

# Science and Technology Options Assessment

Annual Report 2011

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The STOA Panel approved it on 24 May 2012

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E-mail: [stoa@europarl.europa.eu](mailto:stoa@europarl.europa.eu)

Internet: [www.europarl.europa.eu/stoa](http://www.europarl.europa.eu/stoa)

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# **Science and Technology Options Assessment**

Annual Report 2011

May 2012





# STOA

## Annual Report 2011

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## FOREWORD



Developments in science and technology have potential implications for many policy areas. The role of STOA, the Science and Technology Options Assessment body of the European Parliament, is to provide - in a neutral and independent way - studies assessing the widest possible range of options to underpin policy decisions. These options should ensure that MEPs are provided with state-of-the-art knowledge to reflect upon when carrying out their policy tasks, whilst at the same time considering other factors, such as their individual political and ethical values.

The STOA Panel, that I had the honour to chair during the first two-and-a-half year period of this legislature, worked towards a number of priority objectives, such as eco-efficient transport, sustainable management of natural resources and security of the Internet, including e-government systems and social networks.

STOA ensures that European policy-making is underpinned by sound scientific evidence. Ongoing projects were continued and new ones were launched on e-Democracy, bio-engineering, nanosafety, smart energy grids, European technology assessment practices and effective technology transfer.

Furthermore, in 2011, STOA started to work in collaboration with the Joint Research Centre (JRC) which is making its expertise available to help STOA check the quality of project deliverables and develop technical specifications for new projects.

Another objective was to enhance STOA's visibility, which was started by redesigning the STOA website ([www.europarl.europa.eu/stoa](http://www.europarl.europa.eu/stoa)).

In 2011, to increase interaction between policy-makers and scientists, STOA implemented the 'MEP-Scientist Pairing Scheme', which brought together MEPs and practising scientists for a short period of time. In addition, workshops and other events, including the STOA Annual Lecture, also helped to foster connections between MEPs and stakeholders.

Through the course of 2011, STOA continued to be active on the international level. As a founding member of the European Parliamentary Technology Assessment (EPTA) Network, STOA maintains strong connections and actively cooperates with European organisations such as the European Commission, EuroScience (organisers of the EuroScience Open Forum - ESOF) and ESF (European Science Foundation), and on a global level with the World Science Forum and the STS (Science and Technology in Society) forum.

Further targeted initiatives are scheduled for the coming years, such as large-scale projects on cloud computing, alternative fuels and technology options for feeding 10 billion people.

Finally, I was particularly happy to cooperate within the STOA Bureau with STOA Vice-Chairmen António Correia de Campos and Malcolm Harbour, as well as with former EP Vice-Presidents Giles Chichester and Sylvana Koch-Mehrin, whose commitment and determination crucially helped me ensure the fulfilment of STOA's ambitions for the 7<sup>th</sup> legislative period. I take the opportunity to offer my best wishes for success to my successor, António Correia de Campos, who takes over the STOA Chair for the second half of the Seventh Legislature.

Paul Rübig MEP

*STOA Chairman during the first two-and-a-half period  
of the Seventh Legislature*



## EXECUTIVE SUMMARY

STOA mainly provides studies that assess the impact of introducing or promoting new technologies, and identify from a technological point of view the best possible options for action.

STOAs activities in 2011 concentrated on the following six areas:

1. 'Towards a sustainable society'. STOA carried out studies and organised events concerning societal challenges, such as the sustainable management of natural resources, climate change and the ageing population.
2. 'e-volution' and ICT futures. STOA was particularly active in the areas of e-Democracy, e-Voting and e-Participation, and also dealt with the ethical implications of emerging ICT's.
3. 'Moving European transport forward'. STOA currently has ongoing studies on Europe's eco-efficient transport futures and on technology options for urban transport. Furthermore, a workshop was held that aimed at paving the way for quieter European transport.
4. 'Developing modern energy solutions'. Projects on smart grids / energy grids and CO<sub>2</sub> as a future chemical fuel.
5. 'Shaping our technological society'. STOA has many ongoing actions related to the impact of technological developments on society. These cover 'Making perfect life': Bio-engineering in the 21<sup>st</sup> century; Nanosafety: Risk governance of manufactured nanoparticles; and the activities in the frame of the Brain Awareness Week, during which a session on the ethical dilemmas in brain research took place.
6. 'Progress in modern knowledge and policy'. This is the area in which STOA deals with issues such as copyright in the EU; the technological impacts of knowledge transfer from public research organisations; and technology across borders - a study on parliamentary technology assessment. Events on gender equality in research, on challenges regarding access to scientific data and on astronomy and space sciences are also covered in this area.

In 2011, STOA further developed the MEP-Scientist Pairing Scheme. The effect of this scheme was two-fold

- Firstly, policy-makers gained a deeper understanding of the scientific process, the practicalities of undertaking research and the potential of scientific knowledge.
- Secondly, practising scientists learnt about the role of science in policy-making, the policy-making process itself and how to interact effectively with politicians.

In 2011, STOA started a systematic cooperation with the Joint Research Centre (JRC) on newly launched projects to help STOA check the quality of the project deliverables and develop technical specifications for the new projects.

Apart from the activities in the context of the European Parliament, STOA has a wide range of networks on the global scene. STOA is an active member of the EPTA network (European Parliamentary Technology Assessment) and is in permanent dialogue with other technology assessment agencies. STOA actively participates in relevant international events.

STOA is enhancing its visibility. In 2011 the STOA website was fully renewed and information on studies, events etc. is now more readily accessible on [www.europarl.europa.eu/stoa](http://www.europarl.europa.eu/stoa). Further efforts to increase awareness about STOA reports and events within and outside the European Parliament will be undertaken in 2012.

## 1. PRESENTATION OF THE STOA PANEL

### 1.1 STOA mission

The STOA Panel is an official body of the European Parliament, supported in its work by a secretariat, the Unit for Scientific and Technical Options Assessment, which is part of the Directorate for Impact Assessment of the Parliament's Directorate General for EU Internal Policies. Its main mission is to provide - in a neutral and independent way - studies that assess the impact of introducing or promoting new technologies, and identify from a technological point of view the best possible options for action.

### 1.2 The STOA Panel

The STOA Panel is politically responsible for STOA's work. It is composed of 15 MEPs:

- the Vice-President of the European Parliament responsible for STOA;
- four members appointed by the Committee on Industry, Research and Energy of the European Parliament (ITRE);
- two members appointed by the Committee on Employment and Social Affairs of the European Parliament (EMPL);
- two members appointed by the Committee on the Environment, Public Health and Food Safety of the European Parliament (ENVI);
- two members appointed by the Committee on the Internal Market and Consumer Protection of the European Parliament (IMCO);
- two members appointed by the Committee on Transport and Tourism of the European Parliament (TRAN);
- two members appointed by the Committee on Agriculture and Rural Development of the European Parliament (AGRI).

