EXHIBIT NO. ___(DEM-11C)
DOCKET NO. UE-13____
PCA 11 COMPLIANCE
WITNESS: DAVID E. MILLS

BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

In the Matter of the Petition of **PUGET SOUND ENERGY, INC.** **For Approval of its March 2013 Power Cost Adjustment Mechanism Report**	**Docket No. UE-13____**

TENTH EXHIBIT (CONFIDENTIAL) TO THE PREFILED DIRECT TESTIMONY OF DAVID E. MILLS ON BEHALF OF PUGET SOUND ENERGY, INC.

REDACTED VERSION

MARCH 29, 2013

REDACTED

PUGET SOUND ENERGY, INC.

TWELFTH EXHIBIT (CONFIDENTIAL) TO THE PREFILED DIRECT TESTIMONY OF DAVID E. MILLS

FUNDAMENTALS AND MARKET PRICES AFFECTING APRIL 2012

By [redacted], El Niño appeared to be making a come back and tropical Pacific waters continued to warm. According to Bentek Energy, California would need very little power from the Pacific Northwest ("PNW") due to an oversupply of gas when they noted, "Gas prices in Southern California will have to remain low, and heat rates will have to remain high in order for the California gas supply surplus to be reduced to more normal levels by next winter. Gas prices at Sumas should remain under some downward pressure because California is expected to rely less this summer on southbound power transmission capacity". Natural gas storage in the West was 122 Bcf above the previous year, in the East was 78 Bcf above the previous year and in the Producing Region was 282 Bcf above the previous year.

In [redacted], with two weeks into the hurricane season, there had been only one tropical depression. The tropical Pacific was showing more and more signs of a developing El Niño and there was already plenty of wind shear (bad for storms) over the majority of the tropical Atlantic. Assets in the United States Natural Gas Fund ("UNG") swelled to around $3.7 billion from about $670 million in [redacted]. Funds holding commodities are typically restricted on the number of shares they can issue to meet investor demand, and the UNG was running out of shares, so the fund talked of filing with the SEC to increase the number of shares by ten times. The Fund's sheer volume and speculative approach

were creating a new dynamic in the natural gas market and creating very bullish sentiments.

By [redacted], although sea surface temperatures dropped in the tropical Pacific, subsurface temperatures continued to run well above normal. It was thought that El Niño could still develop through the [redacted]. The final runoff for the water year was 79 percent of normal. LNG was expected to increase in the [redacted]. Coal to gas substitution occurred during the spring months and was expected to return in the fall (1 Bcf to ½ Bcf incremental demand). Citing weakness in the Gross Domestic Product, continued shale gas development, new coal capacity, and new LNG, Wood Mackenzie delivered a bearish fundamental outlook for natural gas prices with calendar [redacted] at $4.50/MMBtu, calendar [redacted] at $4.75/MMBtu and calendar [redacted] at $5.20/MMBtu. For reference, the current [redacted] average price, at what date? July 2009? was at $5.54/MMBtu, [redacted] was at $6.44/MMBtu and [redacted] was at $6.74/MMBtu.

By [redacted], NOAA followed suit with other hurricane forecasters and lowered its tropical storms expectations due to the development over the past couple of months of an El Niño event. El Niño events tend to be associated with increased levels of vertical wind shear and decreased levels of Atlantic hurricane activity. PIRA estimated that storage levels by the end of [redacted] would reach 3.4 TCF and [redacted] estimates were 3.7 TCF, which was very close to the maximum estimated capacity of approximately 3.9 TCF. Total injections for [redacted] and the first week of [redacted] totaled 362 Bcf and the five years average was 285 Bcf. Global LNG spreads had narrowed significantly, which meant more chance of supplies coming to the U.S. In addition, the year over year natural gas storage deficit in Europe had evaporated.

By [redacted], a weak El Niño resulted in warmer winter forecasts for the northern U.S. west of the Mississippi River. After months of speculation about when natural gas production would begin to decline, the production numbers started to show the impact of lower active rigs. [redacted] production was estimated to be about 3 Bcf/day lower than [redacted]. The British Columbia government increased interest in active shale gas plays by offering a new package of royalty incentives to stimulate exploration and development.

By [redacted], forecasters were calling for a moderate El Niño for the next couple of months. With hurricane season nearing its end, there was still a chance that a storm could develop though less likely at this point in time. The [redacted] tropical season was shaping up to be a non-event for the natural gas market as no gas production was interrupted by storms during the season. The recent rally in natural gas prices was likely due to short covering, a lower probability of a storage induced price meltdown and declining production; however, with bearish [redacted] weather forecasts, the strength in natural gas prices could be short-lived.

