

European Parliament  
Science and Technology Options Assessment (STOA)

# Technology Assessment in the European Parliament

Short presentation of STOA's  
mission, structure and activities

STOA Secretariat  
DG IPOL, European Parliament

## Early STOA history

- **10 October 1985:** The EP adopts a report “on the establishment of a European Parliament Office for Scientific and Technological Option Assessment”.
- The report proposes “that a European Parliament office for scientific and technological option assessment should be set up ... to coordinate assessment work and award external contracts in support of its work”.
- Following a decision of the EP Bureau in June 1986, **STOA is officially launched in March 1987**, as an 18-month pilot project under the responsibility of the then Committee on Research, Technological Development and Energy.
- In September 1988, the **EP Bureau authorises STOA to continue its work on a permanent basis**, on condition that it would make its services available to all standing parliamentary committees. The STOA Panel is created and all standing committees are invited to nominate their representatives to the Panel.

## STOA Rules: Mission

**Article 1(2):** “... STOA shall:

- provide Parliament’s ... parliamentary bodies ... with **independent, high-quality and scientifically impartial studies ... for the assessment of the impact of ... new technologies** and shall identify ... the **options for the best courses of action to take ...**”

**Article 1(3):** “ STOA shall carry out its work in such a way that the results are **relevant to the European Parliament** in its role as legislator.”

**Article 1(4):** “STOA’s work shall have long-term objectives and it shall differ from the work of the Secretariat’s research departments, the task of which is to meet specific sectoral or short-term requirements”.

## STOA Rules: STOA Panel (Articles 3 & 4)

- Integral part of EP structure.
- Decides on STOA activities; examines proposals and approves STOA projects.
- Members: 1 EP Vice-President  
4 ITRE  
2 × 5 (EMPL, ENVI, IMCO, TRAN, AGRI)  
15
- Elected each parliamentary term for a renewable 2 ½ year period; current Panel constituted on 12 November 2009.
- STOA Bureau: Chairman, 2 Vice-Chairmen,  
EP Vice-President responsible for STOA

## STOA Rules: Studies of technology assessment (Article 6)

- Studies of technology assessment should provide an answer to **medium- to long-term, complex and interdisciplinary problems** relating to the impact of scientific and technological developments on society.
- The proposals submitted for that purpose are approved by the STOA Panel on the basis of the following criteria:
  - relevance of the subject to Parliament's work,
  - scientific and technological nature of the proposal, and
  - strategic importance of the proposal and its alignment with priorities defined by the STOA Panel
  - availability of scientific evidence covering the subject.

## STOA Rules: Framework Contract

- **Article 5:** “... studies of technology assessment shall be carried out by an **external contractor** ... The service provided ... shall comprise the **project management**, the scientific analysis of the issue, the highlighting of **options** for action, and a **presentation of the results** in a manner understandable to a layperson”.
- **Public invitation to tender:** selected **framework contractors** approved by EP Bureau (18 February 2009).
- **Contracts signed** on 28 May 2009 (3+1 years).

## **STOA Framework Contractors**

<b>Lot</b>	<b>Contractor(s)</b>
• <b>Energy</b>	• Institute of Studies for the Integration of Systems (ISIS) • Karlsruhe Institute of Technology (KIT)
• <b>Transport</b>	• KIT • Consultrans
• <b>Environment (including Climate Change)</b>	• Institute for European Environmental Policy (IEEP) • KIT
• <b>ICT and Information Society</b>	• KIT
• <b>Nanoscale science and technology (including industrial applications)</b>	• KIT • Interfaculty Envir. Science Dept. of the Amsterdam University (IVAM UvA BV)
• <b>Life-sciences and human well-being</b>	• KIT
• <b>Agriculture, food and biotechnology</b>	• KIT
• <b>Science, Technology and Innovation Policy</b>	• Technopolis • KIT

## **STOA projects financed from 2005-2006 budget**

- 1) Alternative technology options for road and air transport
- 2) Overview of sustainable energy sources
- 3) RFID and identity management
- 4) Technology assessment on Converging Technologies
- 5) Galileo applications
- 6) The role of Nanotechnology in chemical substitution
- 7) Antibiotic resistance
- 8) Future developments in cancer therapy
- 9) Global human health
- 10) Intellectual property rights



