

## Department of Energy Loan Guarantees: Uranium Enrichment

The Department of Energy (DOE) Loan Guarantee Program was created in the Energy Policy Act of 2005 to provide Treasury backed loan guarantees for various energy technologies, including “front end” nuclear fuel cycle projects. While the program also has loan guarantees set aside for nuclear reactor construction, these loans provide an additional subsidy for nuclear fuel generation.

Nuclear reactors are fueled by uranium but mined uranium must be processed to be used as nuclear fuel. Through advanced centrifuge technology or a gaseous diffusion process, mined uranium is “enriched” and made ready to be used as fuel at a nuclear power plant. This enrichment process is referred to as the “front end” of the nuclear fuel cycle because it is the first step in providing fuel to create electricity from nuclear power.



The uranium enrichment portion of the loan guarantee program was first allocated authority in 2008.<sup>1</sup> Congress provided DOE \$2 billion specifically for uranium projects and in late June 2008 DOE had solicited applications. Two companies—United States Enrichment Corporation (USEC) and French-based firm AREVA – applied for loan guarantees. Since then DOE has reallocated an additional \$2 billion in general loan guarantee funds for uranium enrichment, leaving \$4 billion available for these uranium enrichment

projects, likely to allow both USEC and AREVA to receive \$2 billion loan guarantees through the program.<sup>2</sup> The additional loan guarantee authority for uranium enrichment projects was taken from \$4 billion of loan guarantee authority that had not been allocated by Congress to a specific energy technology.

A late summer announcement from USEC stating its need for a decision from DOE by the end of October last year, coupled with the recent bankruptcy of Solyndra, a solar manufacturing company that received the first loan guarantee, has brought increased attention to the DOE loan guarantee program. Solyndra went bankrupt after getting a \$535 million loan guarantee. The two uranium enrichment companies most likely to receive a loan guarantee from the DOE could put \$4 billion on the line, almost eight times what taxpayers were forced to risk on Solyndra. The early financial red flags for DOE regarding these uranium projects coupled with the generally troubled uranium market should give taxpayers great concern.

### First Loan Guarantee Award for Uranium Enrichment

In May 2010, AREVA was selected to receive the first uranium enrichment loan guarantee for \$2 billion.<sup>3</sup> The loan guarantee is for its Eagle Rock Facility near Idaho Falls, Idaho. The loan guarantee has not been finalized but offered on a conditional basis, pending receipt of the project’s license, and other publically undisclosed criteria determined by DOE.<sup>4</sup> AREVA has since received its license from the Nuclear Regulatory Commission on October 12<sup>th</sup> 2011.<sup>5</sup>

The other uranium enrichment applicant, USEC, originally appeared to be the front runner for the first uranium enrichment loan guarantee. However, the USEC loan guarantee is still under review after almost being abandoned because of financial reasons. Although USEC had already secured its NRC license in 2007,<sup>6</sup> which put it in line ahead of the AREVA facility, the project's ranking shifted in July 2009 when DOE requested USEC withdraw its application on the grounds that "the project runs a risk of either major cost overruns or reliability problems or both."<sup>7</sup> The political fallout that followed DOE's decision on USEC meant that USEC never formally withdrew their application, but did submit a "comprehensive update" to it which would be reviewed by the NRC down the road.<sup>8</sup>

### **Political Pressure**

USEC has put significant pressure on DOE to give them a loan, regardless of their company's financial and technological standing. When President Obama was running for office, he wrote a letter supporting USEC's application for a loan guarantee. Though an independent engineering review said the technology was "not commercially viable today," USEC's CEO accused the Administration of going back on the President's earlier promise when DOE asked the company to withdraw and resubmit their application at a later date: "We are disappointed that [the] campaign commitment [to give USEC a loan guarantee] has not been met."<sup>9</sup>

Today, USEC may be in serious financial trouble, but the loan guarantee program cannot fix its economic woes. Without private investment, the project is destined to failure whether taxpayers co-sign the loan or not. If the project is not financially justified it should not get a loan guarantee. Asking taxpayers to take on excessive risk to save a company is not the responsibility of the DOE loan guarantee program.

