**2015 Isotope Supply/Demand Questionnaire-NP Community**

The mission of the Department of Energy (DOE) Isotope Development and Production for Research and Applications Program (DOE Isotope Program, IP) managed by the Office of Science for Nuclear Physics (NP) is to develop, produce, and distribute stable and radioactive isotope products that are of critical strategic importance to the Nation and are in short supply. Stable and radioactive isotopes are vital to the mission of many Federal Agencies and play a crucial role in basic research, medicine, industry, and homeland defense. Federal Agencies that have used isotopes produced by the IP include the National Institutes of Health and their grantees, National Institute of Standards and Technology, Environmental Protection Agency, Department of Agriculture, National Nuclear Security Administration and other organizations within the Department of Energy, Department of Homeland Security, and others. The Workshops on Isotope Federal Supply and Demand are very important to the DOE Isotope Program in assessing the Nation’s demand for high priority isotopes to inform our strategic planning for isotope production development, and to ensure that federal agency needs are met. The input will also be used to guide investments in R&D to develop techniques to produce new isotopes of interest that are not currently available. The Workshop also provides the opportunity for the DOE IP to communicate back to the federal community concerns about supply chains of isotopes and new availability of isotopes of interest.

To prepare for this Workshop on Isotope Federal Supply and Demand, we are requesting that the major NP programs at universities and laboratories complete this form (or the alternate excel version) by **October 16, 2015**. Institutions should consider isotope demands needed only for their own mission accomplishment and not try to identify isotope demand needed for another Agency/Institution; this will minimize double counting**.** The focus is on high priority isotopes which are or could become in short supply; isotopes that are not currently available on the market, but which your Agency could be interested in obtaining; isotopes for which your Agency foresees a significant change in demand (which could create a constraint in supply); and isotopes provided by unreliable and/or jeopardized sources). Many programs have purchased devices such as detectors and calibration sources and gauges that contain isotopes that originated from the DOE’s IP. Please consider this in your analysis thus assuring that your future requirements will be met.

We recognize that the isotope product chain can be long at times, and your organization’s needs may take some effort on your part. We appreciate and thank you in advance for your participation in this exercise, which will enhance communication between agencies and help mitigate and avoid shortages in critical isotopes. This input will help the DOE IP ensure that important isotopes to federal missions will be available and mitigate potential supply constraints.

*In addition, upon request of the Bureau of Land Management, we are continuing to gather specific input regarding Agency needs of Helium-4 available through the Bureau of Land Management “in-kind” distribution program. A separate table (Table 2) is included specifically to document estimated He-4 demand for future years and actual usage for FY 2014. This information has been extremely valuable to the BLM.*

**Isotope Supply/Demand Questionnaire**

(Deadline for submission: October 16, 2015)

Provide information in Table 1 on stable and radioactive isotopes needed by **your** Institution for NP-funded activitiesover the next five years. Entries should be limited to isotopes which are or could become in short supply; isotopes that are not currently available on the market, but which your institution could be interested in obtaining; isotopes for which your institution foresees a significant change in demand (which could create a constraint in supply); and isotopes provided by unreliable and/or jeopardized sources **Do not include isotopes needed for your activities that are not funded by NP.** Do not include He-3 in this exercise because it has a separate, rigorous process for identifying needs. However, do include in-kind (refined) helium, as described below, in Table 2.

Even if you are uncertain whether your institution will actually need any or all of the isotopes you list during the time period of interest, please complete the Supply/Demand Questionnaire regardless. If a specific isotope is not requested by you or anyone else, then there is no guarantee that it will be considered for production in the near future. *By submitting this form, you are not placing an order or committing to a need for these isotopes.*

The DOE Isotope Program will follow up with each institution regarding its input and provide direction as to availability and path forward for ensuring isotope availability.

The questionnaire is available in two formats – MS Word tables in this document and a separate MS Excel workbook. You may use either or start with the MS Word tables and use the MS Excel workbook as a continuation document.

