

## Proposed Action

DOE's Proposed Action is to develop guidance that can be used in making decisions to support the State of Hawaii in achieving the HCEI's goals.

For the Hawaii Clean Energy Draft PEIS, DOE and the State of Hawaii identified 31 clean energy technologies and activities associated with potential future actions and grouped them into five clean energy categories:

- Energy efficiency,
- Distributed renewable energy technologies,
- Utility-scale renewable energy technologies,
- Alternative transportation fuels and modes, and
- Electrical transmission and distribution.

For each activity or technology, the Draft PEIS identifies potential impacts to 17 environmental resource areas and potential best management practices that could be used to minimize or prevent those potential environmental impacts.

## Document Availability

The Hawaii Clean Energy Draft PEIS is posted at <http://hawaiiicleanenergypeis.com> and <http://energy.gov/nepa/eis-0459-hawaii-clean-energy-programmatic-environmental-impact-statement>. To obtain a compact disk (CD) of the Draft PEIS, contact Dr. Summerson at the address under **ADDRESSES** above, online at <http://hawaiiicleanenergypeis.com>, or by email to [hawaiiicleanenergypeis@ee.doe.gov](mailto:hawaiiicleanenergypeis@ee.doe.gov). Printed copies of the complete PEIS are available at:

- Hawaii State Library, 478 South King Street, Honolulu, HI 96813.
- Lanai Public and School Library, 555 Fraser Ave, Lanai City, HI 96763.
- Wailuku Public Library, 251 High Street, Wailuku, HI 96793.
- Molokai Public Library, 15 Ala Malama, Kaunakakai, HI 96748.
- Hilo Public Library, 300 Waiuanue Ave, Hilo, HI 96720.
- Kailua-Kona Public Library, 75-138 Hualalai Road, Kailua-Kona, HI 96740.
- Lihue Public Library, 4344 Hardy Street, Lihue, HI 96766.
- Kaneohe Public Library, 45-829 Kamehameha Highway, Kaneohe, HI 96744.

DOE will provide a printed copy of the Summary or complete Draft PEIS upon request. However, due to the size of the document (approximately 60 pages for the Summary and 1,300 pages for the complete Draft PEIS), DOE recommends that interested parties take advantage of the download or CD options. If a printed copy is required,

contact Dr. Jane Summerson at the address above or by email to [hawaiiicleanenergypeis@ee.doe.gov](mailto:hawaiiicleanenergypeis@ee.doe.gov).

## Public Hearings

The Department invites interested parties to provide comments on the Draft PEIS at public hearings to be held May 12 through May 22, 2014, at:

- May 12: Kauai, Kauai War Memorial, Convention Hall, 4191 Hardy Street, Lihue, HI 96766.
- May 13: Hawaii, Kealahou High School, 74-5000 Puuhuluhuli Street, Kailua-Kona, HI 96740.
- May 14: Hawaii, Aunty Sally Kaleohano's Luau Hale, 799 Piilani Street, Hilo, HI 96720.
- May 15: Maui, Pomaikai Elementary School, 4650 South Kamehameha Avenue, Kahului, HI 96732.
- May 19: Molokai, Kaunakakai Elementary School, 30 Ailua Street, Kaunakakai, HI 96748.
- May 20: Lanai, Lanai High & Elementary School, 555 Fraser Avenue, Lanai City, HI 96763.
- May 21: Oahu, Kawanakoa Middle School, 49 Funchal Street, Honolulu, HI 96813.
- May 22: Oahu, James B. Castle High School, 45-386 Kaneohe Bay Drive, Kaneohe, HI 96744.

Each hearing will begin at 5:00 p.m. and end at 8:30 p.m. Each hearing will start with an open house (5:00-5:45), when Federal and State personnel and their contractors will be available to answer questions in an informal setting. The open house will be followed by a presentation (5:45-6:00) by Dr. Summerson, who will describe the PEIS, the NEPA process, and the methods that can be used to submit comments. During the remainder of the hearing, interested parties may present oral comments to DOE. A court reporter will transcribe the comments presented at each hearing. Individuals wishing to speak at a hearing should register when they arrive. DOE will initially allot three minutes to each commenter to ensure that as many people as possible have the opportunity to speak. More time may be provided, as circumstances permit. Written comments may be submitted at the hearing or by the other methods described in **ADDRESSES** above. DOE will give equal consideration to oral and written comments in preparing the Hawaii Clean Energy Final PEIS.

