



January 22, 2015

Mr. David Henderson
Office of Nuclear Energy
U.S. Department of Energy
Mailstop NE-52
19901 Germantown Road
Germantown, MD 20874-1290

VIA ELECTRONIC MAIL

Subject: DOE Excess Uranium Management: Effects of DOE Transfers of Excess Uranium on Domestic Uranium Mining, Conversion, and Enrichment Industries; Request for Information – 79 Fed. Reg. 72661 (Dec. 8, 2014)

Dear Mr. Henderson,

ConverDyn appreciates the opportunity to provide our views in the attached response to the U.S. Department of Energy (DOE) Request for Information, dated December 8, 2014, on the effects of DOE's transfers of excess uranium on the domestic uranium conversion industry. The Metropolis Works (MTW) facility, operated by Honeywell International, is the only domestic provider of uranium hexafluoride (UF₆) conversion services. Those conversion services are marketed exclusively through ConverDyn. MTW has the capability to produce more than 80% of annual U.S. nuclear reactor requirements. However, the domestic conversion industry's continued existence is threatened by DOE's ongoing excess uranium sales. DOE's transfers continue, contrary to the USEC Privatization Act, to cause material adverse impacts on the domestic conversion industry, including reduced sales, suppressed prices, and higher production costs, as well as detrimental changes in customer practices.

ConverDyn also is taking this opportunity to reaffirm its position that DOE's transfers violate the USEC Privatization Act because DOE is not authorized to transfer conversion services. The value of low-enriched uranium has three components: the physical uranium, the conversion services, and the enrichment services. Each component has a separate market value that can be sold and transferred independently of the other. DOE simply is not authorized to transfer conversion services under the Act. Regardless, as described in the enclosure, DOE should undertake measures to mitigate the negative impacts on the domestic conversion industry from its transfers, should those transfers proceed.

The uranium conversion market has continued to experience adverse material impacts since the last Secretarial Determination was issued in May 2014. In addition to the adverse impacts associated with previous DOE excess uranium transfers, demand for conversion services has declined as a result of the continuing negative impact of the Fukushima accident coupled with recent and planned plant closures in the U.S. Further DOE transfers at this time of extreme market weakness and uncertainty will exacerbate an already tenuous situation for the domestic conversion industry.

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Responses to DOE's specific questions are included in the enclosure to this letter. Please do not hesitate to contact me should you have any questions.

Sincerely,



Malcolm Critchley

ConverDyn
President & CEO

cc: RFI-UraniumTransfers@hq.doe.gov

Enclosure:

CONVERDYN RESPONSE TO DOE REQUEST FOR INFORMATION***Excess Uranium Management: Effects of DOE Transfers of Excess Uranium on Domestic Uranium Mining, Conversion, and Enrichment Industries*****79 Fed. Reg. 72661 (Dec. 8, 2014)**

ConverDyn provides the following information and comments regarding the effects of DOE's transfers of excess uranium on the domestic uranium industries in response to the Request for Information (RFI), dated December 8, 2014.¹ ConverDyn previously provided to DOE a detailed assessment of the adverse material impacts on the domestic conversion industry resulting from excess uranium transfers covered by the 2014 Secretarial Determination.² However, the lack of detailed information regarding future transfers under any new Secretarial Determination limits ConverDyn's ability to provide a similarly detailed assessment here. Absent information indicating how the total amount, rate, or structure of the transfers will change from those covered by the 2014 Secretarial Determination, the impacts described in ConverDyn's prior assessment, as well as those described in the 2014 report by Energy Resources International, Inc. (ERI),³ continue to apply. Those analyses demonstrate that, contrary to the USEC Privatization Act, DOE's excess uranium transfers have adverse material impacts on the domestic conversion industry in the form of reduced sales, increased production costs, decreased spot prices, and job losses.

1. What factors should DOE consider in assessing whether transfers will have adverse material impacts?

Adverse material impacts may occur in several different ways. DOE should consider all of the mechanisms through which its excess uranium sales could damage the domestic conversion industry. It would be inappropriate to arbitrarily exclude certain types of impacts simply because DOE considers them difficult to assess.⁴ Therefore, DOE must consider the

¹ 79 Fed. Reg. 72661 (Dec. 8, 2014).

² Letter from M. Critchley to P. Lyons, "Adverse Material Impacts of Department of Energy Sales of Excess Uranium on Domestic Conversion Industry" (Proprietary Enclosure) (March 10, 2014). ConverDyn also provided DOE with a discussion of principles to guide DOE's Secretarial Determination process. Letter from M. Critchley to P. Lyons, "Guiding Principles for the Secretarial Determination Process" (March 10, 2014). As the latter document includes information similar to that requested by DOE in the RFI, we are incorporating those prior comments into this response by reference.