The STOA Bureau runs the activities of STOA and prepares the Panel meetings. It is composed of four members, namely the EP Vice-President responsible for STOA, the STOA Chairman and the two Vice-Chairmen.

The STOA Secretariat executes the decisions of the STOA panel with the assistance of external experts (more details on the work with external contractors are available in the chapter 'Budget Implementation').

The members of the STOA Panel are appointed at the beginning of each parliamentary term for a renewable two-and-a-half-year period. A constituent meeting is held at the beginning and the middle of each parliamentary term, in which the Chair and two Vice-Chairs are elected by the Panel members.

QR code to the  
STOA Panel members  
webpage:



| EUROPEAN PARLIAMENT - STOA PANEL AND STOA BUREAU MEMBERS (end of 2011)              |                                                                                                                                                                                                     |                                                                                     |                                                                                                                                               |
|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
|    | <b>Paul RÜBIG MEP</b> (EPP, AT)<br>STOA Chairman<br>STOA Bureau member<br>Committee: ITRE (Industry, Research and Energy Committee of the European Parliament)                                      |    | <b>Giovanni LA VIA MEP</b> (EPP, IT)<br>Committee: AGRI (Agriculture and Rural Development Committee of the European Parliament)              |
|    | <b>Giles CHICHESTER MEP</b> (ECR, UK)<br>STOA Bureau member<br>EP Vice-President                                                                                                                    |    | <b>Ria OOMEN RUIJTEN MEP</b> (EPP, NL)<br>Committee: EMPL (Employment and Social Affairs Committee of the European Parliament)                |
|    | <b>António F. CORREIA DE CAMPOS MEP</b> (S&D, PT)<br>1st STOA Vice-Chairman<br>STOA Bureau member<br>Committee: IMCO (Internal Market and Consumer Protection Committee of the European Parliament) |    | <b>Vittorio PRODI MEP</b> (S&D, IT)<br>Committee: ENVI (Environment, Public Health and Food Safety Committee of the European Parliament)      |
|   | <b>Malcolm HARBOUR MEP</b> (ECR, UK)<br>2nd STOA Vice-Chairman<br>STOA Bureau member<br>Committee: IMCO (Internal Market and Consumer Protection Committee of the European Parliament)              |   | <b>Teresa RIERA MADURELL MEP</b> (S&D, ES)<br>Committee: ITRE (Industry, Research and Energy Committee of the European Parliament)            |
|  | <b>Antonio CANCEAN MEP</b> (EPP, IT)<br>Committee: TRAN (Transport and Tourism Committee of the European Parliament)                                                                                |  | <b>Csaba Sándor TABAJDI MEP</b> (S&D, HU)<br>Committee: AGRI (Agriculture and Rural Development Committee of the European Parliament)         |
|  | <b>Françoise CASTEX MEP</b> (S&D, FR)<br>Committee: EMPL (Employment and Social Affairs Committee of the European Parliament)                                                                       |  | <b>Salvatore TATARELLA MEP</b> (EPP, IT)<br>Committee: ENVI (Environment, Public Health and Food Safety Committee of the European Parliament) |
|  | <b>Kent JOHANSSON MEP</b> (ALDE, SE)<br>Committee: ITRE (Industry, Research and Energy Committee of the European Parliament)<br><i>from 09/2011 onwards</i>                                         |  | <b>Silvia Adriana ȚICĂU MEP</b> (S&D, RO)<br>Committee: TRAN (Transport and Tourism Committee of the European Parliament)                     |
|  | <b>Philippe LAMBERTS MEP</b> (Greens/EFA, BE)<br>Committee: ITRE (Industry, Research and Energy Committee of the European Parliament)                                                               |                                                                                     |                                                                                                                                               |

## 2. STOA ACTIVITIES IN 2011

In 2011, STOA's activities concentrated on the following 6 areas:



### 1. Towards a sustainable society

*(Tackling Societal Challenges)*

Sustainable management of natural resources; Climate change; Ageing society.



### 2. e-volution and ICT futures

e-Democracy; e-Voting; e-Participation;  
Ethical implications of emerging ICT's.



### 3. Moving European transport forward

Eco-efficient transport futures from Europe; Technology options for urban transport; Paving the way for a quieter Europe.



### 4. Developing modern energy solutions

Smart grids / Energy grids; CO<sub>2</sub>: a future chemical fuel.



### 5. Shaping our technological society

*(The impact of technological developments on society)*

'Making perfect life': Bio-engineering in the 21st century;  
Nanosafety; Risk governance of manufactured nanoparticles.



### 6. Progress in modern knowledge and related policy

Copyright in the EU; Technological impacts of knowledge transfer from Public Research Organisations; Technology across borders; Measuring scientific performance, and ad-hoc workshops.

## 2.1 Towards a Sustainable Society - Tackling societal challenges

### 2.1.1 Sustainable management of natural resources

#### 2.1.1.1 Study on sustainable management of natural resources

The sustainable management of Earth's natural resources is an issue high on the European agenda. Countries in Europe and across the world, whilst still in the midst of the worst financial crisis in decades, are beginning to sense the need to preserve natural resources in order to ensure the well-being of current and future generations.

A STOA study started in August 2011 is in progress under the supervision of MEP Csaba Tabajdi and is expected to deliver its options assessment report by January 2013.

#### Project context

Resource efficiency, is a key policy issue for the European Union<sup>1</sup> as one of the seven flagships of the Europe 2020 strategy, as well as globally<sup>2</sup>. The Commission launched a roadmap for resource efficiency (September 2011), targeting priority actions for 2020 and long-term targets for 2050. The policy initiative is supported by the development of a recent data centre by Eurostat. One of the key natural resources, water, has gained in importance and policy significance since the 2000 Water Framework Directive<sup>3</sup>, and the 2007 Communication on water scarcity and droughts<sup>4</sup>. Water resources are essential for all sectors of the economy (in particular, agriculture) and today face diverse challenges. These include water availability (quantity and quality), problems linked to quantity such as possible negative impacts when water is over-abundant (leading to flooding) or is too scarce (droughts, which lead to desertification), and the fact that access to water in certain parts of the world leads to conflicts.

To protect this important resource, the Commission will publish a 'Blueprint to Safeguard European Waters' in late 2012.

#### Focus on sustainable water management and on sustainable agriculture



The scope of this study covers the range of scientific research, technologies, and examples of best practice that may improve the sustainable management of resources in the areas of water and agriculture. It will include a comparison of different options, an assessment of their environmental impacts, barriers to their uptake and the nature of support needed for their implementation. The geographic scope of the study is the EU-27. The study will take into account the diversity of conditions in the EU, including different water management practices and

agricultural land uses associated with different soils and climate conditions, in different biogeographical areas.