## **STOA projects financed from 2006-2007 budget**

- 1) Future Energy Systems for Europe
- 2) The Future of European Transport
- 3) Assessment of the Safety of Tunnels
- 4) New Technologies and Flexicurity
- 5) Impact of Animal Welfare
- 6) Direct to Consumer Genetic Testing
- 7) ICT and Media Industry
- 8) Human Enhancement

## **STOA projects financed from 2008-2009 budget**

- 1) Agricultural Technologies for Developing Countries
- 2) Assessing the potential of ICT to increase energy efficiency and fight climate change - key technologies and prospects
- 3) Current policy issues in the governance of the European patent system
- 4) Towards an Intellectual Property Rights Strategy for Innovation in Europe
- 5) Implications of Global Trends in Eating Habits for Climate Change, Health and Natural Resources

## **STOA projects 2009**

- 1) Technical possibilities of the use of e-voting and other Internet tools in European countries (published)
- 2) Technology options for urban transport (completed, to be published)
- 3) Technology across borders (completed, to be published)
- 4) Nanosafety (completed, to be published)
- 5) Technological impacts of knowledge transfer from Public Research Organisations (PROs; ongoing)
- 6) Making perfect life (ongoing)

## **STOA projects 2010**

### Large-scale projects:

- Eco-efficient transport
- Sustainable management of natural resources
- Security of e-Government systems
- Security of networks and information systems

### Small/medium-scale projects:

- Energy grids/Smart grids
- MEP-Scientist Pairing Scheme
- Systemic approach to adaptation to Climate Change and renewable energy harnessing (biomass and mini-hydro)

## **STOA projects 2011**

- **Impacts and potentials of Cloud Computing services and Social Network Websites**
- **Science Metrics - Measuring scientific performance for improved policy-making**
- **What are the technology options for feeding 10 billion people?**
- Methanol (CH<sub>3</sub>OH): A possible fuel source based on hydrogen and carbon dioxide
- Integrated urban ticketing for public transport and tourist sites
- Breast cancer incidence, prevention and treatment

## **Links with the scientific community and society at large**

1. Collaboration with the European Commission
2. Workshops (co-)organised by STOA
3. Participation in external events
4. STOA Annual Lecture

## Collaboration with the European Commission

### Presentations by the Commission to the STOA Panel:

- “Ethics in Science: Perspective by the European Commission” by BEPA, 18 May 2006
- “European Research Area” by JRC/IPTS, 7 September 2006
- “Cancer Research funded by the European Commission” by DG RTD, 28 September 2006
- “EU-Funded Research on Algae”, by DG RTD, 16 November 2006
- Presentation on the activities of the Centre for Research on Lifelong Learning (CRELL), JRC, 15 November 2007
- “Making a difference in policy-making”, 21 February 2008
- DG SANCO Scientific Committees, 19 June 2008
- “Impact of external project-based funding on financial management in universities”, 12 March 2009

## Collaboration with the European Commission

### Joint activities:

- 19-20 October 2006, European Forum on Nanosciences  
Satellite event in EP: Nanocafé - Nanoscientists meeting MEPs (“Will nanosciences shape future society and how will citizens benefit from it ?”)
- MEP-Scientist Pairing Scheme, “Brussels Week”,  
1-4 Oct 2007 & 2-5 June 2008
- “Energy Foresight Network” (EFONET) Project,  
Start: 1 January 2008; Kick-off meeting: 6 February 2008;  
Final Conference: 7-8 June 2010, EP
- “Risk Governance of Manufactured Nanoparticles”,  
21 November 2011



## Workshops (co-)organised by STOA (2008)

- “*Computer networks for research & education: A European success story – New challenges for policy-makers*”, 2 April 2008
- “*Pan-European Biobanking and Biomolecular Resources Research Infrastructure (BBMRI)*”, 28 May 2008
- “*Biomedical Research - the Cutting-edge – Brain Science-Animal Experimentation-Stem Cells*”, 14 October 2008
- “*De-hyping Biofuels: Creating Clarity in Policy-making for a Sustainable Future*” (dinner-debate), 4 November 2008
- “*Evaluation and Impact Assessment of Community Research Programmes*”, 3 December 2008