³ Energy Resources International, Inc., "2014 Review of the Potential Impact of DOE Excess Uranium Inventory on the Commercial Markets," ERI-2142.17-1401 (April 2014) at 83 (2014 ERI Report).

⁴ *See, e.g., Nat'l Ass'n of Regulatory Utility Comm'rs v. U.S. Dep't of Energy*, Case No. 11-1066 (D.C. Cir. November 19, 2013) (slip op. at 3-4).

following factors when assessing whether excess uranium transfers will result in an “adverse material impact” for each segment of the domestic nuclear industry:⁵

- Price suppression
- Displaced production/sales (near-, mid-, and long-term)
- Impact on profitability
- Impact on production costs
- Impact on customers’ purchasing practices
- Impact on investment and long-term viability
- Impact on employment
- Impact on share price and investor sentiment
- Impact on investment plans

Additionally, any economic model used to assess adverse material impacts should be appropriately tailored for the structure of the domestic conversion market, and should:

- Analyze actual sales data, including both historic and forward sales, to ensure that lost/displaced sales are appropriately recognized and accounted for in the assessment;
- Consider the effects of spot and term price on production costs/volumes and employment;
- Consider the effects of pricing/sales volume changes on near-, mid-, and long-term investment plans; and
- Recognize the limits of any economic model in a market that exhibits very low liquidity.

Lastly, several broad supply and demand issues associated with the uranium market affect the extent of the impacts to the conversion industry caused by DOE’s excess uranium transfers. To ensure that DOE’s impact assessment reflects the realities of the current (and future) market, DOE should consider the following factors with respect to conversion services:

⁵ DOE’s focus must be on the impacts to the *domestic conversion industry*. DOE has, in the past, made numerous references to increases in uranium *mining* production in internal DOE Memoranda relating to Secretarial Determinations in attempting to justify its no adverse material impact conclusion for the domestic *conversion* industry. But, there is no link between increased uranium mining production and the domestic conversion industry. DOE’s repeated references to the size of DOE’s uranium transfers as a percentage of the global uranium market, ignores the magnitude of its transfers on the global or domestic *conversion* market. Under the 2014 Secretarial Determination, DOE intends to transfer the equivalent of 3 million kgU of UF₆. This represents 5% of worldwide conversion services demand, but 25% of U.S. conversion demand.

- Demand should consider the actual forward open demand at the time of the assessment, rather than the total demand;
- When assessing impacts on the conversion market, Russia, China and India should be excluded from forward demand because those markets are closed to sales from the domestic conversion industry;
- Based on inventories accumulated since reactor shutdowns, forward demand from Japanese reactors should be assumed to be zero until at least 2018, and then be assumed to ramp up on a realistic schedule based on the number of reactor restarts and remaining inventories;
- Loss of sales resulting from planned reactor shutdowns in Germany should take account of the actual impact to the domestic industry as well as the anticipated future impact;
- Enricher underfeeding must be properly accounted for in the supply side and should be assumed to be market clearing;
- Russian supply into the U.S. market via the Transitional Supply Agreement with USEC and direct sales under the Suspension Agreement should be assumed to be market clearing, up to existing quota limits;
- In assessing the reduction in demand and loss of sales to the domestic industry, DOE should consider the effects of prior uranium inventory dispositions/transfers;
- In relation to LEU transferred to NNSA contractors to fund down-blending, DOE should assess the displacement of working and strategic stocks; and
- In relation to U.S. demand, DOE should assess recent and anticipated reactor shutdowns and account for increasing pressures on the nuclear fleet from the wholesale electricity markets and low natural gas prices.

2. With respect to transfers from DOE's excess uranium inventory in calendar years 2012, 2013, and 2014, what have been the effects of transfers in uranium markets and the consequences for the domestic uranium mining, conversion, and enrichment industries relative to other market factors?