By [redacted], the El Niño event was moving towards the moderate to strong range and weather forecasts for [redacted] and [redacted] were showing above normal temperatures for most of the nation. Natural gas storage was above both the five-year average and the previous year's level. An additional bearish indicator for natural gas was the increase in U.S. gas rigs, which were up 22 rigs for the week ending [redacted], the largest weekly increase in over a year. The hydro outlook for the [redacted] runoff season was off to a slow start given the warm weather. Water year precipitation to date was slightly

above normal, but snowpack, or snow water equivalent, was well below normal for the Mid-Columbia drainage basins.

By [redacted], weather forecasters officially called an El Niño event; however, there were two schools of thought on how long it would last. One expected a strengthening of the El Niño pattern which would result in above normal [redacted] temperatures. The other expected the El Niño to fade by [redacted], bringing colder-than-normal weather to the Northeast for the remainder of the [redacted]. Forecasts for [redacted]2010 continued to show a warming trend across the nation. [redacted] 2010 weather forecasts called for cold in the East and warm in the West. As a result, natural gas prices were ticking back up. Large withdrawals from gas in storage occurred this month due to the cold weather. The hydro outlook for the PNW was forecast to be 87 percent of normal, given the lack of precipitation.

In [redacted], cold weather was the theme. Despite starting the heating season at record natural gas storage levels, colder than normal weather in the East caused near record withdrawals. Forecasts showed continued cold weather in the East and warmer than normal in the West. Adding to the bullish sentiment in natural gas prices is the recent drop in Canadian imports. The hydro outlook in the PNW dropped from 90 percent of normal at the beginning of the month to a paltry 79 percent of normal by month end. However, bearish factors were also weighing in on the market. Production was showing signs of efficiency. While below historic high levels, charts are reflecting that gas production can be maintained at lower rig counts. That said, the number of rigs continued to climb year over year, suggesting supply may soon follow. In addition, nuclear generation output was lower compared to this time last year.

By [redacted], continued cold weather in the East combined with sustained high levels of withdrawals from storage, supported natural gas prices as the industry focused on end of season storage. While weather forecasts continued to show warm weather in the West, the East remained cold. Snowpack for the hydro dependent PNW was at 77 percent, well below normal, providing support for the Mid-Columbia power prices for the spring and summer. Early [redacted] weather forecasts were suggesting cooler than normal temperatures due to El Niño, providing some bearishness to the market. Rig counts continued to climb, suggesting that supply would be forthcoming.

By [redacted], natural gas withdrawals from storage continued to be strong compared to prior years and five-year averages. However, despite this being one of the coldest U.S. winters since the 1980's, gas prices started to fall as the end of the heating season approached. Increasing rig counts and decent production continued to create an overhang for the [redacted] gas balances. Domestic LNG forecasts rose with 3.3 Bcf/day expected. On the bullish side, continued below normal hydro expectations in the PNW –73 percent of normal – gave support to power prices.

By [redacted], recent guidance showing big changes in sea surface temperatures changed forecasts to a La Nina, increasing the probability of a warmer summer and cooler/wetter winter for the PNW. A preliminary forecast called for above normal storm activity for the [redacted] hurricane season. As for the PNW hydro outlook, both snow water equivalent and precipitation for the water year to date remained well below normal, continuing to support the power prices for the spring and summer months. On the bearish side, price softening, along with increased production, reduced the incentive to store gas,

causing a decline in demand. Production and rig counts remained stable, dampening supply concerns moving forward. PIRA forecasted incremental LNG flows into the U.S.

In [redacted], natural gas markets were up in reaction to the BP oil spill in the Gulf of Mexico ("GOM") that occurred in [redacted]. Market observers were also taking into consideration the initial summer weather forecasts calling for a hot summer, as above normal temperatures nationally and regionally normally cause increased demand which leads to price spikes. Additionally, the [redacted] hurricane season was quickly approaching and forecasters were calling for an above normal hurricane season. The regional hydro outlook continued at well below normal. Coal prices were up from the previous year, creating a floor for natural gas prices. On the bearish side, industrial demand remains down due to economic factors. Natural gas production continued to grow despite the stall in the economy, adding to the current over supply situation. The number of natural gas drilling rigs also continued to climb.

By [redacted], cooling of the Pacific waters continued and there were forecasts for a warmer than normal summer and cooler/wetter fall for the PNW. The GOM production continued to decline due to the federal government's drilling moratorium. Although the six-month moratorium should not affect the current oil and gas production, the ban could affect future supplies in the offshore areas. Gas production from onshore shale plays, however, will help offset the GOM declines. While the gas storage surplus started to shrink relative to the five-year average, inventory levels remained at a decent level. With production and rig counts stable, there were few supply concerns for the forward period.

