Union of Concerned Scientists
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This testimony is presented by Dr. Francesca Grifo, Senior Scientist with the Union of Concerned Scientists (UCS), a leading science-based nonprofit working for a healthy environment and a better world. The full testimony is submitted for the record. Dr. Grifo will summarize her statement for the Committee on the need for Refunding of the Office of Technology Assessment (OTA). This written testimony provides (1) a brief introduction, (2) a summary of why Congress needs the OTA, (3) the unique qualities of the OTA, (4) the weaknesses of the arguments against the OTA, (5) what an OTA might look like today, and (6) recommendations for next steps.

Madame Chair, Ranking Member Aderholt, and members of the Subcommittee, the Union of Concerned Scientists appreciates the opportunity to testify today on an extremely important issue – appropriations for the Office of Technology Assessment (OTA).

In order for Congress to responsibly manage the taxpayer's money and to enact laws that keep our nation secure and healthy, Congress must ensure that it has a source of credible and timely advice on science and technology. Such an organization would look very much like the OTA, which was defunded in 1995 but never eliminated. As the world grows ever more complicated and as global challenges mount, the time has come to bring the OTA back.

I. Introduction

With the Technology Assessment Act of 1972, Congress created a new agency—the Congressional Office of Technology Assessment, known as the OTA—to provide "unbiased information concerning the physical, biological, economic, social, and political effects of technological applications."[1]

From 1972 to 1995, the OTA helped Congress to assess complex issues and make wiser legislative choices. OTA reports addressed issues before almost every Congressional committee, and through those reports, legislators could better understand new technologies and their policy implications. The reports helped set the terms of debate and increased understanding of the risks and implications of policy options. Because these reports were designed to frame issues and assess multiple policy alternatives, they were often cited by both sides during the same Congressional debate.

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During its 23 years of operation, OTA produced about 750 studies.[2] At the time of its demise, the OTA was the government's smallest agency with fewer than 150 permanent staff but it exerted an outsized influence in the policy world and had many admirers from all parts of the political spectrum. France, the Netherlands, Sweden, and a dozen other countries established science and technology information agencies based on the OTA model.[3]

Although funding for the OTA was eliminated in 1995, the legislation that created it was never repealed. Congress should renew funding for the OTA to restore the legislature's ability to understand the implications of policy choices surrounding complex issues.

II. Why Congress Needs an OTA

OTA is a Credible Source of Information.
Washington, D.C. is a city awash in reports, white papers, fact sheets and other bits of information. The challenge for Congress is to separate the valuable information from the spin. This process is time consuming and often requires a level of expertise that even the best and most well-trained staffers will not always have.

Members of Congress certainly do not lack for input, but in many situations they do lack accurate and nonpartisan information that is structured in a way they can easily use. OTA was uniquely structured to provide credible information in the following areas:

- Unnecessary expenditure of taxpayer money on unproven technologies or other policies that are scientifically indefensible
- Early identification and analysis of technological issues before they became national crises
- Evaluation of Executive Branch science and technology initiatives to aid Congress in its oversight duties.

While the analysis produced by OTA did not always drive congressional decision making, it did set boundaries to the debate, rule out some scientifically incorrect arguments, and help to frame political decisions in technically defensible ways.

The National Academies, the Congressional Research Service (CRS), and the Government Accountability Office (GAO) all have important and related missions and do them well, but as we describe below, they cannot meet these needs and replace what the OTA was able to do.

OTA Can Save Taxpayer Money and Save Lives.
When OTA was operational, it more than earned its keep by identifying wasteful and ineffective programs and suggesting improvements to others. We provide a few relevant examples:

- A 1988 OTA study, "Healthy Children: Investing in the Future" pointed out the vulnerability of low birthweight infants to a variety of physical and mental disabilities. Its research concluded that expanding Medicaid eligibility to all pregnant women living in poverty would cost much less than the cost of $14,000 to $30,000 to treat the health problems of each low birthweight infants.[4] That study helped change Medicaid eligibility

rules by expanding access to prenatal care to millions of women in poverty.

- A 1987 OTA study predicted that Medicare coverage of mammograms for senior women could cut breast cancer deaths by 22 percent by the year 2000.[5] Likewise, a 1990 OTA study concluded that older women undergoing routine pap smears were much less likely to develop cervical cancer than unscreened women.[6] Both of these reports were instrumental in expanding Medicare coverage to include routine mammograms and pap smears, thus saving lives.

- A 1992 OTA study, "Special Care Units for People with Alzheimer's and Other Dementias," was instrumental in helping federal and state governments achieve cost savings totaling $14 million annually.[7]

A number of OTA reports also proved to be years ahead of their time on many of the critical issues Congress is debating today – from weapons proliferation to genetic discrimination. On the topic of renewable fuels, a 1995 OTA report "Renewing Our Energy Future" had already identified the drawbacks of corn ethanol and the potential of second-generation biofuels such as switch grass.[8]

Finally, in recent years Congress has approved a number of expensive yet troubled programs that could have been identified and averted by a timely OTA assessment.