As an initial matter, ConverDyn disagrees with the premise of DOE's question regarding the impacts from DOE's transfers compared to other market factors. The statutory standard set forth in Section 3112(d) of the USEC Privatization Act prohibits DOE from transferring excess uranium unless "the Secretary determines that the sale of the material will not have an adverse material impact on the domestic uranium, mining, conversion, or enrichment industry." The statute makes no mention of other market factors, nor does it instruct DOE to consider its effects relative to other factors. In short, the response to DOE's question is immaterial to the statutory

standard. The question DOE must ask is whether DOE's transfers will have adverse material impacts, not whether its transfers will cause worse impacts than those caused by other market conditions. The United States District Court for the District of Columbia criticized DOE on this very point:

The Department's analysis on this point may be correct, but it is the answer to the wrong question. Rather than assessing the evidence to determine whether the planned transfers would have an adverse material impact on the domestic uranium production, conversion, or enrichment industries as directed by [42 U.S.C.] Section 2297h-10(d), the Department instead reviewed the evidence to determine whether the planned transfers are the primary cause of the current depressed state of the uranium market or whether altering the amount of the transfers would alleviate negative market conditions. And whether the Department's transfers are "the driver" of market conditions is not the inquiry set forth in Section 2297h-10(d). The Department's transfers may have an adverse material impact on ConverDyn even if the transfers are not the primary cause of ConverDyn's total losses. For this reason, the defendants' emphasis on "[t]he relatively small size of [the Department's] proposed transfer compared to global uranium supply" as the basis of the Department's conclusion similarly misses the mark.⁶

That said, DOE's 2012, 2013, and 2014 transfers have resulted in significant and unmitigated adverse impacts to the domestic conversion industry. For example, DOE transfers have displaced substantial quantities of conversion services sales by ConverDyn and also have played a major role in depressing market price for conversion services. The combined annual impact from lost sales and lower prices is in the \$10s of millions per year, which clearly represents an adverse material impact. These harms from DOE transfers are on top of the impacts of other factors affecting the domestic conversion industry. Most recently, in January 2015, MTW ceased production for approximately three months. Historically, annual maintenance shutdowns only lasted for about one month. But the continued depressed state of the conversion market, combined with the ongoing displacement of conversion sales by DOE's transfers, has necessitated an extended shutdown — corresponding to a two-month decrease in annual production.

In addition, DOE has not, in prior Determinations, attempted to distinguish among the domestic uranium industry's individual segments when making its material adverse impact assessment. An adverse material impact to any one of the three segments (mining, conversion, or enrichment) precludes a "no adverse material impact" determination. Although prior ERI reports assess each of the three segments separately, DOE makes a single, sweeping finding of no adverse material impact. This ignores the obvious fact, borne out for example in the 2014 ERI Report, that DOE's transfers have different impacts in different market segments—with the domestic conversion industry suffering the most. To comply with the USEC Privatization Act,

⁶ *ConverDyn v. Moniz*, Civil Action No. 14-1012 (RBW), slip. op. at 21-22 (D.C. Sept. 12, 2014).

DOE must assess each industry segment separately to avoid harming one segment even if the transfers do not materially harm the others.⁷ Based on that assessment, DOE may need to reduce or mitigate impacts to one sector, but not another, in order to comply with the Act. The lack of any analysis or explanation as to *why* DOE found that the undisputed harms to ConverDyn did not constitute an adverse material impact in prior Determinations means that it is impossible to assess the extent to which harms specific to each individual segment factored into the overall Determination.

3. What market effects and industry consequences could DOE expect from continued transfers at annual rates comparable to the transfers described in the 2014 Secretarial Determination?

ConverDyn expects that continued DOE transfers at rates comparable to those in the 2014 Secretarial Determination, as indicated in the latest notice to Congress, would lead to adverse impacts similar to those resulting from the transfers covered by the 2014 Secretarial Determination. Those transfers would continue to depress prices and displace sales. Specifically, the 2014 ERI Report prepared for DOE concluded that the transfers made pursuant to the 2014 Secretarial Determination would result in the following:

- A 7-8% reduction in sales volume for conversion services;⁸
- A 6-8% increase in production costs due to the high fixed costs associated with the production of UF6;⁹
- An 11.8% decline in the spot price of conversion services, and;¹⁰
- Continued workforce reduction associated with sales volume reduction.¹¹

ConverDyn previously submitted a detailed assessment of adverse material impacts on the domestic conversion industry from 2014-2016 resulting from DOE's proposed transfers.¹² The transfers covered by the 2014 Secretarial Determination will cause ConverDyn to lose

⁷ For example, valuing the UF6 that DOE transfers at approximately 5% below market value leads to a disproportionate impact on the conversion industry because conversion is a smaller portion of the price of UF6 than either uranium or enrichment. To ensure that it adequately accounts for these effects, DOE does not, but should, calculate an implied conversion price in the UF6 that it transfers relative to the spot price.

⁸ 2014 ERI Report at 83.

⁹ *Id.*

¹⁰ *Id.* at 42.

¹¹ *Id.* at 83.

¹² Letter from M. Critchley to P. Lyons, "Adverse Material Impacts of Department of Energy Sales of Excess Uranium on Domestic Conversion Industry" (Proprietary Enclosure) (March 10, 2014).