One private company was able to build a fully functioning uranium enrichment plant without a loan guarantee, raising serious questions as to why other uranium enrichment companies require backing from federal taxpayers. Louisiana Energy Services received a license to operate a uranium enrichment facility in New Mexico back in 2006. The plant, known as URENCO USA, began production on June 11<sup>th</sup> 2010, and continues to expand its operating capacity today.<sup>10</sup>

### **Background on AREVA Eagle Rock Enrichment Facility, Idaho**

As early as 2007, AREVA first announced plans to construct a 3.3 million SWU/yr centrifuge plant at its Eagle Rock Facility in Idaho. On December 30<sup>th</sup> 2008, AREVA submitted a construction and application license to the Nuclear Regulatory Commission (NRC) to build a uranium facility in Eagle Rock, Idaho with the intent of starting construction in 2011.<sup>11,12</sup> During a presentation before the Idaho House Environment, Energy and Technology Committee in February 2009, an AREVA representative told members that despite its 21% drop in net profit due to cost overruns and delays at its Okiluto-3 reactor plant in Finland, the company was on track.<sup>13</sup>

AREVA's Eagle Rock Enrichment Facility in Idaho is currently estimated to cost \$3.2 billion.<sup>14</sup> In a March 2009 update, AREVA said the company was ahead of schedule in preparation for review and construction.<sup>15</sup> In that same month, AREVA informed the NRC that it would revise its current application and double the plant's uranium production capacity to 6.6 million SWU/yr.<sup>16</sup>

By June 2009, AREVA was pressing the NRC to allow the company an exemption from Commencement of Construction Requirements for AREVA's Eagle Rock Enrichment Facility to prepare for early site preparation work.<sup>17</sup> Less than a year later, the NRC approved the exemption.<sup>18</sup> On February 5, 2010, a month before exemption approval, AREVA expressed progress in obtaining a \$2 billion DOE loan

guarantee, calling it a “unique nuclear project which cannot be financed on the open market without federal loan insurance.”<sup>19</sup> Impatient lawmakers chided DOE Secretary Chu for being too slow to finalize AREVA’s application. Chu responded that the review takes time due to the project’s complicated nature and large overall cost.<sup>20</sup>

On May 20<sup>th</sup> 2010, AREVA was awarded a conditional loan guarantee of \$2 billion by the DOE for its Eagle Rock Enrichment Facility. And the NRC awarded AREVA its operating license in October 2011.<sup>21</sup> However, just two months later in December 2011, AREVA announced plans to put the project on hold until late 2012.<sup>22</sup>

### **Pending Loan Guarantee: Background on the USEC Uranium Enrichment Facility**

The United States Enrichment Corporation (USEC) is currently developing a centrifuge plant in Piketon, Ohio as the culmination of an R&D program. Estimated project costs have now increased from \$1.7 billion<sup>23</sup> in 2007 to \$5 billion<sup>24</sup> in 2012. To date, the company has invested a total of \$1.95 billion in the project and expects to invest another \$2.8 billion to fully fund project development.

In August of 2004, USEC submitted an application to the NRC for a license to construct and operate the Piketon plant and received the license in 2007.<sup>25</sup> While project proponents argued that the plant was ready to receive a loan guarantee in 2009, having received its NRC license and moved through the early stages of the application process, DOE had other concerns. In July 2009, DOE requested USEC withdraw its loan application for the Piketon plant on the grounds that “the project runs the risk of either major cost overruns or reliability problems or both.”<sup>26</sup>

When DOE asked USEC to resubmit their application in 12-18 months, they offered the company \$45 million for ongoing research and development activities. Trying hard to refocus the political limelight, DOE endeavored to obfuscate the issue by titling the request to withdraw the application press release as “800 to 1000 New Jobs Coming to Piketon,” in reference to an investment of \$150-200 million over four years to clean up old cold-war era contamination on site.<sup>27</sup> USEC initially rejected the funding,<sup>28</sup> but ultimately accepted it within a year later.<sup>29</sup>

USEC’s financial status remains a significant problem that has plagued the Maryland-based company since the start of the Piketon plant’s construction in 2007. In December 2009, Moody’s Investor Service downgraded its ratings for USEC to junk grade status citing “expectations of weak credit metrics over the next several years, increased competition and liquidity risks.”<sup>30</sup> Further, since 2002 USEC has received four consecutive credit downgrades<sup>31</sup> and is now in danger of losing its stock listing in the New York Stock exchange.<sup>32</sup> The findings clearly show USEC’s poor financial strength and positioning, especially in light of being asked to resubmit their application. While project costs for the plant have nearly tripled, previous estimates to have the plant operating by 2010 have now been pushed back to 2014.<sup>33</sup>

Currently, USEC is awaiting Congressional approval of up to \$150 million in research, development and demonstration funds which were requested in the President’s FY2013 budget and are now being considered in the highway bill, energy and water appropriations bill, and National Defense Authorization Act (NDAA).