[redacted] brought the first Atlantic hurricane of the season causing temporary production shut-ins. While we do see both bullish and bearish factors in the market, there

appeared to be a growing consensus that the more likely path for pricing is bearish. Stocks plunged as U.S. consumer data showed concerns about slowing economic growth in the U.S. This lack of confidence in the U.S. economy, combined with growing concerns that growth was also slowing in China, increased fears of a global economic reduction. High U.S. unemployment rates and the turmoil in financial markets precipitated by the European debt crisis raised the risk that household spending will continue to falter.

[redacted] brings no major changes in market fundamentals, yet the gas forward price curve for years [redacted] and [redacted] have declined $0.40 to $0.50 from the last month. On the bullish side, LNG imports are down, heat in the East is propping up gas demand and coal prices are up year over year. Bearish factors include gas production growth and drilling, specifically shale and heavy liquid rich plays, an on-going weak U.S. economy and consumer confidence, not to mention the halt of oil flow into the GOM as a result of the BP oil spill.

As PSE entered [redacted], conditions were present for a moderate La Nina, which typically reflects warmer than normal temperatures in the East and cooler, wetter weather in the PNW for [redacted] through [redacted]. Such temperatures could result in lower gas demand nationally and a healthy start to the hydro year for the PNW, which would put downward pressure on both gas and power prices. Despite the heat that covered the East during the past summer, prices have not rebounded, nor are they expected to, given the healthy gas storage inventory and increased horizontal gas rig drilling activity.

By [redacted], the scales definitely tipped to the bearish side for gas prices. Demand remained soft - yet production continued to rise. Natural gas storage was well supplied and amid forecasts for a mild winter in the East and Midwest and a possible

oversupply of natural gas, natural gas prices remain low. One of the few bullish factors at this time is the strength in equity and commodity markets which could potentially lend support to natural gas prices.

In [redacted], the bearish fundamentals continue. The cold weather in the East lends some short-term support to the natural gas market, but the overall winter forecast remained above normal for that region. Above normal precipitation in the PNW for the water year only adds to bearish sentiment for power and gas prices for the coming spring season, although it is early in the water year.

By [redacted], the scales have tipped to a more neutral territory for gas prices. The short-term cold weather in the East and the 11-15 day forecasts for continued cold in that region is propping up the natural gas prices. This cold weather will temporarily increase demand, which will likely result in decent gas storage withdrawals for the next few weeks. PNW hydro is running normal to slightly above normal. However, Canadian precipitation and snow water equivalent is below normal, adding a bullish sentiment. On the bearish side, production growth continues and horizontal rig counts are climbing.

For [redacted], cold weather nationally was the theme. Having once again started the heating season at record inventory storage levels, the extreme cold has caused heavy withdrawals in the eastern half of the country. Forecasts continued to reflect cold in the East with more seasonal to warmer bias out West. Adding to the bullish sentiment was a sizable amount of well freeze offs combined with residential and commercial demand exceeding records set in the prior [redacted] by nearly 2.5 Bcf/d. The Hydro year remains within normal range. Some bearish factors affecting the market included record on-shore U.S. gas production posting a new all time high of 60.8 Bcf/d, continued investment in

shale drilling from sources domestic and abroad, and a lack of significant forecast demand to balance the pending supply.

[redacted] started as it has for most of the winter: cold. Signs of a forecast change are surfacing, with a view towards a warming East and a cool and wetter West by months end. Storage deficits are expected to grow compared to prior periods, due to the extended cold temperatures, high demand, and temporary supply interruptions. Snowpack regionally was marginally improving after a slow start. Mid-C power prices showed signs of softening in the spring and summer. Forecast increases in natural gas production and decreases in demand provide bearish sentiments. While rig counts have declined of late, they still support future supply growth at current levels.

By [redacted], despite an extremely cold winter that had seen natural gas storage withdrawals drop to significant inventory deficits when compared to relevant periods in the past, bullish support for sustained high forward prices had softened. The key contributors to this price softening were a return to pre-winter gas production levels, a decrease in seasonal demand, and a shift in cold temperatures away from key consuming regions in the East towards the less populated West. Other factors putting bearish pressure on the market are both the steadily improving conditions in the hydro-dependent PNW and overall rig counts, that even at current low levels, are not expected to create any meaningful slowdown in production.