\$40.5M of profits, as well as creating the potential for additional \$29M in lost revenue from changed customer buying practices. Proceeding with transfers at a rate comparable to those described in the 2014 Secretarial Determination would result in comparable adverse material impacts. Again, based on the prior analyses performed by ERI, the adverse impacts from DOE transfers are greatest with respect to the domestic conversion industry. DOE must eliminate or mitigate those adverse impacts in order to comply with the Act.

4. Would transfers at a lower annual rate significantly change these effects, and if so, how?

Reducing the annual rate of the transfers would reduce the adverse impacts on the domestic conversion industry by reducing the volume of displaced sales. It would also lessen the magnitude of the effects on pricing, and help reduce further job losses. The impacts described above would be reduced by an amount roughly proportional to the amount that the rate of the transfers is lowered.

Even if DOE reduces the annual rate of the transfers, the Secretary must still find that those transfers would not result in adverse material impacts on the domestic uranium industries. Again, the question is not how DOE's transfers affect the domestic industries relative to other market factors, or whether reduced transfers would lessen those effects, but whether DOE's transfers (at any rate) result in adverse material impacts. In the current depressed market environment, eliminating material adverse impacts on the domestic conversion industry would require a substantial reduction in transfer volume.¹³

5. Are there actions DOE could take other than altering the annual rate of transfers that would mitigate any negative effects on these industries?

Yes. There are several actions DOE could take — in addition to substantially reducing or eliminating transfers — that would mitigate negative effects on the domestic conversion industry:

- **Limit transfers when the market price of conversion services is below a certain price.** DOE could work with the domestic uranium industries to establish price bands that ensure excess uranium transfers do not cause material adverse impacts. For example, if the price of conversion is already low, transferring additional conversion lowers the price even further and exacerbates impacts on the domestic conversion industry. To reduce the potential for adverse impacts, DOE could establish a floor price, above the cost of domestic production, such that DOE would not transfer excess uranium below that price. Similarly, if the price is within a certain “moderate” range, DOE could commit to limiting the amount of

¹³ Additionally, because lowering the annual rate of the transfers would result in increased prices, DOE would be more likely to obtain fair market value for the excess uranium that enters the market. In the past and present, DOE has failed to obtain fair market value for its excess uranium, despite the USEC Privatization Act's requirement to do so.

the transfers until the price increases to an amount that avoids material adverse impacts on domestic uranium industries. ConverDyn would be pleased to work with DOE to establish specific price bands should DOE wish to pursue this option.

- **Increase transparency in the Secretarial Determination process.** DOE should increase transparency in the Secretarial Determination process by subjecting the underlying economic analysis (*e.g.*, ERI assessments) to independent peer review; making publicly available the internal DOE documents underlying the Determination; reasonably defining “adverse material impacts”; and, publicly explaining its assessment of how DOE receives fair market value for the uranium that it transfers.
- **Cease transfers of conversion services.** Under the USEC Privatization Act, DOE is only authorized to transfer physical uranium (natural and low-enriched), not conversion services. As such, DOE should work with the domestic conversion industry to ensure that conversion services are not unlawfully transferred along with the physical uranium. There are a variety of mechanisms available to accomplish this result, which ConverDyn is available to discuss with DOE. Additionally, it is important to recognize that, because MTW is the only domestic provider of conversion services, transferring conversion services has a disproportionately larger impact on the domestic conversion industry compared to the impacts on the other segments of the domestic uranium industry.¹⁴
- **Structure transfers to obtain fair market value.** DOE’s ongoing failure to obtain fair market value for its excess uranium depresses prices of conversion services. DOE has chosen to make transfers priced exclusively at the spot market price rather than the term market price, which, at current prices, also would have resulted in additional revenue to DOE. This is contrary to the requirement in section 3112(d)(2)(C) of the USEC Privatization Act, which mandates that the price paid to the Secretary will not be less than the fair market value of the material. In determining fair market value DOE; should take account of all markets that are reasonably accessible to DOE, both spot and term markets, and should not be limited to the most convenient and lowest price point. Given the relatively thin market for spot conversion transfers, transfers by DOE at spot market prices have an outsized adverse impact on the conversion market generally and should be minimized or eliminated. Furthermore, the calculation of fair market value should take account of the volumes traded in the

¹⁴ The fact that ConverDyn is the sole domestic conversion provider presents a unique opportunity in that there may more immediate mechanisms for DOE to mitigate the impacts on the domestic conversion industry than limiting excess uranium transfers.

respective markets to ensure that a small number of spot market transactions do not result in artificially lowered prices.