<sup>1</sup> 'A resource-efficient Europe', [ec.europa.eu/resource-efficient-europe](http://ec.europa.eu/resource-efficient-europe)

<sup>2</sup> International Panel for Sustainable Resource Management, [www.uneptie.org/scp/rpanel](http://www.uneptie.org/scp/rpanel)

<sup>3</sup> Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework of the Community action in the field of water policy.

<sup>4</sup> Communication from the Commission on 'Addressing the challenge of water scarcity and droughts in the European Union' SEC (2007)93.

## **- Sustainable water management**

With regard to water management, which could be tackled from a variety of angles, the focus will be on the following areas:

- Technologies for efficient water management in agriculture (e.g. innovative irrigation techniques, wastewater reuse, etc);
- Innovative industrial technologies and practices to reduce or optimise water use;
- Innovative solutions for reducing water use in households; and
- Possible cross-sectoral water management practices that may benefit water supplies in a broader sense.

Technologies relating to water quality will be excluded from the study, as the related challenges would merit a self-standing in-depth analysis. However, technologies and best practices that are beneficial for water quantity, but in which water quality issues may arise (e.g. reuse of waste water) will be included within the scope of the study. For reasons of coherence, the study will focus on issues of water scarcity rather than floods, as water scarcity is currently more of a challenge in terms of resource use - more EU countries are expected to experience scarcity than floods in the face of climate change, although this will differ according to region.

## **- Sustainable agriculture**

Regarding the analysis of the relationship between agriculture and climate change, the focus will be on both technologies targeting reductions in CO<sub>2</sub> and non-CO<sub>2</sub> emissions, such as livestock-related production technologies and soil management to maintain carbon stocks.

Regarding the potential support under the Common Agricultural Policy (CAP), the study focuses mainly on the period 2007-2013, to understand the current support options under Pillar 1 and Pillar 2, which will also inform recommendations for the CAP in future. Complementary measures for sustainable agriculture under other policies (such as LIFE+, advisory services, market-based instruments, and state aids) will be briefly reviewed.



The study will not attempt to carry out a full analysis relating to biodiversity loss and biodiversity actions under the CAP. The reason for this is that the Commission (DG Agriculture) is currently undertaking a study on the subject. For the purposes of the present study, only a limited assessment will be made of the extent that technological options and innovative practices for water, climate change, and soils, deliver additional synergistic benefits or hindrances for biodiversity. Areas such as aquaculture will also be left out, as they entail different challenges in terms of resource use and impacts from those in agriculture.

## **Project Outlook for 2012**

A scoping paper, giving an overview of the issues investigated, will be followed by a detailed interim report towards the end of 2012. The preliminary final report will be presented during a workshop.

### 2.1.1.2 The STOA Annual Lecture 2011 on Sustainable Management of Natural Resources: a key event



*Koji Omi, Founder and Chairman, Science and Technology in Society forum (STS)*

The STOA Annual Lecture 2011 entitled 'Sustainable Management of Natural Resources' took place on 29 November 2011 on the premises of the European Parliament in Brussels. Csaba Tabajdi, MEP and STOA Panel member, was responsible for the lecture. Different parts were chaired by Paul Rübig MEP, Csaba Tabajdi MEP and Malcolm Harbour MEP.

Numerous eminent speakers were present such as Koji Omi, Founder and Chairman of the STS forum and Prof. Sir Harry Kroto, Florida State University, Nobel Prize for Chemistry 1996.

Further speakers were:

- 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 University;
- 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.

Paul Rübig MEP, summarised the outcome of the day saying: ***'Sustainable management of resources needs better education and vocational training'***.

The speakers addressed the challenges and possible responses in the various areas where resource scarcity and/or degradation is becoming evident and answered questions from the audience in a lively and informative debate.



*Paul Rübig and Csaba Tabajdi, MEPs*

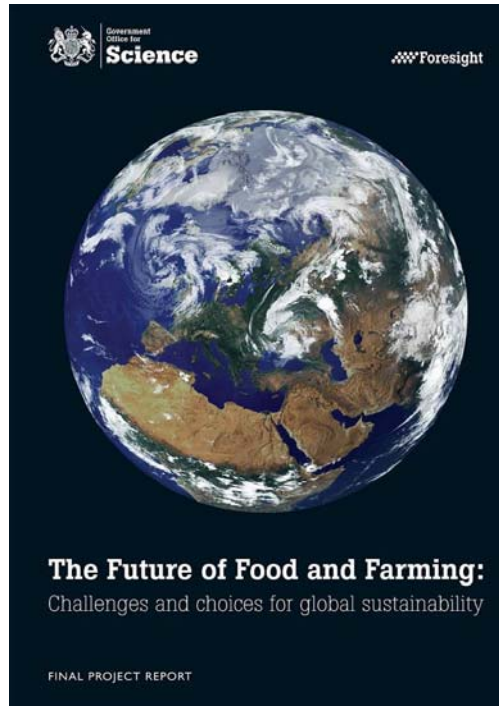


*António Correia de Campos MEP, Paul Rübig MEP, Steve Tolan and Csaba Tabajdi MEP*

The event closed with a ceremony to mark the award of the Sustainable Energy Prize by the Energy Globe Foundation. The final prize was awarded to the Chipembele Wildlife Education Trust, Zambia, for the 'Conservation Education in Schools Programme'. Mr. Steve Tolan received the award in a separate ceremony held on 19 January 2012 in Strasbourg.

### 2.1.1.3 Lecture by Sir John Beddington - 'The Future of Food and Farming'

On 29 March 2011, Sir John Beddington, Chief Scientific Adviser to HM Government and Head of the Government Office for Science (UK), gave a presentation to the STOA Panel. He presented the main findings of the report 'The Future of Food and Farming (2011)', issued by the Government Office for Science, London.



In his presentation he explained that major studies have shown that the global food system faces formidable challenges today that will increase markedly over the next 40 years. The conclusions of the report state that the way and speed the many different actors involved will respond to the challenges will affect the quality of life of everyone now living, as well as having major repercussions for future generations. However, it also states that much can be achieved immediately with current technologies and knowledge, given sufficient will and investment.

Sir John Beddington claimed that “No action/ change” is not an option: coping with future challenges will require more radical changes to the food system and investment in research to provide new solutions to novel problems.

He recommended the following actions for Europe:

- to reform the Common Agricultural Policy (CAP) and Common Fisheries Policy (CFP) and show global leadership on subsidy and trade reform;
- to increase the priority of food system research and development;
- to implement rational approaches to strategic competition in food supplies and markets;
- to ensure governance and oversight of the food system;
- to support the introduction of new technologies in food and farming.