Issued in Washington, DC, April 14, 2014.

**Patricia A. Hoffman,**

*Assistant Secretary, Office of Electricity Delivery and Energy Reliability.*

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## DEPARTMENT OF ENERGY

### Proposed New Program in Stewardship of Accelerator Technologies for Energy and Environmental Applications

**AGENCY:** Office of High Energy Physics, Office of Science, Department of Energy.

**ACTION:** Notice of request for information (RFI).

**SUMMARY:** The Office of High Energy Physics, as DOE's lead office for long-term accelerator R&D, invites interested parties to provide input on a possible new program to perform R&D leading to advances in particle accelerator technology used in energy and environmental applications.

**DATES:** Written comments and information are requested on or before May 19, 2014.

**ADDRESSES:** Interested persons may submit comments by email only. Comments must be sent to [EnergyEnvironmentRFI@science.doe.gov](mailto:EnergyEnvironmentRFI@science.doe.gov) with the subject line "Stewardship RFI Comments".

**FOR FURTHER INFORMATION CONTACT:** Dr. Eric R. Colby, (301)-903-5475, [Eric.Colby@science.doe.gov](mailto:Eric.Colby@science.doe.gov).

### SUPPLEMENTARY INFORMATION:

#### The Challenge

With world energy consumption predicted to grow by 56% between 2010 and 2040,<sup>1</sup> innovations that reduce pollutants from energy production, improve energy efficiency of industrial processes, and develop cost-effective techniques to clean up water and destroy environmental toxins will become increasingly important both to sustaining economic growth, and to protecting the environment.

Accelerator technologies have been demonstrated to have significant impact in each of these areas,<sup>2,3,4,5</sup> but have not reached a sufficient level of technical maturity and economy to be widely adopted.

#### The Response

The U.S. Department of Energy, acting through the Office of High Energy

<sup>1</sup> International Energy Outlook 2013, <http://www.eia.gov/forecasts/ieo/>.

<sup>2</sup> R. Hamm, M. Hamm, *Industrial Accelerators and Their Applications*, (World Scientific, Singapore: 2012).

<sup>3</sup> *Environmental Applications of Ionizing Radiation*, W. Cooper, R. Curry, and K. O'Shea, Editors, (John Wiley & Sons, New York: 1998).

<sup>4</sup> "Accelerators for America's Future", <http://science.energy.gov/~media/hep/pdf/accelerator-rd-stewardship/Report.pdf> (2009).

<sup>5</sup> Office of High Energy Physics Accelerator R&D Task Force Report, May 2012 [http://science.energy.gov/~media/hep/pdf/accelerator-rd-stewardship/Accelerator\\_Task\\_Force\\_Report.pdf](http://science.energy.gov/~media/hep/pdf/accelerator-rd-stewardship/Accelerator_Task_Force_Report.pdf).

Physics in the Office of Science, has developed a program in Accelerator Stewardship to serve as a catalyst in transitioning accelerator technologies to applications beyond High Energy Physics.

The Stewardship Program will apply the scientific and technical resources of the DOE accelerator R&D program to facilitate developing accelerator technology innovations into practice.

Accelerator technology includes the accelerator structures, high power radio frequency and microwave sources and systems, high efficiency high-voltage pulsed-power systems, particle beam transport using magnetic components, and high power targets for producing secondary beams. Sophisticated superconducting magnets and accelerators now routinely produce magnetic and electromagnet fields of unsurpassed strength, power, and quality. Accelerator technology also includes computer control and automation systems, supporting laser systems, safety systems, and diagnostics.

Accelerators produce high power particle beams of electrons and protons that have been used to generate a wide array of intense secondary beams, principally neutrons and photons. Spectral control of both primary and secondary beams has become sophisticated, allowing beams to be specifically tailored to meet demanding application requirements.<sup>6</sup>

The Stewardship Program will pursue several technical “thrust areas”, each of which will address an identified group of technically related challenges that, if solved, will result in high impact to society.

