State for the past five years only 25 successful CHP projects have been completed. That is a clear record of failure that none of the agencies seem interested in correcting and improving. This is clear negligence on the part of the CEC and CPUC.

**II. Economic Barriers & Regulatory Challenges to Combined Heat & Power**

**1. What are the most significant economic factors that contribute to the decision by a public or private developer to invest in CHP (e.g. upfront cost, ongoing operation and maintenance, electricity rates, price of natural gas, internal business decision making processes)?**

**Answer:** These obstacles are as follows:

- a. EVERYTHING currently being incentivized by the CPUC and CEC is funded and focused on supporting the “renewables” of wind and solar to the exclusion of the other more practical and cost effective power generation systems. Wind and Solar are “sexy” but are inefficient producers of expensive “intermittent power”. Without heavy subsidies these projects would be failures. CHP, which is much more efficient and cost effective, should be more favorably classified and given better treatment in the regulations.
- b. The Utility interconnect process is inordinately complicated, challenging, very expensive and far too lengthy. The processing charges and 18-24 month approval times are far too onerous and discourage developers from investing the time and money it takes to obtain the approvals needed. It is frustrating and too long a process that is totally unnecessary.
- c. Under Rule 1613 and Rule 21, the PPA process to export power to the grid with the utility is frustrating, lengthy, and in most cases, not worth the time or expense due to the length of time it takes, the high costs and discouraging treatment of CHP projects by the utility. It appears that the CPUC is so closely tied to and influenced by the Utilities they are supposed to regulate that CHP has little support where it matters most. This is a dire conflict of interest and is the primary cause of this program failing so badly.

- d. The lack of any meaningful incentive program, similar to that offered to “renewables” that can help justify and offset some of the capital costs related to a viable CHP project is a major deterrent to the planning and execution of CHP projects. The uncertainty and lack of any assurance that the power or excess produced can be exported and sold to the grid and the length of time it takes to get it done due to the length of approval time, utility requirements and complexity of the process is the biggest impediment to the Program.
- e. Under AB 32, there is no incentive or credit given for GHG reduction currently available for CHP that will help offset the costs of installing a system and GHG that will be emitted by the generating unit. CHP should be given its own set of emissions credits to act as an incentive to install these more efficient systems.
- f. The inability or difficulty of the developer (Without a better enforcement of AB 1613) to be able to both use some of the power generated by a CHP project on-site and at the same time export any excess power generated either to the Grid or “across the fence” to a nearby customer seriously limits the viability of many projects where CHP can be effectively employed.
- g. The favorable treatment given to MicroTurbines over I/C Engines, Gas Turbines and Steam Turbines is also something that should be revised.

**2. What impacts do departing load charges have on the viability of developing new CHP resources?**

**Answer:** The departing load charges are a complete negative and very detrimental to many CHP projects. They are both exorbitant, unnecessary and are actually IOU extortion and a way for the utility to penalize and discourage viable CHP projects. The CPUC/CEC can continue to “study this problem”, but until effective action is mandated by the CPUC, the departing load charges, interconnect charges, and difficulty obtaining a viable PPA with the utility to purchase any excess power generated by a CHP project are killing the Program. These are all negative deterrents to what otherwise would be very viable and beneficial CHP Program in this State. California and its electric customers are the losers and the utilities ALWAYS come out the winners by discouraging and dis-incentivizing CHP efforts and potential projects.

**3. Are exit fee allocations that continue indefinitely, without transition or restriction, appropriate for CHP facilities? If not, how should exit fees be allocated over time?**

**Answer:** Exit fees, like demand charges, are clearly extortion by the utility and an extreme deterrent to the CHP program. If a CHP project is a multi-year, reliable, stable, continuous power generation source, it should be encouraged and supported, not penalized. Once again, these fees could be set aside, revised or moderated by the CPUC who regulates the utilities to make the CHP program a much more beneficial and viable Program.