### 2.1.2 *Climate change*

A study entitled 'Climate change - Systemic Approach to Adaptation to Climate Change and Renewable Energy Harnessing (Biomass and Mini-hydro)' was finalized in the final months of 2011 and presented to the STOA Panel.

The study was supervised by Vittorio Prodi MEP, STOA Panel member. The report will be published in April 2012.

#### **Context**

Climate change will have serious impacts on the entire European territory, which will require the implementation of adaptation measures at the local level. Securing adequate public funding to respond to the impacts of climate change has been complicated by a number of events including the financial crisis of 2008/09.

Looking at long-term solutions, the increasing scarcity of financial resources to address climate change may necessitate more creative solutions in terms of addressing both mitigation and adaptation.

This report illustrates the extent to which technologies such as 'pyrolysis' (the chemical decomposition of organic material at elevated temperatures without the participation of oxygen) and 'mini-hydro' (small hydro-electric plants) can address both environmental agendas and provide long-term solutions.

#### **Summary of the findings**

The potential of these two technologies to address both adaptation and mitigation may be limited to specific applications, and will need to consider the local implementation context.

The implementation of pyrolysis will be limited to the uptake of the biochar product, while the implementation of mini-hydro will need to consider its ability to manage water levels in given water basins.

For biochar, effectiveness of the technology may be a function of its combination with specific soil types. The project maintains that the ability of the pyrolysis process to create renewable energy while still generating a product that addresses adaptation represents a “win-win” scenario in terms of addressing both agenda items simultaneously in a cost effective manner.

The ability of mini-hydro to address both issues is less straightforward.



### 2.1.3 The grand challenge of ageing

As the STOA Panel is interested in options tackling societal challenges, it hosted a workshop on ageing entitled 'FUTURAGE Roadmap Launch Conference – Meeting the Grand Challenge of Ageing: the European Research Agenda'.

The conference took place on 18 October 2011 in the European Parliament in Brussels. This was the formal launch of the FUTURAGE Roadmap, which was showcased in front of 300 attendees during a programme that featured 16 speakers representing the key initiatives in European and Canadian ageing research.

The objective of the event was to launch the publication, for the first time, of the scientific research priorities and implementation activities recommended by the participants. The participants were the first to receive a copy of the roadmap document. This STOA-hosted workshop also contextualised the roadmap as one of the major strategic European initiatives addressing the grand challenge of ageing, and included presentations and a commentary from other European initiatives in ageing research.

The primary aim of the FUTURAGE project was to produce the definitive roadmap for the future of ageing research in Europe for the next 10-15 years.

Funded under the Seventh Research Framework Programme (FP7) over the last two years, FUTURAGE has undertaken eight stages of consultation with 700 active contributors and organisations representing many thousands more, to develop consensus on the ageing research agenda in Horizon 2020 – the Framework Programme for Research and Innovation.

The broad aims for the roadmap are to:

- develop a concerted approach to this highly important research area;
- promote a multi-disciplinary perspective on ageing research;
- ensure that both the research priorities and research outputs reflect the broader European goal of quality of life of citizens.



The seven major priorities for European ageing research identified in the roadmap ([www.futurage.group.shef.ac.uk](http://www.futurage.group.shef.ac.uk)) are:

1. Healthy ageing for more life in years;
2. Maintaining and regaining mental capacity;
3. Inclusion and participation in the community and in the labour market;
4. Guaranteeing the quality and sustainability of social protection systems;
5. Ageing well at home and in community environments;
6. Unequal ageing and age-related inequalities;
7. Bio-gerontology.

The event was targeted at European, Member State and regional ageing research stakeholders from the public, private and voluntary sector.

## 2.2 E-volution and ICT Futures

### 2.2.1 e-Democracy

This STOA study was carried out from January 2010 until September 2011, under the supervision of Silvana Koch-Mehrin MEP, who was EP Vice-President and a STOA Bureau member until May 2011.

#### Project definition

Questions being dealt with in this report were:

- e-public:  
How can the Internet contribute to the development and establishment of a genuinely European public?
- e-participation:  
What are good practices for e-participation in Europe and how can public organisations profit from opening up their processes to a wider audience?
- e-voting:  
Is e-voting a realistic means to increase electoral turnout and what are the conditions for the success of e-voting?

#### Project findings



The report includes the analysis and insights of a research and consultation project in which three scientific institutes, eleven external experts (participating in two workshops) and several MEPs were involved.

The aim of the project was to analyse current developments in the area of e-democracy and to relate the insights to the European policy context, especially to the needs of the European Parliament.

Within the three areas of e-democracy covered in the study, e-voting is the area in which the recommendation to the European Parliament is the most explicit: Based on the analysis, the build-up of a comprehensive system for e-voting in Europe cannot be recommended for the time being. The reasons for this are primarily cost-benefit considerations, technological issues and reasons of political legitimacy. Underlying the analysis was the conviction that elections are at the heart of the democratic process and that existing and working election routines in the various countries will not be changed without good reason.

Concerning e-public and e-participation, the report argues that a European public sphere includes and requires an active citizenry endowed with political rights, as well as with a sense of identity which motivates engagement and political concern. European citizenship cannot be based on a common language or traditions, but on a sense of belonging to a political community with shared values and rights.

E-participation as such, when connected with relevant policy-making processes on the level of the European institutions, would constitute a new element of European citizenship beyond the right to vote. It provides an additional democratic form of European citizenship which – if successfully established – could also help to foster European citizenship in its subjective or cultural sense. However, this would imply organising e-participation in a way that is accessible, transparent and meaningful to the European citizenry. It must be clear where there are opportunities for citizens to

raise their voice and at the same time it must be clear in which way and to what end e-participation spaces are related to the very core of policy-making.

From what is known from e-participation exercises at all levels, participants do not expect to rule out or bypass the representative democratic structures. On the other hand, it is also obvious that a lack of response from political institutions to formats of online participation, leads to disappointment on the participants' side that in the long-run is detrimental to any process of developing feelings of citizenship.

The project was completed as scheduled and presented to the STOA Panel at the end of 2011. A presentation of the results is scheduled for the AFCCO (Constitutional Affairs) Committee in June 2012

QR link to the final report on the STOA website



## Events

Two main workshops took place on this project. The outcomes of the events were integrated into the study.

- **e-Voting: Can e-voting increase electoral participation?**

This event was held on 17 March 2011 in the European Parliament in Brussels.

In view of the low participation rates at elections of the European Parliament, voting in the Internet (e-voting) is suggested as one way of involving more Europeans in the political process.



e-Voting is seen as an especially promising way to motivate younger voters to participate in the elections, because they are already familiar with using the Internet daily for many reasons. Voting could be done in-between watching YouTube videos and blogging on Facebook, so the argument goes.