**ISOTOPE SUPPLY/DEMAND QUESTIONNAIRE**

**NP Institution:**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **POC:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **Date**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

Name, phone number, email address

**Table 1. Isotope Demand**

Use the table below or the accompanying MS Excel worksheet.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **NP Institution:** | | | | **POC** (name, phone #, email address): | | | | | **Date:** | |
| **Isotope** | **Research or Applied** | **User (Nat. Lab., Univ., or others)** | **Intended Use** | **Purity and/or specifications** | **Physical Form** | **Quantity FY 2016** | **Quantity FY 2017** | **Quantity FY 2018** | **Quantity FY 2019** | **Quantity FY 2020** |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |

**Isotope:** Entries should be limited to isotopes which your Agency has a concern might be or is in short supply, desired isotopes that are not currently available on the market at all but which you would be interested in obtaining, isotopes for which your Agency foresees a significant change in demand (which could create a supply shortfall), and isotopes provided by sources whose continued future supply is uncertain. Examples are C-14, U-238, W-188, Gd-153, Ni-63, At-211.

**Research or Applied**: Identify if the isotope is used for research or application purpose.

**User***:* Please identify if the isotope will be used internally in your institution or externally by contractor (under contract or planned) and provide the name of the contractor.

**Intended Use***:* Briefly describe how the isotope will be used, i.e., drug discovery, cancer therapy or diagnostics, calibration source, radiography, neutron detection, environmental remediation, standards and tracers, etc.

**Purity and/or specifications***:* Enrichment, specific activity, radioisotopic purity, radiochemical purity, radioactive concentration, etc.

**Physical Form***:* gas, liquid, solid (nitrate, chloride, etc.), generator system.

**Quantity FY 2016-2020***:* Provide your best estimate on isotope quantities needed over each of the next 5 years. Be sure to include measurement unit (e.g., grams, liters, curies) and environmental condition if appropriate (e.g., standard temperature and pressure).

**Table 2. Helium-4 Information**

**This specific information is being collected at the request of the White House Office of Science and Technology Policy (OSTP) Office, and the He-4 information only will be shared with OSTP and the Bureau of Land Management to assist with management of the Federal Helium Reserve and the “in-kind” helium program.**

Use the table below or the accompanying MS Excel worksheet to provide actuals for FY 2014 and projected needs for FY 2016-2026. It is not necessary to address the current FY 2015 at this time.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **NP Institution:** | | | **POC (name, phone #, email address):** | | | | | **Date:** | |
| **Isotope** | **User (Nat. Lab., Univ., or others)** | **Form (gas or liquid)** | **FY 2014 Actuals** | **FY 16 Q1** | **FY 16 Q2** | **FY 16 Q3** | **FY 16 Q4** | **FY 17** | **FY 18** |
| **He-4** |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Isotope continued** | **FY 19** | **FY 20** | **FY 21** | **FY 22** | **FY 23** | **FY 24** | **FY 25** | **FY 26** |
| **He-4** |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |

**Helium-4 only**: In-kind (refined) helium (sold from Bureau of Land Management reserves) - volumes either liquid (liters at ~4º K) or gas (cubic feet at STP - 14.7 psia at 70º F), or both, by quarter for FY 2016 and by year for FY 2017 through FY 2026.

**Table 3. Isotope Supply**

**Does your institution own any reserves of isotopes that could be distributed? \_\_\_\_\_\_\_\_\_\_ (Yes or No; If yes, please elaborate below)**

Use the table below or the accompanying MS Excel worksheet.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **NP Institution:** | | | **POC** (name, phone #, email address): | | |
| **Isotope** | **Physical Form** | **Purity and/or specifications** | **Location of reserve** | **Size of reserve** | **Comments** |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

**Please e-mail this Questionnaire Form by October 16, 2015, to Dr. Jehanne Gillo at Jehanne.Gillo@science.doe.gov with a copy to Mr. Bill Newton at NewtonSolutionsLLC@comcast.net**