[redacted] weather patterns - as is often the case in the shoulder seasons - struggle for consistency as PSE transitioned into the spring. Despite the initial warm bias in the West, it is expected that a more typical La Nina pattern will develop in the coming months, favoring a warm risk to Texas and the Southeast and a wet and cooler signal for the

Northern and Western tiers of the country. Despite the bullish factors such as the nuclear disaster in Japan, unrest in the Middle East, and a cold Europe with increased demand for LNG have indeed added a uncertainty to markets, all is not bullish. Continued strength in gas production, recent and continuing forecasts for increased hydro conditions out the West, and the elimination of inventory shortfalls in gas storage create strong bearish factors.

By [redacted], while not expected to exceed the record breaking heat and resulting cooling degree days observed in 2010, forecasts were once again predicting that summer 2011 would be warmer than both the 10 year and 30 year normal temperatures. When warmer than normal temperatures are realized, incremental demand for cooling develops and can lend support for higher prices. Market prices are bullish with early prediction for only a slightly less active hurricane season as compared to last year, and also being more active than the 30 year average. Other bullish drivers include a sizable storage gap to fill, strong coal prices offering demand switching opportunities to natural gas, and increased levels and duration of nuclear maintenance in response to the tsunami in Japan and tighter expected nuclear regulation in the future. Bearish factors continue to be a consistently above normal regional hydro situation and strong growth in shale gas production.

As of [redacted]observers still expected La Nina influences to have a cooler bias in the West combined with warmer risk in the Southeast. Outside of the drought building areas in the Southeast, forecasts for a warmer summer had begun to ease when compared to last year's standard. Further bearish effects are being realized as the dramatic improvement seen in PNW hydro situation continue to develop in the West. Bullish factors in the market include a continuation of surging gas production despite the accompanied fracking

concerns, the year on year storage deficit that still persists, and the amount of nuclear capacity remaining offline that sought replacement in the form of natural gas generation, supporting natural gas prices. Rig counts continue to vary, however significant enough decreases have not yet materialized to suggest any longer term threat to production.

Despite the first Atlantic hurricane of the season in [redacted], other than the normal heavy rains and some flooding in Central America, no threat to the GOM materialized. Weather looked marginally bearish as well. With the exception of the heat that persisted in the Southeast, normal conditions in the East, slight cooling in the Midwest and a slow to warm West have kept demand muted. As the extended and sizable nuclear maintenance season came to a close, capacities finally rebounded to near 100% of normal, taking pressure off the recent demand for gas. Of note though, and while only a regional effect, the Columbia Generating Station remains off-line until the end of the month and is contrary to the effect observed nationally. Current bullish impacts in the market are the existing gas storage deficits to last year and comments from the Exploration and Production community of a shift away from the high volume dry gas production (which has been key in supporting recent supply excesses) towards more liquid rich oil plays that are projected to have less associated gas. Note, however, that even if this shift ensues on a large scale, it will take time, and is more of a longer term supply demand equalizer than a near term solution.

As we enter [redacted], despite recent increases in demand, gas injections remain healthy and we continue to narrow the year on year storage deficit. The hurricane season has so far not been much of a threat to the Gulf and as such production remains at solid levels, despite talk in the Exploration & Production (E&P) community about a shift from dry gas drilling over to liquid rich gas and oil production. On a potentially bullish note, the

EPA last month announced details on the Cross State Air Pollution Act, which could bolster future gas demand. While this ruling would force power plants in over half the states to make significant reduction to SO2 and NO2 emissions by January 1, 2102 with natural gas being the likely replacement fuel, many are skeptical of its ultimate impact since the level of displacement currently is in large part to low pricing environment and due to the fact that many old and inefficient coal plants are already dormant. We do look to be slightly cooler regionally in the PNW, however the national weather forecasts look to be above normal for much of the country, and while that may add some support for the gas markets, the continuing strength in gas production expected to be approach ~ 63 Bcf/d by February, keeps us bearish in the near and medium term.

As we approached [redacted] a month where we traditionally observe the peak of hurricane season, the number of named tropical storms has begun to add up in count, though they have not taken the path of the production critical Gulf coast up to this point. Weather regionally looks to start the month warmer in the West as the Eastern half of the country looks to remain closer to normal. One mildly bullish factor is that the levels of coal switching remain very high and additive to gas demand, setting a soft temporary floor for pricing, but since production levels have once again set another high (~ 62.1 Bcf/d), this level appears to be more than adequate to cover any elevated switching demand. An additional bearish factor for sustained production even at these price levels is the strong continental and foreign demand for Natural Gas Liquids (NGL's). This demand has put support under liquids prices which in turn aids the economics for several gas producers and this effect adds downward pressure on the market.