However, voting is at the heart of the democratic process and elections not only have to fulfil special requirements like transparency, security and anonymity, but also have a special symbolic meaning. e-Voting is not the same as e-business. Some critics even dismiss the idea of e-voting altogether, for technical reasons and also in principle. In the workshop the pros and cons of e-voting were discussed.

- **e-Participation: Can political communication via the Internet and e-participation contribute to the emergence of a European public sphere?**

The workshop took place on 26 May 2011 in the European Parliament in Brussels. It was meant to reflect on the potentials and realistic prospects of Internet-based applications to contribute to the democratic practices of the evolving political system of the European Union and the formation of a European public sphere. There are examples of cases where positive effects of the Internet concerning the political process are visible, including e-consultations, e-petitions and other initiatives to encourage citizens' participation. However, it became clear that not all of the potentials of the new technology have been realised so far and that, apart from technical aspects, there are different legal, political and social issues which need to be addressed in the future.



### 2.2.2 Security of e-Government systems

A STOA study on the security of e-Government was started in December 2010 and is scheduled to be completed by June 2012. The supervisor is Silvia Adriana Țicău MEP and STOA Panel member.

#### Context

The security of electronic government is a core concern to citizens, governments and enterprises. As governments across the globe strive towards providing ICT-enabled public services to citizens and businesses, safeguarding data and systems is of pivotal importance since it can influence governments' and users' willingness to adopt the online services offered. The need to enhance security, privacy and trust in order to build up confidence in e-Government services is globally recognised and the European Commission's e-Government Action Plan require Member State commitment to the enhancement of security of e-Government solutions at a local, regional, national and European level.

#### Project definition

The objective of the project is to analyse the implications of the deployment of future 'e-Government systems' from the perspective of both security and personal data protection. More specifically the project:

- identifies existing implementations of national and international e-Government services in Europe which are relevant for the purpose of this study;
- analyses what are the relevant issues of security and personal data protection, and what the possible responses/solutions to these issues are;
- explores policy options for the implementation of 'future advanced' EU e-Government services.

Three case studies are being analysed:

- biometric passport;
- e-health;
- public procurement systems.

#### Results so far

The first phase resulted in an elaborate scoping description of the project identifying seven cross-cutting security challenges for e-Government systems set in the context of three case studies of cross-border e-Government systems: e-Procurement, border control and e-Health.

The security challenges include network security, interoperability, identification, usability, privacy, access control and function creep.

These cross-cutting security challenges will be examined in the context of the three case studies, each exemplifying different aspects of the security issue at hand.

These security challenges are evaluated by the consortium to be the most relevant issues to study for providing the best input to the STOA Panel in relation to future recommendations and policy options for establishing secure e-Government systems and services.

#### Further planning

The second phase of the study is ongoing and the final report is scheduled to be published by the end of 2012.



### 2.2.3 STOA attendance at the Internet Governance Forum

The STOA Panel was represented by Teresa Riera Madurell MEP at the Internet Governance Forum (IGF, [www.intgovforum.org](http://www.intgovforum.org)), which took place on 27-30 September 2011 in Nairobi.

The IGF's purpose is to support the United Nations' Secretary-General in carrying out the mandate from the World Summit on the Information Society (WSIS) with regard to convening a new forum for multi-stakeholder policy dialogue - the IGF.

The IGF serves to bring people together from various stakeholder groups as equals, in discussions on public policy issues relating to the Internet. While there is no negotiated outcome, the IGF informs and inspires those with policy-making power in both the public and private sectors. At their annual meeting delegates discuss, exchange information and share good practices with each other. The IGF facilitates a common understanding of how to maximise Internet opportunities and address risks and challenges that arise.

The IGF is also a space that gives developing countries the same opportunity as wealthier nations to engage in the debate on Internet governance and to facilitate their participation in existing institutions and arrangements. Ultimately, the involvement of all stakeholders from developed as well as developing countries, is necessary for the future development of the Internet.

Issues discussed in the 2011 IGF Forum were cyber security, green computing, multilinguism, cloud computing and Internet resilience.

Due to the relevance of this forum for the STOA activities in the domain of 'E-volution and ICT Futures', the Panel plans future STOA participation in IGF events.

### 2.2.4 Ethical implications of emerging ICTs - To what extent can we address them?

STOA hosted the final conference of ETICA (Ethical Issues of Emerging ICT Applications, [www.intgovforum.org](http://www.intgovforum.org)), a project funded within the EU FP7. This event took place in the European Parliament in Brussels on 31 March 2011.

This project provided the basis for a new enlightened approach to the development, governance and use of emerging Information and Communication Technologies (ICT). ICT has an immediate and broad impact on the lives of most individuals. Ethical scrutiny, however, is not well established. Existing ethics review mechanisms are not suited for many of the ethical issues that ICT is likely to raise in the future.

The idea behind STOA's hosting of the final project conference was to disseminate project outcomes and set up a panel/round table discussion for each of the identified three stakeholder groups. In addition, by giving the floor to users and stakeholders, the event provided a 'sounding board' for ETICA.

It allowed the consortium to review recommendations and conclusions prior to the end of the project in May 2011.

Thursday 31st March 2011/09:00-13:00 / European Parliament

**Ethical Implications of Emerging ICTs:**  
To what extent can we address them?

Event Chair:  
**Dr Malcolm Harbour**  
MEP, Vice-President for STOA

Are you involved in ICT:  
Research  
Policy  
Evaluation  
Industry Development  
Then this Event is for you.

ETICA For more Information and Registration please visit: [www.etica-project.eu](http://www.etica-project.eu)

ETICA formulated recommendations for both policy-makers and for industry, researchers and civil society organizations.

Detailed recommendations to policy-makers are formulated on how and why to:

- provide a regulatory framework which will support Ethical Impact Assessment for ICTs;
- establish an ICT Ethics Observatory;
- establish a forum for stakeholder involvement.

The recommendations for industry, researchers and civil society organisations are on how and why to:

- incorporate ethics into ICT research and development;
- facilitate ethical reflexivity in ICT projects and practice.

Implementing these recommendations of the ETICA project should contribute to better and more ethically sensitive processes of technology development. By incorporating the views of all stakeholders the benefits of novel technologies will be maximised and ethical risks can be addressed early.

### **2.2.5 Cloud computing study scheduled for 2012**

#### **Potential and impacts of Cloud Computing services and Social Network Websites**

This study will incorporate and assess the key findings and conclusions of the relevant research conducted in the field of Cloud Computing services and Social Network Websites.

Based on the results of this research, policy options will be developed that are relevant for the actions of European decision-makers.

This project was launched in April 2012.



## 2.3 Moving European Transport Forward

### 2.3.1 *Technology options for urban transport*

This STOA study was completed between August 2010 and February 2012 and was supervised by Malcolm Harbour MEP, STOA Vice-Chairman, and Silvia-Adriana Țicău MEP, STOA Panel member.

