

Examining Priorities and Effectiveness of the Nation's Science Policies

Witness:

John Holdren

Assistant to the President for Science and Technology

Director, Office of Science and Technology Policy

Committee Members Present:

Ralph Hall (R-TX), Chair

Eddie Bernice Johnson (D-TX), Ranking Member

Randy Hultgren (R-IL)

Steven Palazzo (R-MS)

Dana Rohrabacher (R-CA)

Judy Biggert (R-IL)

Lamar Smith (R-TX)

Mo Brooks (R-AL)

Lynn Woolsey (D-CA)

Hansen Clarke (D-MI)

Brad Miller (D-NC)

Ben Quayle (R-AZ)

Donna Edwards (D-MD)

Zoe Lofgren (D-CA)

Jerry McNerney (D-CA)

Suzanne Bonamici (D-OR)

Randy Neugebauer (R-TX)

Andy Harris (R-MD)

Daniel Lipinski (D-IL)

On June 20, 2012, the House Committee on Science, Space and Technology held an oversight hearing on the priorities and effectiveness of the nation's science policies. The oversight was conducted on the organization and current priorities of the Office of Science and Technology Policy (OSTP). This office was formed under The National Science and Technology Policy, Organization, and Priorities Act of 1976 (P.L. 94-282). According to the OSTP web site, the office was established to "advise the President (...) on the effects of science and technology on domestic and international affairs." John Holdren, director of OSTP and assistant to the President for Science and Technology, testified to the committee.

Chairman Ralph Hall (R-TX) began the hearing with his opening statement by noting how there is "not a more important position on the Hill" than Holdren's when it comes to the House Science Committee. Hall noted how this is the first time the committee has conducted an oversight hearing on the priorities and organization of OSTP. He discussed how the committee would look at responsibilities, operations, management, and functions in policies of the OSTP. Hall expressed his concern over various science and technology policy issues including clean energy, applied research, and human space flight. He said he would like to see OSTP action on data transparency, a position on the proposal to transfer the Joint Polar Satellite System's (JPSS) operation and management from the National Oceanic and Atmospheric Administration (NOAA) to the National Aeronautics and Space Administration (NASA). The JPSS is a polar-orbiting environmental satellite system. He asked for the administration's science,

technology, engineering, and mathematic (STEM) education strategic plan as well.

Ranking Member Eddie Bernice Johnson (D-TX) gave her opening statement saying the OSTP “has been asked to do a lot.” She mentioned the office’s involvement in “interagency coordination” to avoid duplication and “ensure that significant research gaps are addressed.” She noted that even with his “limited authority,” Holdren’s accomplishments are due to his “leadership, persuasion, and persistence.”

John Holdren then gave his testimony, saying how “science, technology, and innovation have been at the core of the American success story” since the formation of the country. He then listed some activities of the OSTP. Holdren discussed the use of science and technology for “economic growth,” including the new program U.S. Ignite. He mentioned clean energy technology and the organizing of financial support for research related to clean energy. Holdren discussed the OSTP’s involvement in STEM education, including the “Educate to Innovate” partnership. He then discussed implementation of the Open Government Initiative as brought forth by the President. Holdren closed by saying the OSTP would “ensure the policies” are formed from up-to-date science and technology data.

Hall opened the questions asking Holdren how a “regulate at any cost approach to energy policy” would help the U.S. middle class. Holdren noted the “all-of-the-above” plan and the goal of a future with less imported energy. Representative Lynn Woolsey (D-CA) began her questions by asking how the U.S. is doing in support for science in technology compared to the rest of the world. Holdren said the U.S. continues to “lead the world in science, engineering, and innovation” and is a leader in space. He said the U.S. is the “largest funder of research and development” with spending on research and development (R&D) over “\$400 billion a year.” Contrary to all these successes, Holdren said work still needs to be done in STEM education, where the U.S. has “fallen to the middle of the pack.” Woolsey then asked about the challenges in federal agencies, academia, and industry in trying to moving forward. Holdren discussed each individually, mentioning the National Science and Technology Council, which has five committees and several subcommittees. As for private sector and academia, Holdren said they are stepping up and the private sector is focused on maintaining research and the importance on STEM education.

Representative Dana Rohrabacher (R-CA) focused his questions on nuclear asking about light water reactors (LWR). Rohrabacher cited the Department of Energy’s (DOE) reduction of funding by 10 percent to the fast spectrum reactors and high temperature cool reactors in the Office of Nuclear Energy. Research for LWR, which Rohrabacher referred to as “old technology,” is being increased in the President’s fiscal year (FY) 2013 budget. Rohrabacher asked Holdren if this was “a matter of policy coming out of the administration.” Holdren corrected him by saying investments in LWR are not “investments in old technology,” but rather advancements. Holdren said advanced LWR will be contributors to low-emission energy supply in the future. Rohrabacher asked if LWR would contribute to the nuclear waste problem. Holdren said “the problem would be the same if we didn’t take steps to solve it, but we are taking steps to solve it.”