**3. What regulatory challenges and barriers lead to new-CHP project delays or failure (e.g? Interconnection process, financial incentives, contracting issues, cap and trade)? Please provide specific examples of how these challenges were, or were not, overcome.**

**Answer:** All of the challenges listed in this question are serious impediments and detrimental to the CHP program.

- a. The interconnection approval process is far too costly, lengthy, and discourages many projects that would otherwise be viable.
- b. The lack of meaningful, easily measured and verifiable financial incentives are a major factor in many projects either being not started or abandoned.
- c. The obvious bias and rewards for bio-gas, solar and wind projects at the expense of stable, reliable and low cost CHP power and heat generation is a major challenge.
- d. The favorable preference and regulatory bias of current CHP regulations toward MicroTurbines (48-66% efficient) over I/C Engine Generators that are much more efficient (86-88%) is really unacceptable. In this case again, the CEC is favoring a less efficient and less practical CHP generation technology over a proven, reliable and much more efficient I/C Engine technology - **this makes no sense.**
- e. The complexity and lack of enforcement of the requirements on the utilities to accept and purchase “exported power” at a reasonable rate in accordance with Rule 1613 is a serious problem that must be addressed by the CPUC.

**EXAMPLE:** One of our clients is producing 300 MCFD of pipeline quality gas that was stranded and had no buyer. They are flaring this gas due to having no other option. They had tanks and dryers and needed pre-heating of injection water so lots of heat was required but only about 0.5 MW of power was needed onsite. 300Mcf of gas will produce 1.5 MW of power and all the heat this field could use. This was a perfect situation for a CHP installation. They were using grid power and had put in \$800,000 of electrical power lines to the Lease themselves so they could get and use PG&E power. The really wanted a CHP project to work, but after looking at the uncertainty of the market for the excess power, and the costs and length of time to get approval from the IOU and their unreasonable requirements, these factors killed an almost perfect CHP project that would have benefitted all involved.

In short all of the items listed in this question seriously impact the viability of most CHP projects and are the principal reasons with the CHP program to date has been an abysmal failure.

**4. What regulatory changes, if any, are needed to better balance utility interests, CHP developer interests, thermal host needs, and State GHG reduction targets?**

**Answer:** The biggest changes that need to be implemented in the regulations deal with the following:

- a. Allowing the CHP developer to export power to the grid or “across the fence” to neighboring properties or businesses without undue regulatory requirements or utility restrictions or exorbitant charges.
- b. Giving CHP the same or similar classification and benefits as that currently enjoyed by renewables or at very least the same as being enjoyed by “microturbines”.
- c. Developing a better incentive program with less or easier to implement M&V administrative requirements and equipment.



**5. A key feature of AB 1613 is that it allows for export and payment of excess electricity.**

**a. Does the current AB 1613 feed-in tariff provide enough financial support to enable Individual projects to be sized and developed with appropriate technology to meet the Thermal load of the host facility?**

**Answer:** NO it does not. The whole AB 1613 needs to have some teeth in it to force the IOU to accept excess or exported power that is generated by a QF – CHP Project.

**b. How does the availability of the feed-in tariff affect your decision to pursue a CHP project in California?**

**Answer:** YES - Currently it discourages and it yet another dis-incentive to developing a CHP Project

**c. Are there any deficiencies in the current implementation of AB 1613? Please explain.**

**Answer:** YES – No teeth in the enforcement of it on the Utilities. Almost NO projects in California have been successful in the use of AB 1613. It's currently a joke and of little or no benefit.

**d. What should be done to better inform project developers about the requirements of the ISO and utility interconnection processes for electricity export?**

**Answer:** Standardize them. Simplify them. Make them uniform across all the IOU's. Publish them in a checklist form / format that eliminate the uncertainty and make it clear to all involved stakeholders what the rules are and that if they are followed, a developer can build his project within a reasonable timeframe.

### **III. Meeting California's CHP Goals**

**1. Is there adequate economic and technical potential for CHP resources to achieve State goals set out in the Governor's Clean Energy Jobs Plan (6,500 MW of new CHP capacity by 2030) and the Air Resource Board's Scoping Plan for AB 32 (6.7 MMTCO<sub>2</sub>E annual emissions reduction by 2020)?**

**Answer:** NO..... Not without some major coordination between the Agencies and the IOU's and some major changes in the current rules and regulations.

**2. How should the State meet these goals?**

**Answer:** Actively encourage CHP Projects at ALL Levels.

a. The CPUC needs to enforce Rule 1613 and make it easier to qualify projects.

- b. The CARB needs to get its districts to buy-in and accept a standard set of rules for CHP regardless of County.
- c. The CPUC and Legislature need to increase or make the incentives easier to qualify for and not so difficult to monitor and verify.
- d. CARB needs to allocate emissions credits under AB-32 for CHP Projects as a real incentive to developers and customers to install systems.