In the process, high technology will be transferred from the DOE accelerator R&D program into broader use, new public/private partnerships will be fostered, and high quality high technology jobs will be created.

**Request for information:** The objective of this request for information is to gather information about opportunities for research and development of accelerator technologies to address national challenges in energy and the environment.

The questions below are intended to assist in the formulation of comments, and should not be considered as a limitation on either the number or the issues that may be addressed in such comments. All comments will be made public.

The DOE Office of High Energy Physics is specifically interested in receiving input pertaining to any of the following questions:

#### **Application Areas With High Impact**

1. What are the most promising applications of accelerator technology to:
  - a. Produce safe and clean energy?
  - b. Lower the cost, increase the efficiency, or reduce the environmental impact of conventional energy production processes?
  - c. Monitor and treat pollutants and/or contaminants in industrial processes?
  - d. Monitor and treat pollutants produced in energy production?
  - e. Increase the efficiency of industrial processes with accelerator- or RF/microwave-based processes?
  - f. Treat contaminants in domestic water supplies and waste water streams?
  - g. Treat contaminants in the environment at large (cleanup activities)?
  - h. Produce alternative fuel sources?
  - i. Address critical environmental or energy related issues not already mentioned?
2. How should Federal, State, or Local regulators consider technologies in determining regulatory compliance?
3. What metrics could be used to estimate the long-term impact of investments in new accelerator technologies?

#### **For Each Proposed Application of Accelerator Technology**

##### *Present State of the Technology*

4. What are the current technologies deployed for this application?
5. Does accelerator technology have the potential to revolutionize the application or make possible something that was previously thought impossible?
6. Does the US lead or lag foreign competition in this application area?
7. What are the current obstacles (technical, regulatory, operational, and economic) that prevent the technology from being adopted?
8. How is accelerator technology used in the application?
9. Does the performance of the accelerator (either technical, operational, or cost) limit the application?
10. What efforts (both public and private, both domestic and off-shore) currently exist to develop this application?
11. What are the perceived and actual market barriers for the final product?
12. What aspects of the overall technology solution are proprietary or likely to be developed as proprietary, and what aspects are non-proprietary?

#### **Defining the Stewardship Need**

13. What is the present technology readiness level (TRL) of the accelerator technology for this application?

14. What resources (both skill and infrastructure) are needed to advance the technology to a prototype phase?

15. What mix of institutions (industrial, academic, lab) could best carry out the required R&D, and who should drive the R&D?

16. What collaboration models would be most effective for pursuing joint R&D?

17. Would partnering with a DOE National Laboratory be beneficial for the required R&D? Which laboratories could provide the greatest leverage?

18. Should cost sharing be considered for a grant or contract to pursue the R&D?

19. How should R&D efforts engage with other innovation and manufacturing initiatives, such as the NNMI?<sup>7</sup>

20. In what ways are the R&D needs not met by existing federal programs?

21. At what point in the manufacturing development cycle would external support no longer be needed?

22. What metrics should be used to assess the progress of a stewardship effort?

#### **Other Factors**

23. Are there other factors, not addressed by the questions above, that impact the successful adoption of accelerator technology for industrial purposes?

Depending on the response to this RFI, a subsequent workshop may be held to further explore and elaborate the opportunities.

Issued in Washington, DC, on April 8, 2014.

**Michael Procaro,**

*Acting Associate Director, Office of High Energy Physics.*

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## **DEPARTMENT OF ENERGY**

### **Federal Energy Regulatory Commission**

#### **Combined Notice of Filings**

Take notice that the Commission has received the following Natural Gas Pipeline Rate and Refund Report filings:

#### **Filings Instituting Proceedings**

*Docket Numbers:* RP14-722-000.

<sup>7</sup> See <http://manufacturing.gov/> for an NNMI program description.

<sup>6</sup> “Accelerators and Beams: Tools of Discovery and Innovation”, APS-DPB brochure, [http://www.aps.org/units/dpb/upload/accel\\_beams\\_2013.pdf](http://www.aps.org/units/dpb/upload/accel_beams_2013.pdf).