## Workshops (co-)organised by STOA (2009)

- “*Cooperation between the EU and Developing Countries in Relation to Socio-Economic Development*”, 4 March 2009
- “*From stem cells to neural circuits: Mechanisms and perspectives for brain diseases*” (Brain Awareness Week at the European Parliament), 18 March 2009
- Lunch-debate on proposal for a Directive on the Protection of Animals used for Scientific Purposes, 25 March 2009
- “*The Future of Biomedical Research in the 21st century*”, 1 April 2009
- “*Working and Living with Nanotechnologies*” (NanoCap final conference), 2 April 2009
- “*Towards an intellectual property rights strategy for innovation in Europe*”, 13 October 2009
- “*Biodiversity research conference*”, 4 November 2009

## Workshops (co-)organised by STOA (2010)

- *“The impact of EU GMO regulation on biotechnology research for the public good”*, 25 February 2010
- *“How our brain works: Recent advances in the theory of brain function”* (Brain Awareness Week at the European Parliament), 16 March 2010
- *“ICT solutions for the real economy”*, 4 May 2010
- *“A Road Map for Ageing Research”*, 11 May 2010
- *“Nanomedicine in Europe: present and for the future”*, 2 June 2010
- *“Avoiding Ash Disruptions: Can technology help to manage air space better?”*, 23 June 2010

## Workshops (co-)organised by STOA (2011)

- “*Education - a lifelong challenge for the brain*” (Brain Awareness Week at the European Parliament), 15 March 2011
- “*Can e-voting increase electoral participation?*”, 17 March 2011
- “*CO<sub>2</sub>: a Future Chemical Fuel*”, 22 March 2011
- “*IT for a Better Future - How to integrate ethics, politics and innovation* ”, 31 March 2011
- “*The importance of Astronomy: the map and the evolution of the Universe*”, 24 May 2011
- “*Can political communication via the Internet and e-participation contribute to the emergence of a European public sphere?* ”, 26 May 2011

## Workshops (co-)organised by STOA (2011, continued)

- “*Conference on pan-European Parliamentary Technology Assessment*”, 7 September 2011
- “*The Changing Face of Risk Governance: Moving from Precaution to Smarter Regulation?* ”, 29 September 2011
- “*Making Perfect Life - Regulatory challenges in 21st century bio-engineering*”, 11 October 2011
- “*Meeting the Grand Challenge of Ageing: the European research agenda*”, 18 October 2011
- “*Chemistry for a better life*”, 9 November 2011

## Workshops (co-)organised by STOA (2012)

- “*Science of Innovation*”, 28 February 2012
- “*Technology Transfer from Public Research Organisations*”, 29 February 2012
- “*Synthetic Biology – New Potentials for the European BioEconomy*”, 6 June 2012
- “*Emerging Infectious Diseases: A continuous challenge for Europe*”, 19 June 2012
- “*Advanced Materials*”, 10 July 2012
- STOA Annual Lecture, Recent developments in Elementary Particle Physics at CERN, 27 November 2012

## Participation in external events

- World Summit on the Information Society, 2003, Geneva
- World Summit on the Information Society, 2005, Tunis
- Brain Research: Key Ethical Challenge of the 21st Century, 18 March 2006, Brussels
- Roundtable, “The Ethical Aspects of Nanomedicine”, 21 March 2006, Brussels
- EuroScience Open Forum, 15-19 July 2006, Munich
- Third Annual Meeting of the STS Forum, 10 - 12 September 2006, Kyoto
- Visit to CERN, 26 February 2007

## Participation in external events (continued)

- 9th European Forum of National Ethics Councils, 24 – 25 May 2007, Berlin.
- Conference: “Nanotechnology – Products and Processes for Environmental Benefit”, 16 – 17 May 2007, London.
- Fourth Annual Meeting of the STS Forum, 7 – 9 October 2007, Kyoto
- Participation in ITRE delegation, 25 – 30 October 2007, Oak Ridge/Washington, USA
- Internet Governance Forum, 12 – 15 November 2007, Rio de Janeiro
- Visit to Inserm laboratories, 5 – 6 February 2008, Paris
- Slovenian Presidency Conference: “The Burden of Cancer – How can it be reduced?”, 7 – 8 February 2008, Congress Centre Brdo, Slovenia



