

# PacifiCorp - Stakeholder Feedback Form

## 2015 Integrated Resource Plan

PacifiCorp (the Company) requests that stakeholders provide feedback to the Company upon the conclusion of each public input meeting and/or stakeholder conference calls, as scheduled. PacifiCorp values the input of its active and engaged stakeholder group, and stakeholder feedback is critical to the IRP public input process. PacifiCorp requests that stakeholders provide comments using this form, which will allow the Company to more easily review and summarize comments by topic and to readily identify specific recommendations, if any, being provided. Information collected will be used to better inform issues included in the 2015 IRP, including, but not limited to the process, assumptions, and analysis. In providing your feedback, PacifiCorp requests that the stakeholders identify whether they are okay with the Company posting their comments on the IRP website. Submit form and related documents to the IRP e-mail: [IRP@PacifiCorp.com](mailto:IRP@PacifiCorp.com).

Yes  No May we post these comments to the IRP webpage? Date of Submittal 11/4/2014

\*Name: Rob Graber Title: Senior Vice President  
801.717.3080

\*E-mail: robgrab@bluecastleproject.com Phone: \_\_\_\_\_

\*Organization: Blue Castle Holdings, Inc.

Address: 1145 South 800 East, Suite 117

City: Orem State: Utah Zip: 84097

Public Meeting Date comments address: [Click here to enter date.](#)  Check here if not related to specific meeting

List additional organization attendees at cited meeting: [Click here to enter text.](#)

**\*IRP Topic(s) and/or Agenda Items:** List the specific topics that are being addressed in your comments.  
Capital Costs for Advanced Fission Resource

Check here if any of the following information being submitted is copyrighted or confidential.

**\*Respondent Comment:** Please provide your feedback for each IRP topic listed above.  
Reliable sources of capital costs for the Advanced Fission resource in PacifiCorp's 2015 IRP should only be those projects currently under construction in the US. Estimated costs for proposed or cancelled new US projects cannot be relied upon due to the uncertainty in EPC or other potential contracts for construction. Blue Castle Holdings will be constructing two AP1000 reactors at its site near Green River, Utah, and, as such, has confidential capital cost data provided by the supplier of the AP1000 reactor. On this basis we urge PacifiCorp continue to use the current AP1000 project currently under construction at Vogtle as a source for projected Advanced Fission resource performance and costs in the 2015 IRP, and agree further that PacifiCorp has made appropriate adjustments to the Vogtle capital cost estimates for the reasons discussed below.

The costs currently being incurred by Vogtle 3 & 4, and used as a reference to cost the Advanced Fission resource in the 2015 IRP, represent first-of-a-kind costs as it is the first AP1000 passive reactor being constructed in the US. The project uses an entirely different modular construction method heretofore employed by the US nuclear industry. Further experience with first-of-a-kind nuclear reactors using the same nuclear technology is being gained at the two Summer nuclear units currently being constructed in South Carolina by the same construction consortium. Subsequent AP1000 reactors built in the US can be expected to exhibit learning effects for the reasons specified below. This is reinforced by the fact that the reactor supplier is gaining additional AP1000 construction experience by building 4 more reactors in China, all of which are further advanced in their respective construction cycles relative to the 4 US units. China is

\* Required fields

focusing on the AP1000 in order to achieve scale and experience and has succeeded in significantly reducing the construction costs of its nuclear reactors relative to the US.

In any case, it is not appropriate to use the nuclear construction experience outside the US (and certainly for designs other than the AP1000 outside the US) to project whether or not learning effects will be realized in the US. Such projects have a totally different regulatory regime, reactor design and infrastructure.

In recognition that the past US licensing process was flawed and contributing extensively to increasing costs, the US Nuclear Regulatory Commission (NRC) completely overhauled the licensing process, starting in 1992. The new process streamlines the licensing process so that US companies building nuclear reactors will not be subject to extensive delays and escalating regulation, which has been one of the primary reasons for past US project cost escalation. One of the newest and most important components of the streamlined process is to standardize a reactor design once it has been approved by the NRC - a rigorous process consuming 5 years or more; reactor standardization is expected to result in reduced construction delays like those experienced in the past.. However, first-of-a-kind construction programs will still experience inevitable learning effects which could result in delays and increased costs. Thereafter it is expected that delays and cost overruns will be reduced as companies employ the same standardize designs and the lessons learned from the new modular reactor construction methods currently being used at Vogtle and Summer, and China Both the Vogtle and Summer projects are the first to actually be constructed using the new licensing process and the new modular construction methods proved successful in other countries and therefor exhibit either increase or decreasing cost effects that should be taken into account by PacifiCorp in its IRP process.

Prior to the initial bids for a US nuclear reactor there is near -certainty over the cost of the reactor equipment provided by the reactor supplier (comprising about 30% of the cost of the plant) while there is much less certainty over the construction of the equipment and other site-specific construction tasks. By the time the initial reactor bids are issued, the level of cost certainty increases greatly to near 70% and there is slightly higher certainty by the time the site is prepared for construction. These cost elements are not the source of cost overruns with nuclear plants. However, at the current level of U.S. construction experience, there still remains some uncertainty over the site-specific construction costs, particularly the cost of labor which comprises about 30% of the cost of the plant. It is this cost element which is implicated in cost overruns and which quite logically can be expected to stabilize and decrease as experience is gained constructing AP1000 reactors for the reasons explicated above.

All of this represents a significant departure from past experiences, so it is not appropriate to project long past experience into the future as US nuclear construction begins anew; but rather to expect learning effects to prevail following construction of the vanguard AP1000 reactors. Taking into account that Vogtle and Summer are using new construction processes and that a new licensing process is in place to prevent the sources of cost escalation and delays in the past, it can be expected that nuclear reactors constructed after Vogtle and Summer will benefit extensively from the experience being gained.

---

**Data Support:** If applicable, provide any documents, hyper-links, etc. in support of comments. (i.e. gas forecast is too high - this forecast from EIA is more appropriate). If electronic attachments are provided with your comments, please list those attachment names here.

[Click here to enter text.](#)

---

\* Required fields

**Recommendations:** Provide any additional recommendations if not included above - specificity is greatly appreciated.  
Click here to enter text.

---

Thank you for participating.

\* Required fields