International Tenant Representative Alliance

Corporate Real Estate Group, LLC

Salt Lake City

MEMORANDUM ON THE 2007 IRP

TO: Governor of Utah
Public Service Commission of Utah
Utah Department of Environmental Quality
Rocky Mountain Power
MidAmerican Energy Holdings
Economic Development Corporation of Utah

FROM: ALEXANDER LOFFT, *MBA*
Principal & Broker — Corporate Real Estate Group, LLC
Manager, Member — Sun Peak Partners, LLC

Member of the Board, Park City Conservation Association
Member of the Economic Development Corporation of Utah
Committee Member, Environmental Issues Committee, Park City Board of Realtors
Founder, Less Coal dot Com

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REF: PacifiCorp 2006 Integrated Resource Plan, Docket # 07-2035-01

In the matter of the response to the RFP put forth by the Public Service Commission of Utah in 2006 to address projected growth in population and power demand within the PSC service area, we believe the submission by PacifiCorp proposing new coal fired power plants does not represent the most cost effective means to deliver power to the public both currently and into the future and is not in the public's economic or health interest.

We submit the following evidence for your consideration in considering the IRP and, indeed, in considering how the models, on which the IRP conclusions are based, address projected risks and externalized costs of power generation which we feel bias the models towards certain sources of energy and away from others. At a different level, we believe the customers of any business should be able to expect clean, safe, and healthy products, particularly when the option of providers is limited and regulated. In that light, this open period is the main opportunity for us to make that appeal to our power provider and its regulators.

The first three items below come from a conversation with EPRI (Electric Power Research Institute) representatives that have been present at both the BRAC and Rocky Mountain Power-hosted energy workshops this past spring and summer. Facing a dynamic, appreciating market, the information on which the IRP models base their conclusions ages more rapidly than in a more stabilized market.

1) **Increased Construction Costs** – The IRP is based on installed costs derived from data that are over a year old and do not adequately illustrate current installed, unsubsidized costs of construction - particularly important for those power generating units that are more capital intensive and heavily dependent on concrete, steel and the availability of large scale contractors. Due to global demand for these materials, and the local demand for contractors, these costs have *doubled* in the past 12 months, as witnessed in all industrial construction projects underway in the Salt Lake valley (Coldwell Banker Commercial – Industrial Market Review, August 2007).

2) **Increased Fuel Costs** - Similarly, the IRP aged cost estimates do not adequately account for the current and projected increased cost of fuel for extraction and transportation of source material (coal) and subsequent waste disposal (all for which prices have doubled).

3) **Decreasing Renewables Costs** - Additionally, the IRP models should be updated for those power generation options (wind and solar) that have benefited from cost decreases in this same time period due to manufacturing capacity increases, introduction of less expensive materials, and technological advances that improve power yield, projections for which show a steady decrease.

4) **Large Capital Projects versus Scalability** - The PSC should consider the benefits of less capital intensive, more scalable options that could avoid huge investments now for smaller investments that can take advantage of market timing in terms of the cost of capital and more sensitively matched to updated projections on power demand.

5) **Figuring in Exports to Higher Rate Paying Areas** - Along these same lines, tightening regulation combined with earnest public outcry in our neighboring states (including California, Oregon, Washington, and New Mexico) against sourcing power from coal. The IRP models should include the most current out-of-state rate information to illustrate the potential strong cost offsets in the sale of excess capacity (particularly peak capacity) to regions where rates are higher. This would help Utah rate payers enjoy cleaner energy, a lower emissions profile, and lower costs since some of the higher costs of renewables could be recouped through exports.

6) **Lengthening the Amortization Period of the Models** - The time frame of the models project only 20 years out. However, the full amortization period of such large capital projects is longer, and with projected maintenance and upgrades, this period could be 40 years or longer (for example, PacifiCorps study of IGCC implementation indicate a projected facility life of 40 years). The 20 year model, therefore is inadequate. Extending the modeling period to 40 years, even if the range of projected costs broadens, would more effectively capture likely cost trends in the marketplace, especially when anticipating an ever-tightening regulatory environment (at both the federal and state levels).

7) **Projected Carbon Tax Impacts** - Rocky Mountain Power and the Public Service Commission both confirm that the core model relies on a projected $8.00 per ton of Carbon Dioxide emissions costs imposed by an anticipated regulatory regime that may come in the form of a cap-and-trade system or a simple carbon tax. Under either scenario, the $8 per ton might be appropriate as an initial projected phase-in cost but that a $20-40 per ton range is more likely, based on what many experts are predicting. To be fair to Utah rate payers, the models should include a more dynamic projection that includes an escalating cost over time. Along with the adjustment in Item 3 above, the dynamic approach should illustrate curves that are more meaningful in these long term cost analyses. Coal is the most carbon intensive source of CO2 emissions among the various options, and in the face of tightening emissions regulations it will carry the highest risk factor of all sources.