#### **Project context**

An efficient transport system is central to economic growth and the social wealth of modern societies. At the same time, however, it is well-known that growth in the transport sector is often accompanied by negative consequences. An increase in urban traffic for instance, can have a detrimental effect on the quality of life and health of citizens, as well as the environment. Furthermore, the efficiency of the system is also reduced by issues such as congestion. The driving forces behind the challenges mentioned above are not only due to the growing volume of traffic in general, but especially to the rapid increase in motorised traffic. Since 80% of European citizens live in urban environments, urban transport accounts for a significant percentage of total mobility.

#### **Project definition**

This long-term project examined from an innovation perspective, the technologies capable of responding to the complexity and interdependence of the different types of urban travel systems. It sought to provide:

- an inventory of both existing and future technology options in urban transport;
- an overview of the scientific knowledge about the potential impacts of urban transport systems on health and the environment;
- an analysis of the socio-economic context in which new technologies and innovations are being or will be implemented;
- an analysis of user motivations and behaviours that are relevant for the successful implementation of technological and organisational innovations in urban transport.



#### **Project outcomes**

The project was completed in early 2012.

The different technology alternatives to the current urban transport mechanisms were analysed in detail on the basis that the vast majority of city commutes are less than 3 km. The alternative technologies examined varied from electric powered vehicles, hydrogen cells and other alternative propulsion fuels, as well as natural transport methods such as cycling and walking.

The study also analysed the critical success factors necessary for citizens to adopt these technologies and use public transport systems, in other words, the socio-economic factors influencing citizens to change their behaviours.

The report concludes on the potential impact of policy options to encourage the development of more sustainable transport systems and their adoption by citizens.

### 2.3.2 *Eco-efficient transport futures from Europe*

This STOA study has a duration from December 2010 until December 2012 and is supervised by Malcolm Harbour MEP, STOA Vice-Chairman and Silvia-Adriana Țicău MEP, STOA Panel member.

#### **Project definition**

This long-term project is focused on the implications of the new eco-efficient transport concept and its impact on society and transport demand. More specifically, the project focuses on the following areas:

- exploration of alternative fuels and propulsion systems;
- possible use of emerging ICT technologies in support of eco-efficient mobility;
- need for new infrastructural approaches;
- need for innovative business models such as car sharing;
- specific issues related to maritime transport.

Certain possible future scenarios are developed with key experts and stakeholders. These scenarios are then being discussed with citizens to assess the likely impact on their behaviour. The project will provide an updated synthesis of all the work done by STOA in similar areas in the past.

#### **Preliminary results**

At the current stage, an extensive literature review has been carried out with the objective of clearly positioning the concept of 'eco-efficient transport' and assessing the current state of academic research.

For this reason, the study purpose overlaps with the Sustainable Urban Transport project (section 2.3.1), as well as the other STOA studies carried out in the area of long-distance transport. Two reports have been produced, the first covering the 'potential of technologies and concepts supporting eco-efficient transport', and the second covering the specific issues related to 'maritime shipping'.



#### **Project outlook in 2012**

The next phase of the project will develop "scenarios for eco-efficient transport", with the active contribution of academic and industry experts. It will also consider the possible adoption of these scenarios by the general public and conclusions will be derived about possible policy options.

After the scoping report and the reports entitled 'Assessing potentials of eco-efficient technologies and concepts' and 'Overview of potentials for an increased eco-efficiency in maritime shipping' which were delivered in 2011, the following deliverables will be received in 2012:

- June 2012: Designing scenarios on eco-efficient transport futures
- December 2012: Discussion of scenarios with citizens

The final report is scheduled to be delivered in February 2013.

### 2.3.3 Transport-related STOA workshops

Besides carrying out the transport related projects, STOA also hosted two transport-related workshops:

- 'Portfolio of European Green Cars Projects'
- 'Paving the Way for a Quieter Europe'

#### 2.3.3.1 Workshop 'Portfolio of European Green Cars Projects'

On 31 May 2011 STOA organised the workshop 'Portfolio of European Green Cars Projects', in cooperation with the European Commission, transport and car-connected European Technology Platforms and related coordination actions. The event was chaired by STOA Chairman Paul Rübig MEP.

This workshop emphasised the relevance of energy efficient and electric vehicles for the ability of European industry to compete internationally. Industry representatives introduced the spectrum of supported projects that cover, besides electric mobility, efficiency gains of conventional drive trains and optimisation of traffic and logistics.



Along with this workshop, an exhibition by European vehicle manufacturers and suppliers that play a key role in the European Green Cars Initiative showcased vehicles and components, including novel components and systems for energy efficient and electrified drive vehicles. This exhibition took place in the Esplanade of the European Parliament and was hosted by Malcolm Harbour MEP, STOA Vice-Chairman, and Bernd Lange MEP. The Vice-President of the European Commission, Ms Neelie Kroes, also attended the exhibition.

#### 2.3.3.2 Workshop 'Paving the Way for a Quieter Europe'



STOA also hosted a workshop on the road transport sector being at the forefront for a quieter Europe. This event was co-organised with the European Union Road Federation (ERF), a non-profit association which coordinates the views of Europe's road sector and acts as a platform for dialogue and research on mobility issues. The event took place on 23 November 2011 in Brussels, and gathered around 100 interested stakeholders from all over Europe.

STOA Panel member Salvatore Tatarella MEP, hosted the session and expressed his concerns about the noise pollution stemming from road transport that disturbs millions of European citizens.

The event was a unique opportunity for EU policy-makers, industry representatives, NGOs and experts in the field to share opinions and ideas about fostering a systemic approach to reducing traffic noise and ensuring a quieter and healthier environment for European citizens.

### 2.3.4 *Solar Impulse, a STOA breakfast to discover the zero fuel airplane* 26 May 2011

The Solar Impulse project ([www.solarimpulse.com](http://www.solarimpulse.com)) was launched by Dr Bertrand Piccard and Ir André Borschberg.

The project's aim was to travel around the world with a solar airplane in five steps during 2014. The project's objectives were to promote renewable energies, show what is possible using today's technologies and contribute to changing people's attitudes towards energy savings.



The project enjoyed considerable publicity in summer 2010 when the solar airplane completed a day-and-night 26-hour flight.

This was the first time a solar airplane was able to fly right the way through the night. The technical challenges were overcome by a team of 80 companies and organisations, and a team of 100 engineers working together over the last 7 years.



*Bertrand Piccard and André Borschberg (Solar Impulse) with Paul Rübig MEP (STOA Chair) and Theo Karapiperis (STOA Secretariat)*

The year 2011 marked the first time Solar Impulse flew outside of its home country, Switzerland. Specifically, it flew to Brussels and landed at Zaventem National Airport. The Solar Impulse project leaders met with STOA over a breakfast at the European Parliament.