May 2012

For more information, please visit [www.taxpayer.net](http://www.taxpayer.net)  
or contact Autumn Hanna at (202) 546-8500

<sup>1</sup> Library of Congress, "Status of Appropriations Legislation for Fiscal Year 2008," December 7, 2009.  
<http://thomas.loc.gov/home/approp/app08.html>

<sup>2</sup> Jonathan Riskind, "DOE to double loan guarantees for uranium enrichment projects," *The Columbus Dispatch*, April 22, 2010.  
[http://www.dispatch.com/live/content/local\\_news/stories/2010/04/21/feds-double-loan-guarantees-for-uranium-enrichment-projects.html](http://www.dispatch.com/live/content/local_news/stories/2010/04/21/feds-double-loan-guarantees-for-uranium-enrichment-projects.html)

<sup>3</sup> Department of Energy, "DOE Offers Conditional Loan Guarantee for Front End Nuclear Facility in Idaho," May 20, 2010.  
<https://lpo.energy.gov/?p=809>

<sup>4</sup> Ibid.

<sup>5</sup> The Associated Press, "AREVA wins federal license for Idaho uranium plant," October 12, 2011.  
<http://www.businessweek.com/ap/financialnews/D9QB0SR80.htm>

<sup>6</sup> U. S. Nuclear Regulatory Commission, "USEC Inc. Gas Centrifuge," Accessed October 6, 2011.  
<http://www.nrc.gov/materials/fuel-cycle-fac/usecfacility.html>

<sup>7</sup> Steven Mufson, "USEC is Denied Loan Guarantee; CEO Accuses Obama of Reneging," *The Washington Post*, July 29, 2009.  
<http://www.washingtonpost.com/wp-dyn/content/article/2009/07/28/AR2009072802617.html>

<sup>8</sup> USEC, "USEC Submits Update to Loan Guarantee Application," August 3, 2010.  
<http://usec.com/NewsRoom/NewsReleases/USECInc/2010/2010-08-03-USEC-Submits-Update-To.htm>

<sup>9</sup> Steven Mufson, "USEC Is Denied Loan Guarantee; CEO Accuses Obama of Reneging," *The Washington Post*, July 29, 2009.  
<http://www.washingtonpost.com/wp-dyn/content/article/2009/07/28/AR2009072802617.html>

<sup>10</sup> URENCO, "URENCO USA," Accessed October 24, 2011. <http://www.urenco.com/content/33/urenco-usa.aspx>

<sup>11</sup> U. S. Nuclear Regulatory Commission, "AREVA Enrichment Services, LLC Gas Centrifuge Facility," Accessed October 6, 2011.  
<http://www.nrc.gov/materials/fuel-cycle-fac/arevanc.html>

<sup>12</sup> World Nuclear News, "Eagle Rock application goes in," December 31, 2008. <http://www.world-nuclear-news.org/newsarticle.aspx?id=24222>

<sup>13</sup> Nick Draper, "AREVA plant is still on track," *AllBusiness.com*, February 27, 2009. <http://www.allbusiness.com/company-activities-management/financial-performance/11881207-1.html>

<sup>14</sup> Rocky Barker, "Idaho AREVA officials say they are moving despite report," *IdahoStatesmen.com*, September 13, 2011.  
[http://voices.idahostatesman.com/2011/09/13/rockybarker/report\\_suggests\\_areva\\_may\\_freeze\\_idaho\\_uranium\\_plant\\_investment](http://voices.idahostatesman.com/2011/09/13/rockybarker/report_suggests_areva_may_freeze_idaho_uranium_plant_investment)

<sup>15</sup> AREVA, "AREVA Provides Update on Eagle Rock Enrichment Facility Project," March 2, 2009.  
[http://us.areva.com/home/liblocal/docs/Press%20releases/2009/AREVA\\_IdahoFallsUpdate\\_3\\_2\\_09.pdf](http://us.areva.com/home/liblocal/docs/Press%20releases/2009/AREVA_IdahoFallsUpdate_3_2_09.pdf)

<sup>16</sup> AREVA, "Revision 1 to License Application for the Eagle Rock Enrichment Facility," April 23, 2009.  
[http://wba.nrc.gov:8080/ves/view\\_contents.jsp](http://wba.nrc.gov:8080/ves/view_contents.jsp)