**IN SHORT** - If the regulator's simply got together and agreed upon a common sense approach and update and revise some of the complex / conflicting and discouraging rules, the CHP Program would thrive.

**3. Should the State set CHP procurement targets to address specific CHP facilities, projects, or technology types (e.g. existing efficient CHP, bottoming-cycle CHP, renewably-fueled CHP, new highly-efficient CHP)?**

**Answer:** NO - Just FIX THE RULES and CHP will takeoff and be a winning Program.

**4. Do the eligibility requirements of existing CHP programs align with market needs? If not, what changes are needed to stimulate market participation?**

**Answer:** NO -They do not. Too much emphasis on “renewables” and “microturbines to gain incentives at the cost of losing otherwise good CHP projects and the Power they can produce due to the lack of incentives and the more restrictive qualification regulations.

#### **IV. Technology Innovation to Overcome Combined Heat & Power Barriers**

**1.What are new opportunities and applications for on-site and exporting CHP resources both large and small (e.g. CHP coupled with Carbon Capture Utilization and Sequestration technologies, energy storage for excess electricity, thermal storage for excess thermal energy)? How should the state encourage these technologies (e.g. bottoming-cycle/waste heat to power, use of renewable fuels, micro grids)?**

**Answer:** The entire above listed are great technologies that are begging for a place to be tried and developed further. The oil fields of California are the absolute best incubators for many of these technologies, IF the incentives are there. The Oil Companies have money and are looking for ways to cut GHG expenses and improve efficiency and cut costs.

**5. Which technologies, systems, components, and applications should RD&D prioritize to advance the capabilities and opportunities of both small and large CHP?**

**Answer:** NO MORE R&D IS REALLY NEEDED. If the incentives are there, the marketplace will develop and install projects that work. Developers are all looking outside the box and seeking ways to improve energy efficiency and the utilization of CHP technologies. Spending time and money on R&D is an academic exercise that allows people to write papers. WE NEED REGULATORY CHANGE.





## SUMMARY OF COMMENTS:

We have the President of the United States requiring all Federal Facilities to support CHP by signing into law and mandating 4,000 MW of CHP. The EPA appears to be bending over backwards to support the use of CHP wherever possible. California with Governor Brown has set a goal of 6500 MW of additional CHP with a goal for emissions reductions equivalent to 4,000MW of new CHP generation by 2020. This came out of the Climate Change Scoping Plan (First Update). So where is the problem? The marketplaces has the answers and is willing to develop good CHP Projects but are being discouraged and frustrated by the conflicting, confusing and frustrating regulations and IOU requirements. There is no question that CHP is energy efficient for both electrical and thermal energy and is considered environmentally friendly

CHP offers the most efficient way to generate electricity and thermal energy. CHP offers tremendous economic and environmental benefits that support demand response so what is the issue here. IOU's are paid to support energy efficiency programs but also are required to protect their investors by using sound business practices which we see as road blocks to CHP. The report by Bryan Neff, "A New Generation of Combined Heat and Power: Policy Planning for 2030" clearly highlights the issues without more study or R&D.

Another document that presents an alternative plan is "Utilities and the CHP Value Proposition" by Anna Chetrum and Kate Farley. It was prepared for the "American Council for an Energy-Efficiency Economy". I believe their conclusion is the best way out to resolve many of the issues with the IOU's.

In closing, I would recommend that all stakeholder Agencies who are involved in this CHP failure read both of these documents because it recognizes the issues and offers solutions. In short, CHP has failed because the stakeholder Agencies do not and have not coordinated with a goal of making CHP a successful program. They have tweaked around the edges, but it needs some major regulatory coordination and desire on the part of the Agencies to build a successful program. I believe that Bryan Neff at the CEC is the man to lead this effort because of all of the people we have worked with in the various agencies, HE ALONE, stands out as understanding the conditions, requirements, regulations and the needs of developers and the industry in California and, MOST OF ALL – He wants to see CHP succeed as a Program.

I hope you find these comments to be helpful to your Goal of making CHJP a viable program.

Best Regards,

A handwritten signature in blue ink that reads "Joseph R. Mathewson". The signature is written in a cursive, flowing style.

Joe Mathewson



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