8) **Utah's Heightened Exposure to Emissions from PacifiCorp's Power Portfolio** - Our region's current power portfolio and the proposed IRP impose a disproportionate emissions impact on Utah. Most of PacifiCorp's renewable energy capacity is based in the Pacific Northwest, whereas most of its coal generating capacity is based in and around Utah. Of the approximately 6.5 gigawatts generated proximal to Utah, a full 6 gigawatts is currently coal based. At various times, we export 25% of this power, yet we suffer 100% of the emissions consequences. Building additional coal fired power generation will only exacerbate the burden on Utahns.

9) **Utah's Annual Health Care Burden from Coal Emissions** - Directly related to #8, The Utah Physicians for a Healthy Environment have determined that Utahns suffer approximately $4-6 billion per year in deleterious respiratory related health in connection with compromised air quality that resulting in chronic disability or death, and that the indirect costs may exceed three times these estimates including decreased worker productivity, compromised learning and retention skills and health related absenteeism.

   When adjusted for the regional stationary power contribution to compromised air quality (about 30%), the cost not borne in Utahn's electric power rates but rather paid through the health system, the per MWH effect is approximately a 50% increase in the installed cost of coal ($20/mwh on the low end). All other energy

sources the IRP includes (and some which it doesn't) do not impose this high a burden on Utahns' health. The Public Service Commission must heed the findings of the Department of Environmental Quality and its Division of Air Quality on these impacts before approving any IRP, particularly one that proposes more coal-fired power as the current IRP does.

10) **Impact of Power's Demand on Scarce Water Resources** - The models that gage thermal power generation systems should also include an analysis for water consumption and its projected increasing cost. Increased population growth and power demands each increasingly tax a static (and possibly diminishing) supply of water available within the state, suggesting rising rates for this commodity. Regarding coal-based power, the models must also include the cost of water, and any projected increases, consumed in effective emissions scrubbing and slurry waste disposal.

    We recommend that PacifiCorp solicit opinion on this matter from the Utah Division of Water Quality and the Attorney General on the projected competing demands for water rights and the burden to the State on adjudicating anticipated frequency and magnitude of disputes.

11) **Toxic Metal Emissions Benchmarking** - The recent watershed warnings concerning elevated levels of mercury are a direct result of regional coal fired power generation. Also, untested in our region are levels of thalium, thorium and uranium which are also highly toxic. While other sources contribute and will need to be addressed in other fora, we must address those sources within our area and jurisdiction first.

    Before new coal based generating capacity is added, the Department of Environmental Quality should test our water air and soil and establish a baseline for the presence of all of these elements, derivative compounds and related radiation so they can determine the potential impacts of additional coal fired power generation and whether that is in the public's health interest.

    In addition, all drafts of the IRP should provide a side by side comparison of its benchmark for proposed coal projects and the anticipated mercury emissions from those projects next to the same energy derived from renewable sources that do not impose those same mercury emissions.

12) **Increasing Risk of Legal Action** - The IRP models must include the increasing likelihood of tort action related to environmental degradation (from environmental and recreation groups, and possibly property owners) and health effects (from individuals and employers) from the emissions released in coal based power generation. It is likely that during the life of new coal-fired generating capacity, that these costs will be faced by the power company, and the Public Service Commission should consider whether this is in the ratepayers' best

interest. As a ratepayer, I would rather my future payments go to clean energy than defending "status quo ante" decision-making.

13) **Increasing Base Load Contribution of Renewables** - Wind and solar power generating sources have been largely bundled mainly into a "peak power" tier of power provisioning and therefore relegated to an ancillary role in portfolio power. A statistical study should be performed on current and future wind and solar capacity at multiple locations concurrently. This will enable a determination on the percentage of "uptime" of wind and solar on a portfolio basis (so even if one or two areas are below full capacity, the diversity of locations should show a certain capacity of "always on" production), to reasonably allow a greater portion to qualify as base load power.

14) **Replacing Inefficient Generating Assets as Part of the IRP** - The IRP should be broadened to include a commitment to shuttering antiquated, inefficient coal fired power generation capacity. Doing so would allow for a broader mix of power generation options which, when factoring in the opportunity to sell excess capacity to higher priced markets, would lower the overall cost of the proposed portfolio.