- The Department of Homeland Security (DHS) spent three years pushing for a costly radiation detection system for smuggled nuclear material that did not work as billed, while it neglected to upgrade existing equipment that could have helped improve security. The DHS had already awarded billions of dollars in contracts for deployment of the detectors before a series of critical GAO reports and Congressional outcry caused the agency to reconsider.[9]

III. The Unique Qualities of OTA

There are a number of possible ways to structure technical advice to Congress, but a successful technology assessment organization should incorporate the following features:

- The ability to access the highest levels of expertise on a given subject and the ability to utilize external peer review in finalizing its reports
- The ability to assess information in an unbiased manner that would gain the respect of both parties
- A focus on serving the needs of Congress and framing the issue in a way that is useful to legislators and their staffers
- An institutional culture conducive to asking hard questions and clearly communicating the answers
- The ability to be forward thinking and to address emerging issues, not just current crises
- An institutional commitment to transparency
- The capacity and resources needed to complete reports in a timely fashion.

Fulfilling all of these qualities is a challenge but the former OTA was quite successful at doing just that. Other researchers have considered similar parameters and concluded that any feasible alternate proposal for a technology assessment organization would end up looking quite similar to OTA.[10,11]

The National Academy of Science (NAS), the Congressional Research Service (CRS) and the Government Accountability Office (GAO) are three other entities that are also in the business of providing information to Congress. These three organizations are all good at what they do, and they should continue to do it, but none of them satisfactorily fills the important role that OTA played.

- The NAS provides excellent consensus recommendations from groups of the nation's most respected scientists and experts. But advising Congress is not its primary function and while it tries to be responsive to congressional requests, it can and does say no at times. NAS does not have any capacity for post-study follow up. Furthermore, the NAS is not always attuned to the needs and timelines of legislators and its reports are very expensive to produce. Not being a government agency, the NAS lacks the automatic and high-level access to other parts of the federal government that OTA would have.

- The CRS is highly respected for its rapid response, but it is not accustomed to making its reports public, or working with stakeholders or outside experts. It lacks a culture of transparency. It does not have the technological or analytical capacity of the OTA, nor does it have experience with external peer review. Historically CRS has responded to requests from members not committees.

- The GAO has very recently begun to undertake technological assessments of the type formerly done by OTA, but that program is bound by the rules and culture of a financial auditing agency. While the GAO has extensive access to all parts of the federal government and has produced numerous reports that have proven extremely useful for oversight, it has little experience with forward-looking assessments. Given the GAO's core mission, it is unlikely that technology assessment will find a permanent home at GAO.

The Structure of OTA.

The Congressional environment is highly political and hence technical analysis for Congress is very different from research or analysis conducted in academic or other settings. The OTA's unique value derived from its ability to frame problems, to distinguish topics of importance from non-issues, and to identify the important policy choices available. By leaving out the value judgments and prescriptive recommendations, OTA was able to be both authoritative and credible.

OTA was overseen by a Technical Advisory Board (TAB) which was composed of six Senators and six Representatives, evenly split between the two parties. OTA worked primarily on studies requested by Congressional committees and did not issue recommendations for action. Because OTA was a part of Congress it was adept at communicating with politicians but was also sufficiently insulated from politics that its findings were seen as credible.

OTA studies were technically accurate, analytically sound, and while balanced with respect to stakeholder interests, were not watered down by requiring consensus amongst those stakeholders. The reports were highly influential outside of Congress and were often best-sellers at the Government Printing Office. For example, GPO sold 48,000 OTA reports in 1980 alone.[12] All major OTA studies relied on advisory panels of experts who served as sources of information, guidance, and critical review. These panels included top substantive experts, who helped assure the studies' technical and analytic quality, and individuals representing the different interests at stake.

Finally, it is clear that the presence of OTA raised the level of discourse in Congress. In its reports, OTA made no policy recommendations, but rather presented a range of policy options that were consistent with its technical findings. There were instances when a member of the TAB would vote to approve the release of a study and moments later issue a statement critical of some aspect of the report recommendations. Often the same OTA report was cited by both sides of a debate. OTA also informally aided members and their staff in how to think about an issue, by inquiring into the foundations of claims made by a technology and paying close attention to its consequences

IV. The Arguments Against OTA are Weak

Numerous arguments were made in favor of eliminating OTA in 1995, and have been repeated by some in the years since.

Speed. Some criticized OTA for having a report schedule that was too slow for Congress's needs. While OTA could move quickly when necessary, the organization's primary value came in the preparation of more complex reports where the speed of response was less important than getting the analysis right. The niche filled by OTA was that it could undertake longer more complex studies than CRS, which specializes in fast turn-around reports, and it could better tailor its findings to the needs of Congress than could the NAS.

Indeed, many of OTA's reports have proven to be years ahead of their time, and stand as the definitive first analysis of emerging issues years before Congress moved to legislate.