- **Structure contracts for downblending services in a manner that does not effectively force DOE to find that transfers will not have adverse material impacts.** The contracts for downblending services currently do not condition the excess uranium transfers on the Secretary's determination that the transfers will not have a material adverse impact on the domestic uranium industries. Thus, long before Secretarial Determinations are made, DOE has contractually obligated itself to complete the transfers, regardless of the impact on the domestic industries. The mere existence of the contracts suggest that DOE's decision has been made prior to performing an assessment of impacts, such that the Secretary's Determination is a *pro forma* exercise. Going forward, DOE should ensure that these contracts are structured in such a way that if the Secretarial Determination finds adverse material impacts from proposed transfers, DOE's inability to proceed with those transfers will not constitute a breach of contract. This would help ensure that the Secretarial Determination is not dictated by pre-determined contractual obligations.

DOE should also reinstate an annual cap on transfers that it impermissibly eliminated without any notice to the public or an opportunity to comment.¹⁵ Although this would have the effect of immediately lowering the annual rate of transfers, a measure of predictability regarding the planned transfers and their impacts on the market is vital to maintaining viable domestic uranium mining, conversion, and enrichment industries. Three prior ERI reports from 2009, 2010, and 2012 expressly warned that DOE transfers beyond the established 10% cap could result in adverse material impacts.¹⁶ Without an annual cap, ConverDyn faces substantial commercial uncertainty when attempting to forecast future market conditions. The price of conversion services and the overall supply end up being dictated by DOE's excess uranium transfers, rather than normal market forces. This is damaging for the domestic conversion industry.

¹⁵ Eliminating the annual cap on excess uranium transfers constituted a substantive change in policy that, under the Administrative Procedure Act, should have been subject to notice and comment rulemaking.

¹⁶ Energy Resources International, Inc., "Quantification of the Potential Impact on Commercial Markets of DOE's Transfer of Natural Uranium During the Period October 2009 Through December 2013," ERI-2140.20-0903 (Nov. 2009) at 34; Energy Resources International, Inc., "Quantification of the Potential Impact on Commercial Markets of DOE's Transfer of Uranium Hexafluoride During Calendar Years 2011, 2012 and 2013," ERI-2142.07-1001 (Dec. 2010) at 37-38; Energy Resources International, Inc., "Quantification of the Potential Impact on Commercial Markets of Introduction of DOE Excess Uranium Inventory in Various Form and Quantities During Calendar Years 2012 Through 2033," ERI-2142.12-1201 (April 2012) at 50.

Lastly, DOE should request Congressional funding in an amount sufficient to cover its cleanup and downblending costs. Full appropriations for cleanup and downblending efforts would eliminate the need for DOE to make uranium transfers in order to resolve funding gaps, therefore reducing the budget pressure to make transfers and minimizing the adverse impact to the domestic uranium industries.

6. Are there actions DOE could take with respect to the transfers that would have positive effects on these industries?

There are several actions DOE could take regarding the transfers that would have a positive impact on the domestic uranium industries. For example, stopping the transfer of conversion services in the current depressed market would have an immediate positive effect on the domestic conversion industry. In addition, a commitment by DOE not to transfer uranium below a certain price or beyond a certain quantity would support conversion prices and have positive benefits for the domestic conversion industry. Placing all or a portion of DOE conversion sales into the long-term market also could lessen the impacts of DOE's transfers on the domestic conversion industry. DOE also could sell or transfer the material to a financing entity, who, in exchange for a fee, would only sell the material forward. At bottom, there are a variety of arrangements available to DOE that could reduce the impacts of UF₆ transfers on the domestic conversion industry.

7. Are there any anticipated changes in these markets that may significantly change how DOE transfers affect the domestic uranium industries?

ConverDyn does not foresee any changes to the domestic conversion market that would significantly change how DOE's transfers affect the conversion industry. Moreover, even if DOE ceased all transfers tomorrow, it would still take time for the domestic conversion industry to recover from the adverse impacts already caused by prior DOE uranium transfers. While the restart of nuclear reactors in Japan could lead to some improvement in market conditions, this change is speculative at this time and may not occur (if at all) for several years, if and when inventories are reduced sufficiently. Since any Secretarial Determination is only valid for two years, changed circumstances in Japan are unlikely to have a positive impact on the global conversion market during the timeframe covered by the Determination, particularly since Japanese operators can rely on existing fuel supplies for any near term operations. In addition, there are a number of reactors in the U.S. that are reportedly facing challenging economic conditions that could lead to decisions to cease operations in the next several years. Such retirements would offset the limited benefits associated with restarting a few Japanese reactors.