By [redacted], on the heels of Tropical Storm Lee, which curtailed about 20 Bcf, or roughly .6 Bcf/d of offshore (GOM) production last month and the commensurate bullish run up that often occurs in these situations, as the dust settles and since no meaningful permanent damage was not sustained, the market has sold off its high as the hype has subsided. Current weather forecasts appear to be near normal for both coastal portions of the country in the near term, with above normal temperatures anticipated for the Central US. Encana's CEO, Randy Eresman has been quoted at a recent investors conference to say that they felt it inappropriate to be growing supply at high rates in this market as it will only exaggerate the oversupply situation, yet September production has exceeded August levels even after the temporary reductions in the Gulf, further supporting growing supply over demand concerns and keeping downward pressure on pricing. Additional bearish pressures come from news that producer's current hedge levels of 2012 volumes by end of the second quarter of 2011 in the U.S. and Canada are about 10% and 15% below levels seen in previous years respectively at this same period of time.

With [redacted] upon us, significant market focus is now on the expectations for winter temperatures and the impact it has on demand and pricing. In what is shaping up to be another La Nina winter, many are predicting bullish deviations from normal with MDA forecasting this winter to be 4% colder than the 30 year and 4.1% colder than the 10 year normal. While drought conditions in Texas still persist, which could have an adverse impact of hydraulic fracturing, additional independent forecasts suggest that the PNW in particular may be in store for above normal precipitation for January through March 2012 which would be a bearish contributor to regional market conditions.

As we begin [redacted], weather forecasts for the first half of the month appear to be mostly near normal, with only small pockets of below normal showing up in the desert Southwest and the southeast, while national gas storage levels are comfortably keeping pace with 2010 injection rates and of late are nearly twice the previous 5 year average levels. Barring a winter of extreme cold and with inventories currently sitting at a record for this time of year of 3.85 Tcf, we appear to have more than adequate supplies to meet this pending season's requirements. While not all news is bearish, PIRA recently points to the potential upside price risks associated with recent U.S. production growth potentially slowing, particularly in the Haynesville region, Cross-State Air Pollution Rule (CSAPR's) impact boosting gas fired Electric Generation (EG) demand moving forward, and the U.S. economy expected to be stronger as bullish factors to consider. Also of note, the continued growth in associated gas production in North Dakota, as oil shale drilling continues its recent expansion; this incremental gas will continue to be flared if additional infrastructure is not put in place to capture it.

Looking into [redacted], after what can only be described as an extremely warm December, weather forecasters still suggest this current season to be another La Nina winter pattern leading to cooler risks expected versus 30 year normal temperatures, with Deutsche Bank suggesting the coolest risk month of the winter to be January. Other longer term bullish factors include continued attention to LNG export capacity, with one facility already being granted a license to export U.S. domestic gas production, while an additional three projects have applications pending approval, with the combined capacity if all four were to go ahead of more than 6 Bcf/d or roughly 10% of the average U.S. production. Even with a lot of winter left and the expectation of a cold January as bullish factors,

previous month's temperatures and the resulting lack of snow pack nationally, combined with our robust gas storage inventories that still sit at record levels do represent bearish factors that should be considered.

As we enter [redacted], the cooler January temperatures that were expected to develop nationally never materialized and we are currently bearish in the short-term given mild winter weather in the East. Weather forecasts continue to show above normal temperatures in the heavily weighted gas consuming regions. PNW hydro for the January-July period is right around normal at 90 percent. Natural gas storage is healthy and expected to expand even more in the coming weeks. In the medium term there is potential for more support to natural gas prices. Three main factors providing a floor for natural gas are massive coal switching, signs of forced producer constraint for independent oil and gas companies and positive news flow. However, there are clearly divergent views occurring between independents and major producers in the U.S. natural gas market regarding the management of these extremely low price levels. Majors such as Exxon tend to have a long investment horizon (20-30 years) in an asset and have the balance sheet power to manage through extremely low pricing periods. Additionally and unexpectedly, the jobless rate was reported to have fallen to 8.3 percent in January, a government report showed.

In [redacted], we continue to be bearish in the short-term due to unseasonably warm temperatures in the eastern half of the country resulting in less gas demand. The 6-10 and 11-15 day forecasts have consistently shown above normal temperatures in the East. PNW hydro for the January-July period at Grand Coulee is up slightly to 96 percent of normal.

There are not any major changes to underlying gas supply/demand fundamentals, as supply continues to exceed demand. Gas storage levels nationally remain robust, approaching 700 Bcf/d in excess of 5 year averages or nearly 3 months ahead of normal levels for this time of year.