Representative Suzanne Bonamici (D-OR) began her questions re-capping the recent wash up of a dock on Oregon’s shore that was tsunami debris from the March 2011 Tohoku magnitude 9.0 earthquake. She asked Holdren what part OSTP is playing in the response effort. Holdren said the OSTP is “advisory and analytical” but works with agencies that conduct the operations. In regards to the OSTP, they have been “overseeing” radioactivity levels assessments. Holdren emphasized that the National Oceanic and Atmospheric Administration (NOAA) is struggling to respond because of limited funding. Bonamici asked Holdren to discuss work being done to promote STEM education. Holdren noted \$3 billion in the President’s 2013 budget proposal for programs. This includes investments in K-12 teacher effectiveness and post-secondary STEM education aspects of education. He mentioned the President’s Council of Advisors on Science and Technology (PCAST) and said two reasons for loss of students obtaining STEM degrees is due to a “math gap” and “teaching effectiveness gap.” Students do not receive sufficient math in high school to prepare them for college level courses, thus leading to a “math gap.” In regards to effective teaching, some introductory courses can be very “boring,” which makes students leave the field.

Representative Donna Edwards (D-MD) mentioned how recommended priorities by the National Academy’s decadal surveys do not match the budgets and priorities of the administration. She said the European Space Agency (ESA) and NASA’s “ExoMars” mission was “terminated.” She asked how priorities are organized accounting for the surveys. Holdren said the Mars program still remains “robust” and that the mission was not “feasible.” In regards to the decadal surveys, he said they followed what the survey said to do if funds were not available. Edwards closed by saying “it’s very frustrating (...) to do science on a hit or miss, year to

year basis.”

Representative Randy Hultgren (R-IL) focused mainly on high energy particle physics. He asked if the U.S. should build “large scale” facilities for research, or if students should go abroad for physics. Holdren said they are “not giving up” on the venture, but there are budget constraints. Hultgren referenced a *Space News* article which said that the U.S. has dropped to third place in space exploration. Holdren disagreed, saying the U.S. is “still number one (...) and intends to stay that way.”

Representative Brad Miller (D-NC) focused his questions on rare earth elements (REE) and energy critical elements. He asked Holdren what government should do in regards to these elements and what are the “notable research gaps.” Holdren said the OSTP has hosted “round tables with industry.” DOE has been working on R&D for REEs and in the 2012 appropriations bill received \$20 million for an energy innovation hub on critical materials. This hub has a continued funding request in the 2013 budget.

Representative Zoe Lofgren (D-CA) cited a National Academy of Science’s report, titled Managing for High-Quality Science and Engineering at the NNSA National Security Laboratories, highlighting “the broken relationship between the National Nuclear Security Agency (NNSA) and the scientists at our (U.S.) research labs.” Lofgren asked Holdren if NNSA has done anything to fix what is outlined in the report. Holdren said the OSTP has a task force following the recommendations of the report. He said there is a need to “maintain the quality of the science and engineering at our national defense laboratories.”

Representative Mo Brooks (R-AL) focused his questions on the President’s request for a clean energy standard (CES). Brooks asked for Holdren’s judgment on what effect a CES would have on energy costs. Holdren said he had no judgment on the question. Brooks listed some “green jobs” as defined by the administration. Some of these included: “college professors teaching environmental courses, school bus drivers, employees at bicycle shops, antique dealers, and Salvation Army employees.” Brooks asked Holdren if the definition is flawed. Holdren said, as described, the definition is “overly broad.”

Representative Jerry McNerney (D-CA) asked Holdren how STEM initiatives would be used in the districts. Holdren mentioned “Change the Equation” initiative and “Educate to Innovate” strategy and their design to work at the local level.

Representative Ben Quayle (R-AZ) asked what activities at National Institute of Standards and Technology (NIST), NASA, National Science Foundation (NSF), and DOE are going to be reduced to fund the President’s National Network of Manufacturing Innovation pilot program, introduced on March 9, 2012. Holdren said he “didn’t think any activities are going to be reduced.”

Johnson asked Holdren about the turnover rate of staffing in the OSTP and how many people carry over from administration to administration. Holdren said in his time over the past three years only 10 to 12 are remaining from the previous administration.

Representative Andy Harris (R-MD) began by asking about “transparency.” He wanted to know if the federal government, “as a matter of principal,” should make scientific data used for “regulatory actions” public. Holdren agreed and said data used “should be made public.” Harris then pointed out Holdren left natural gas off of his list of clean energies in his testimony. Holdren assured Harris there was no reason why he left it out. He said natural gas is “the cleanest of the fossil fuels” though there is no need for a “large federal R&D program.” However, he noted the need for federal R&D for studies on the safety of hydraulic fracturing, so the public has “confidence in it.”

Representative Daniel Lipinski (D-IL) finished the question segment by asking about “innovation induced in prizes at federal agencies” and referenced the success of prizes as detailed in the OSTP report, Implementation of Federal Prize Authority: Progress Report. This was conducted in response to the America COMPETES Reauthorization Act of 2010 (P.L. 111-358). This act granted agencies the ability to award prizes in an effort to spark innovation, solve problems, and further missions. Lipinski wanted an update of the program. Holdren said the prizes are an “efficient” way to drive innovation and these competitions are taking place in around 40 different agencies. The awards are beneficial, as they only pay for successful projects.

Opening statements, full witness testimony, and a webcast of the hearing can be found on the House Committee on Science, Space and Technology web site.