Political bias. A high-profile dispute between OTA and the Reagan administration about the technical feasibility of proposed missile-defense systems gave fuel to the idea that the organization was politically biased. However, the OTA approached even the most controversial topics with objectivity and balance, and in doing so won numerous supporters from both sides of the aisle. OTA's governing structure—in particular, the strictly bipartisan TAB—helped ensure non-partisan analysis. In addition, the OTA restriction on issuing recommendations kept the reports focused on technical issues rather than politics. Appropriations language urging that OTA give priority to requests from Committee chairs *and* their respective ranking members would reinforce OTA's position as the provider of unbiased objective information to Congress.

Redundancy. One argument made in favor of ending OTA was that members of Congress could directly contact any needed experts, rather than using OTA as a "middleman." What's more, in the years since OTA's demise the Internet has radically transformed how Congress and the

public access information. Google and Wikipedia are now the first stop for many people in searching out needed information.

But none of this can replace the value of credible, peer-reviewed technical reports, such as those provided by OTA. Members of Congress can of course seek advice from anyone they wish, but the danger there is that members will only seek out expertise they are already familiar with and not have the resources or time to look further. Furthermore, most of the pressing questions put before Congress simply cannot be decided by information found on a Wikipedia page; as the OTA expert Christopher Hill put it, "Congress is not particularly interested in the melting point of bismuth."[13]

V. What would OTA look like today?

The world has changed since 1972 when the OTA first opened its doors, and undoubtedly the OTA that might open in 2011 would also have to be different. The bicameral bipartisan congressional board, the focus on framing issues and looking to the future, the mix of internal and external expertise, and the attention to the needs of its congressional client are all essential elements that should be retained in any technology assessment organization, no matter its name.

Some recommendations for bringing a revitalized OTA into the 21st century would be:

- Take full advantage of the Internet and electronic communication to boost the public service and education aspect of OTA work
- Greater flexibility in the speed of response to allow some simpler reports to be issued on a shorter timeframe
- Find ways to expand OTA's service to more Members of Congress, not just committee chairs and leadership. This might be S&T training for Congressional staff, smaller reports for individual members or other outreach.
- Establish strong working relationships with similar agencies such as NAS, CRS and GAO.

VI. Conclusions

The OTA model, honed over 23 years of serving the needs of Congress and the nation, has been proven. Nobody would argue that OTA was perfect, however, the Technology Assessment Act has turned out to be an amazingly flexible document, and any needed improvements can be done within its scope. The agency's structure, as defined in 1972, remains appropriate today.

We see the OTA as an important tool to help the United States face the challenges ahead. We call on Congress to reopen the OTA and we look forward to working with members of Congress to achieve this important goal.

We are in the process of engaging the best thinkers on OTA to guide us in the development of a common-sense proposal for re-starting OTA that takes into account our fiscal reality. We will submit a detailed proposal and recommendation of a FY11 funding level within the next two weeks to your office for your consideration. We realize that starting up OTA is a multi-year project, but we do not believe the taxpayers and American families should wait any longer for this effort to begin.

[1] The Technology Assessment Act of 1972, §471, 2 U.S.C. (1972). Online at http://www.law.cornell.edu/uscode/2/usc_sec_02_00000471----000-.html.
[2] The OTA Legacy. Online at http://www.princeton.edu/~ota/.
[3] Vig, Norman J. "The European Experience." In *Science and Technology Advice for Congress*, edited by Morgan, M.G. & Peha, J.M. 2003. Washington, DC: Resources for the Future.
[4] U.S. Office of Technology Assessment. *Healthy Children: Investing in the Future*. OTA-H-345, February 1988.
[5] U.S. Office of Technology Assessment. *Breast Cancer Screening for Medicare Beneficiaries.* November 1987.
[6] U.S. Office of Technology Assessment. *The Costs and Effectiveness of Screening for Cervical Cancer in Elderly Women*. OTA-BP-H-65. February 1990.
[7] M. Granger Morgan and Jon Peha, *Science and Technology Advice for Congress*, Washington: Resources for the Future, 2003, p. 69.
[8] U.S. Office of Technology Assessment. *Renewing Our Energy Future*. OTA-ETI-614. September 1995.
[9] O'Harrow, R. 2009. Report criticizes nuclear detectors. *Washington Post*, June 23.
[10] Epstein, G.L. & Carter, A.B. "A Dedicated Organization in Congress." In *Science and Technology Advice for Congress*, edited by Morgan, M.G. & Peha, J.M. 2003. Washington, DC: Resources for the Future.
[11] Blair, P.D. 2006. "Scientific Advice for Policy in the United States: Lessons from the National Academies and the former Congressional Office of Technology Assessment." Paper presented to Symposium on Quality Control and Assurance in Scientific Advice to Policy. Berlin, Germany January 12, 2006.
[12] Houghton, Amo. "In Memoriam: The Office of Technology Assessment, 1972-95." Congressional Record, Extension of Remarks - September 28, 1995, Page E1868-1870.
[13] Epstein, G.L. 2009. Restart the Congressional Office of Technology Assessment. *Science Progress*, March 31. Online at http://www.scienceprogress.org/2009/03/restart-ota/.