## 2.4 Developing Modern Energy Solutions

### 2.4.1 Smart grids / Energy grids

This STOA study started in November 2010 and ran until May 2012 under the supervision of Malcolm Harbour MEP, STOA Vice-Chairman.

#### Project definition

Assessing the techno-scientific developments of smart grids and analysing the political, societal and economic implications related to the deployment of smart grids in the EU electricity sector were the key objectives of this STOA project.

The project provides:

- an overview of the existing EU research initiatives on smart grids technology and an identification of the possible policy issues related to their deployment;
- an analysis of the potential role of smart grids in enhancing the share of renewable energy sources in the European energy generation mix;
- an analysis of the economic and regulatory implications on smart grids deployment in relation to the liberalisation in the European electricity sector.

#### Results so far

The project is being executed in two phases:

##### Phase 1: Conception phase: setting up the project

During the first phase, the project plan conducted a preparatory study exploring and outlining the relevant policy and political issues related to the deployment of smart grids. This led to a brief start-up document.

The preparatory study was presented by the contractor and discussed with the Panel on 17 February 2011.

This document provides, among other things, an overview of:

- the state of the art of the science and technology of smart grids and an insight into future developments;
- existing research initiatives within the European framework (i.e. European Technology Platform on smart grids, European Electricity Grid Initiative, Framework Programme projects);
- relevant challenges and needs of EU regulatory provisions for the deployment of smart grids.



##### Phase 2: Project elaboration and final reporting

In the second and final phase, the project will address various issues regarding the deployment of smart grids / energy grids from a political, economic and societal perspective, providing, where available, possible policy options.

#### Project outlook for 2012

The final report was presented and discussed during a STOA workshop, involving MEPs, stakeholders and consumer organisations, on 12 April 2012.

### 2.4.2. Workshop 'CO<sub>2</sub>: a future chemical fuel'

This STOA workshop was held on 22 March 2011, and was chaired by António Correia de Campos, MEP and STOA Panel Vice-Chairman, and Giovanni La Via, MEP and STOA Panel member. It was organised by STOA in cooperation with the European Materials Research Society (E-MRS), to highlight an extraordinary breakthrough technology aimed at recycling and transforming harmful carbon dioxide (CO<sub>2</sub>) into fuels.

In the long run, the reduction of the European dependence on imported oil and the enhancement of the European competitiveness could also be envisaged as promising perspectives for a large-scale, fuel production process, using CO<sub>2</sub> as raw material.

A round table, moderated by Dr. Rolf Linkohr (former MEP) gave MEPs and other participants the opportunity to engage in an open discussion with science and technology experts, economists and a representative of the industry dealing with the future technological and economic perspective of this promising technology.



### 2.4.3 Outlook for 2012: Towards a future transport fuel

One of the STOA activities scheduled for 2012 is the launch of a new transport-related project: 'Methanol (CH<sub>3</sub>OH): A future transport fuel based on Hydrogen and Carbon Dioxide?'

The study will be focused on two main areas of investigation:

- the state of the art of methanol production: current methods and alternative routes - advantages and disadvantages;
- the implications of methanol use for transport purposes: technological alternatives and solutions, economic viability, safety, compatibility with existing engines.

## 2.5 Shaping our Technological Society

### *The impact of technological developments on health and safety; risk governance*

#### 2.5.1 Making perfect life - Bio-engineering in the 21st century

This STOA project had a duration from August 2009 until October 2011 and was supervised by Malcolm HARBOUR, MEP and STOA Vice-Chairman, and Vittorio Prodi, MEP and STOA Panel member.

##### Context

Scientific and technological progress in the 21<sup>st</sup> century will strongly depend on the mutual interplay between four key technological fields: nanotechnology, bio-sciences, information technology and cognitive sciences (NBIC). This combination of engineering fields promises a 'new technology wave' challenging traditional boundaries between the biological and the physical sciences.

##### Project definition

This long-term project assesses the possible impact of a new set of engineering capabilities and ambitions that have developed since the beginning of this century.

The STOA study 'Making Perfect Life. Bio-engineering (in) the 21<sup>st</sup> century', explores the growing interplay between biology and technology in four different fields of bio-engineering:

- the engineering of the human body;
- the engineering of the brain;
- the engineering of living artefacts;
- the engineering of intelligent artefacts.

Quick Reponse Code  
to the interim report:



##### Project findings and status

Two major trends demonstrate the growing interplay between biology and technology in these different fields.



- 'Biology becoming technology' implies a growing power to intervene in living systems, including the body and the brain.
- 'Technology becoming biology' involves an increasing capability to create a variety of artefacts with life-like and intelligent qualities.

These two trends are radically broadening the existing bio-debate in today's European societies.

Developments in the above four fields of bio-engineering will increasingly challenge the fundamental dichotomies between nature and technology and between mind and machine. These developments also raise a variety of technical, socio-economic, legal and ethical issues which may challenge current regulatory practices. Participants at a conference in the European Parliament in November 2010 emphasised the need for anticipation of these challenges in European policy-making in order to safeguard human dignity in the 21<sup>st</sup> century.

To inform and stimulate further political debate in the European Parliament, the STOA Making Perfect Life team has prepared a report on the most urgent policy and regulatory issues, divided into four specific contexts (the final report will be published in 2012).

The outcomes of this project were presented in a workshop on 11 October 2011 in Brussels.

## Workshop 'Making perfect life - Bio-engineering in the 21st century'

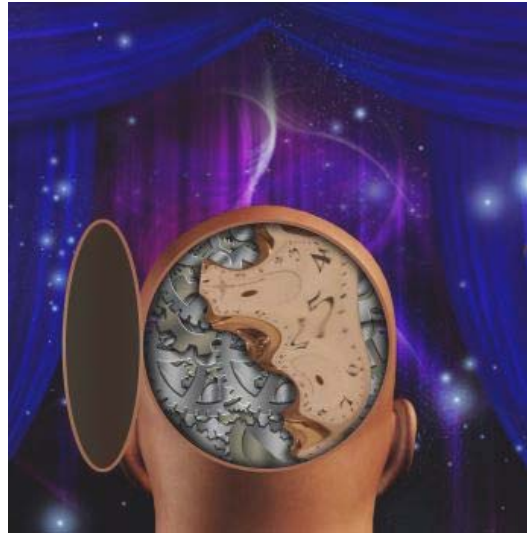
In the frame of the 'European Innovation Summit 2011', a workshop took place on 11 October 2011 to present the study's findings, chaired by Malcolm Harbour, MEP and STOA Vice-Chairman, and Vittorio Prodi, MEP and STOA Panel member.

Bio-engineering in the 21<sup>st</sup> century raises a multitude of technical, socio-economic, legal and ethical issues. In this workshop the results of the STOA project 'Making Perfect Life' were presented, focussing on policy and regulatory challenges in four different fields of bio-engineering.