15) **Answering the Demand for Renewables** - Rocky Mountain Power's Blue Sky program (sourcing power from Wind) had generated 51,000 customers as of the end of 2006. Estimating that subscriptions average 5 blocks per month, Rocky Mountain Power is generating over $6 million in premiums for this program per year (and well over their installed capacity), demonstrating extremely strong demand and market feedback on cleaner energy – the one available mechanism for customers to express such feedback in a single, measurable manner. It is incumbent on Rocky Mountain Power and the Public Service Commission to heed their customers' call and roll out these sources of energy faster and in greater volume than the IRP proposes.

    A recent Deseret News/Salt Lake Tribune poll reinforces this demonstration of demand for cleaner sources of energy.

16) **Emphasizing Geothermal Power** - Geothermal power, a source in great abundance in Utah, but is underrepresented in the field and in the IRP. According to the US Department of Energy, Utah's potential electric generation capacity from this source is in the range of 1,000-1,300 megawatts so it should have a more prominent place in our generating capacity than the 26 megawatts we draw already. It is one of the least expensive sources of power once installed and carries with it a near zero emissions profile for GHG's and the highly toxic heavy metal emissions that burning coal imposes.

17) **Renewables and Utah Jobs** - We believe that the short, medium and long term impact on Utah jobs, both urban and rural, will be strongly positive in the

development and exploitation of other energy sources rich within Utah's borders such as geothermal, natural gas, wind, solar and biomass. Simultaneously, given Utah's current high reliance on coal, there will be no impact on the jobs supporting the coal industry in the short and medium terms and only a slow decline in the long term (as supply declines). Further, the jobs created in these other fields should be much less risky to employees than coal mining is – now a topic of great concern.

18) **Impact of Status Quo Choices on Utah's Economic Competitiveness** - The current mix of power generation, if maintained or expanded, will have a strong negative impact on economic growth within Utah. With Salt Lake City's recent air quality ranking of 5th worst in the nation, additional pollution from our regional emissions will deter businesses, visitors and new residents from coming to Utah, and it may drive current businesses and residents away in search of the quality of life values that originally brought, and up to now kept them here. Further deterioration in the quality of our regional air, water, viewsheds, snowpack, will directly affect the outdoor recreation and agricultural industries, and indirectly affect general businesses and residents through sharply compromised health.

19) **Adjustment to Net Metering (a potential Win-Win situation)** - All new proposals for expansion of regional generating capacity should include the removal of the cap on distributed renewable power generation that is reimbursable by the power company. The rates paid for power fed into the grid should be at the prevailing power costs paid at the time the net metering contribution is made (ie, peak power purchase cost if power is provided at peak load times). The trade off is that encouraging distributed energy can absorb much of the anticipated growth in demand and help avoid the huge outlays for large capital projects (see #4). PacifiCorp can benefit by harvesting the "**green credits**" to offset some of its existing emissions exposure (a benefit to ratepayers and the utility) and by managing the transmission and distribution of such distributed power generation.

20) **IRP Rejection by Other States in PacifiCorp's Service Area** – The PSC must weigh the potential impact on the costs to Utahns by the IRP's rejection by the public services commissions in other states that area within PacifiCorp's service areas (Oregon is one example) and judge whether the IRP must be revised.

21) **Broader and More Complete Air Quality Monitoring** – Air quality monitoring in the Salt Lake Valley is too limited both in terms of number of monitors and what they test for - currently only pm10 and ozone. PM2.5 is considered more dangerous than pm10 as the particles can stay airborne longer and lodge deeper in lung tissue when inhaled. Ancillary effects are polluting our watersheds and accelerating snowmelt (by capturing and reradiating sun energy). On top of the competition for limited water resources, an energy source that pollutes our remaining resources is illogical.

No air quality monitoring occurs east of the Wasatch range, including in vulnerable nearby communities as the Heber Valley, Park City and Eden Valley. Air quality in these areas has already been affected, and to proceed with the IRP without any benchmarks – in the fastest growing areas of Utah and the country – threatens their ongoing livelihood as destination locations (and major boons to Utah's growing economy), would be reckless.

In considering the IRP and any possible changes to the models that support the IRP's development, we should look to the recent experience of our downwind neighbors, Colorado, where Xcel Energy determined that new coal plants would be $169 to $236 million more expensive than their proposed mix of natural gas and renewable sources. Their projections should be analyzed and considered as a good proxy in our own efforts.

In conclusion, we believe that a variety of significant current and potential future costs are not adequately contemplated in the IRP and the models on which it was based, and therefore the public is exposed to a much greater level of risk than reflected in PacifiCorp's proposal.