<sup>17</sup> AREVA, "Request for Exemption from 10 CFR 70.4, 10 CFR 70.23(a)(7), 10 CFR 30.4, 10 CFR 30.33(a)(5), 10 CFR 40.4, and 10 CFR 40.32(e) Requirements Governing "Commencement of Construction", June 17, 2009. <http://pbdupws.nrc.gov/docs/ML0917/ML091770390.pdf>

<sup>18</sup> Federal Register, "Nuclear Regulatory Commission," Volume 50, pg. 12581-12583, March 16, 2010.  
[http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=2010\\_register&docid=fr16mr10-89](http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=2010_register&docid=fr16mr10-89)

<sup>19</sup> Idaho Samizdat: Nuke Notes, "Update on AREVA's Eagle Rock Enrichment," February 5, 2010.  
<http://djsrv.blogspot.com/2010/02/update-on-arevas-eagle-rock-enrichment.html>

<sup>20</sup> Reuters, "US moves closer to nuclear loan decision for AREVA," March 5, 2010.  
<http://in.reuters.com/article/2010/03/04/areva-nuclear-loan-idINN0417604220100304>

<sup>21</sup> The Associated Press, "AREVA wins federal license for Idaho uranium plant," October 12, 2011.  
<http://www.businessweek.com/ap/financialnews/D9QB0SR80.htm>

<sup>22</sup> World Nuclear Association, "US Nuclear Fuel Cycle." May 2012. <http://www.world-nuclear.org/info/default.aspx?id=25739&terms=usec>

<sup>23</sup> Reuters, "UPDATE 1- USEC says centrifuge cost rises by one-third," February 12, 2007.  
<http://www.reuters.com/article/2007/02/12/usec-centrifuge-idUSN1242355020070212>

<sup>24</sup> Jessica Wehrman, "Investors in Pike County uranium project to continue waiting for federal loan guarantee," *The Columbia Dispatch*, July 1, 2011. <http://www.dispatch.com/content/stories/local/2011/07/01/investors-extend-wait-for-loan-guarantee.html>

<sup>25</sup> U. S. Nuclear Regulatory Commission, "USEC Inc. Gas Centrifuge," Accessed October 6, 2011.  
<http://www.nrc.gov/materials/fuel-cycle-fac/usecfacility.html>

---

<sup>26</sup> Steven Mufson, "USEC is Denied Loan Guarantee; CEO Accuses Obama of Reneging," *The Washington Post*, July 29, 2009. <http://www.washingtonpost.com/wp-dyn/content/article/2009/07/28/AR2009072802617.html>

<sup>27</sup> Department of Energy, "800 to 1000 Jobs Coming to Piketon," July 28, 2009. <https://lpo.energy.gov/?p=832>

<sup>28</sup> Jonathan Riskind, "USEC: It's guarantee or nothing," *The Columbus Dispatch*, July 30, 2009. [http://www.dispatch.com/content/stories/local/2009/07/30/usecletter.ART\\_ART\\_07-30-09\\_B1\\_RNEKEGO.html](http://www.dispatch.com/content/stories/local/2009/07/30/usecletter.ART_ART_07-30-09_B1_RNEKEGO.html)

<sup>29</sup> USEC, "USEC and DOE Fund Continued American Centrifuge Activities," March 23, 2010. <http://www.usec.com/NewsRoom/NewsReleases/USECInc/2010/2010-03-23-USEC-And-DOE-Fund.htm>

<sup>30</sup> Associated Press, "Moody's Downgrades USEC Ratings," December 18, 2009. <http://www.businessinsider.com/moodys-downgrades-usec-ratings-2009-12>

<sup>31</sup> Moody's Investor Service. "USEC Inc." Accessed May 14, 2012. <http://www.moodys.com/credit-ratings/USEC-Inc-credit-rating-600045828>

<sup>32</sup> BusinessWire, "USEC Receives Continued Listing Standards Notice from the New York Stock Exchange." May 14, 2012. <http://www.marketwatch.com/story/usec-receives-continued-listing-standards-notice-from-the-new-york-stock-exchange-2012-05-14>

<sup>33</sup> World Nuclear Association, "US Nuclear Fuel Cycle." May 2012. <http://www.world-nuclear.org/info/default.aspx?id=25739&terms=usec>