## Participation in external events (continued)

- EuroScience Open Forum, 18-22 July 2008, Barcelona
- Meeting of Committees and Offices for scientific and technological assessment within the parliaments of the EU and the EP, 22 September 2008, Paris
- Fifth Annual Meeting of the STS Forum, 4 – 7 October 2008, Kyoto
- Participation in ITRE delegation, 27 – 29 October 2008, JRC/Ispra & Frascati
- Internet Governance Forum, 15-19 November 2009, Sharm et-Sheikh
- International Dialogue on Bioethics, 4 - 5 March 2010, Madrid
- Visit to CERN, 27 May 2010
- EuroScience Open Forum, 2-7 July 2010, Torino

## Participation in external events (continued)

- Internet Governance Forum, 14 – 17 September 2010, Vilnius
- 7<sup>th</sup> Annual meeting of the Science and Technology in Society (STS) *forum*, 3 – 5 October 2010, Kyoto
- Visit to Offshore Basis Cuxhaven, Niedersachsen, 11 October 2010
- Biovision - The world life sciences forum, 27 – 29 March 2011, Lyon
- 4th International Seville Conference on Future-Oriented Technology Analysis, 12-13 May 2011, Seville
- FUMAT (Future Materials) 2011 Conference, 22 – 23 September 2011, Warsaw
- Internet Governance Forum, 27-30 September 2011, Nairobi
- 8th Annual Meeting of the STS *forum*, 4 – 7 October 2011, Kyoto
- World Science Forum, 17 – 19 November 2011, Budapest
- Euro-Med Conference on Research and Innovation, 2 – 3 April 2012, Barcelona

## STOA Annual Lecture

- **Kary Mullis**, Children's Hospital and Research Institute, Oakland, California: *"Risks and opportunities in the biotechnology era"*, 25 March 2003.
- **Wolfgang Ketterle**, Massachusetts Institute of Technology, MIT-Harvard Center for Ultracold Atoms: *"The coldest matter in the universe – basic research for our future"*, 4 November 2003.
- **Rolf Zinkernagel**, Universitätsspital Zürich, Institut für Experimentelle Immunologie: *"New and old epidemic diseases: a challenge for medical research and policy makers"*, 24 November 2004.
- **Guy Brasseur**, Max Planck Institute for Meteorology Hamburg : *"The Climate of the 21th century: Model Projections"*, 23 November 2005.
- **Phil Janson**, Senior Technical Staff Member, IBM Academy of Technology: *"Avoiding a web of confusion - Innovation in Information Technology"*, 21 November 2006
- **Baroness Susan Greenfield**, Lincoln College, Oxford, Director of the Royal Institution: *"The future of the brain"*, 27 November 2007

## STOA Annual Lecture (continued)

- **Prof. Jeffrey Sachs**, Director of Earth Institute, Columbia University (video-link),  
**Dr. David Eyton**, Group Vice-President of Technology at BP,  
**Prof. Jean-Pascal van Ypersele**, Vice-Chair, Intergov. Panel on Climate Change,  
*“Meeting Future Energy Demands and Tackling Climate Change”*,  
12 November 2008
- **Sir Tim-Berners Lee**, Director of World Wide Web Consortium,  
founder of World Wide Web Foundation,  
*“One web, free and open for all”*, 1 December 2009
- **Shai Agassi**, founder and CEO of ‘Better Place’,  
**George Oláh**, Budapest University of technology and Economics,  
Case Western Reserve University and University of Southern California,  
Nobel Prize in Chemistry 1994 (video link),  
**Paul Crutzen**, Max-Planck-Institute for Chemistry, Nobel Prize in Chemistry 1995,  
*“Is an oil free future possible? The science, technology and economics of running Europe without oil”*, 7 December 2010

## STOA Annual Lecture (continued)

*“Sustainable Management of Natural Resources”*, 29 November 2011

- **Koji Omi**, Founder and Chairman, STS *forum*
- **Prof. Sir Harry Kroto**, Florida State University,  
Nobel Prize for Chemistry 1996 (pre-recorded video + Skype Q&A)
- **John Anthony Allan**, Professor Emeritus at King's College London,  
Stockholm Water Prize 2008
- **Peter A. Wilderer**, Director, Institute for Advanced  
Studies on Sustainability, Technical University of Munich,  
Stockholm Water Prize 2003
- **Mathis Wackernagel**, Founder and Executive Director of  
Global Footprint Network
- **Martin Parry**, Visiting Professor, Centre for Environmental Policy, and  
Visiting Research Fellow, Grantham Institute, Imperial College London
- **Thomas E. Graedel**, School of Forestry and Environmental Studies, Yale  
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