In the STOA workshop, European policy-makers met with scientific experts, regulators, stakeholders and other relevant communities, to discuss the European governance challenges in 21<sup>st</sup> century bioengineering.

The key issues dealt with during this workshop were:

- How to protect our privacy when DNA sequencing sets no limits on the availability of genetic information?
- Can we make synthetic biology a building block to a sustainable future by standardising life?
- Is the European medical device regulation sufficient to secure the safety of newly developed devices that modulate brain activity?
- What about our mental privacy when information technology becomes a tool to monitor our state of mind?



### 2.5.2 Nanosafety

The Nanosafety STOA project ran from January 2010 until October 2011 under the supervision of Vittorio Prodi MEP and Philippe Lamberts MEP, both STOA Panel members.

#### Project definition:

The project analysed the potential environmental, health and safety (EHS) risks that are posed by engineered nanomaterials (ENM). More specifically, the project looked at the ENM risk management and the need to take precautionary regulatory measures given the great uncertainties regarding actual ENM health and environmental effects

The project focuses on two important aspects of regulation:

- Risk management strategies for ENM as discussed or proposed for the EU or its Member States;
- The need to communicate the EHS risks of ENM to the public and the possible problems related to this process.

#### Project Status end of 2011

- In July 2011 a Risk Communication Strategies report was delivered.
- A joint workshop with the European Commission was held in November 2011.
- The final study will be published in 2012.



### 2.5.3 *'Chemistry for a better life' - A workshop on the crucial contribution of chemistry towards achieving a better quality of life and welfare for humankind.*

On 9 November 2011, STOA organised a workshop in cooperation with the European Association for Chemical and Molecular Sciences (EuCheMS) and the European Chemical Industry Council (Cefic). The workshop was chaired by Teresa Riera Madurell, MEP and STOA Panel member.

A keynote speech was given by Prof. Avelino Corma, Instituto de Tecnología Química, Valencia, followed by three panel sessions. Panel members, other MEPs and participants were engaged in an open discussion on the role and expectations of Chemistry in the Common Strategic Framework for EU Research and Innovation ('Horizon 2020').

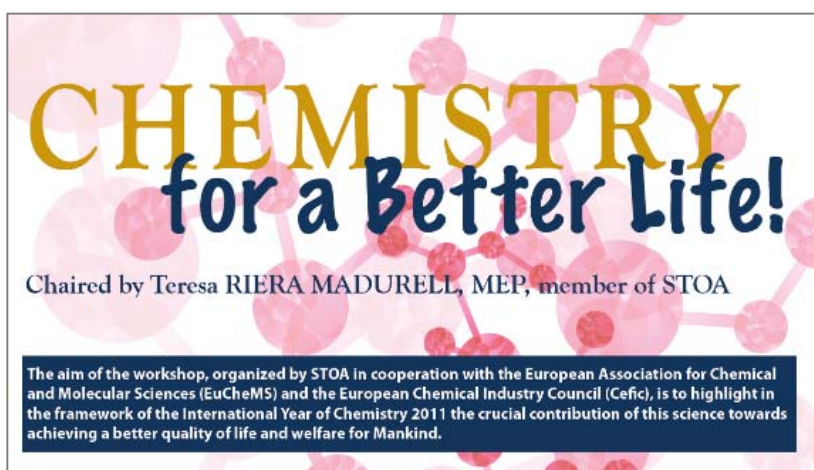


*Miklós Györffi (STOA Secretariat), Teresa Riera Madurell MEP (STOA Panel member), Prof. Avelino Corma (Instituto de Tecnología Química, Valencia), Prof. Ulrich Schubert (EuCheMS)*

The aim of the workshop was to highlight, in the framework of the International Year of Chemistry 2011, the crucial contribution of this branch of science towards achieving a better quality of life and welfare for humankind.

Chemistry strives to find solutions to Europe's pressing problems, such as resource efficiency, alternative energy portfolios, consequences of climate change, improving our health and ensuring food supply for a growing population. Chemistry is central to progress in many scientific and technological fields.

Working with a wide range of experts, EuCheMS has published a roadmap where key areas are identified in which advances in chemistry are needed to tackle some of the 'Grand Challenges' underlined by the Lund Declaration of 2009. Chemistry, both as an industry and a science, will play a pivotal role in ensuring that the European Union is able to realise its vision of an 'Innovation Union'. A strong partnership between academia, research and industry will ensure that research is transferred to economic solutions that contribute to the welfare of society.



### 2.5.4 Workshop on the precautionary principle and risk governance



A workshop entitled 'The Changing Face of Risk Governance: Moving from Precaution to Smarter Regulations' was held on 29 September 2011 in the European Parliament in Strasbourg.

The workshop was chaired by Paul Rübig, MEP and STOA Chairman, and the concluding remarks were formulated by Malcolm Harbour, MEP and STOA Vice-Chairman.

Risk governance has changed remarkably over the last 100 years or so, and continues to evolve from a purely reactive process based on demonstrated, significant levels of harm, to processes which attempt to counter future harm by making risk governance more precautionary in nature.

However, the current EU regulation tendency is to move from precaution towards better or smarter regulation as part of the regulatory impact assessment programme. The reform of comitology (new Article 291 TFEU<sup>5</sup>) and the inter-institutional agreement, have changed the dynamic and the regulatory interplay between the EU institutions.

This workshop included contributions from:

- Jo Leinen MEP, Chairman of the ENVI committee of the European Parliament: 'Risk Governance and Precautionary Principle: Recent Cases in the ENVI committee';
- Sajjad Karim MEP: 'Risk Governance and Legal Certainty';
- Dirk Hudig, Chairman European Risk Forum: 'The Problem of Low and Uncertain Risks: Balancing Risks and Benefits';

as well as from the European Commission and other external experts on risk governance.

One of the outflows of this workshop was an article by Michael D. Rogers (President of ICAAS, the International Council on Amino Acid Science) and Miro Smriga (CEO of ICAAS), entitled 'Improving Regulatory Decisions through Targeted Research'. This paper is foreseen to be published in a special edition of the EJRR (The European Journal of Risk Regulation), dedicated to this workshop.

Based upon a case study regarding amino acids, this paper argues that the EU regulatory practice in the food area may be unnecessarily applying the Precautionary Principle by focussing on upper intake limits for naturally occurring nutrients, while not controlling the quality of the ingredients used in commercial products even though precedents of public health issues arising from adulterated ingredients do exist. Risk governance depends heavily on expert evidence and the case of amino acid supplements is used to document an industry-supported effort to strengthen the science database and thus enhance the regulatory process.

### 2.5.5 Brain Awareness Week

On 15 March 2011 STOA organised, in the context of the Brain Awareness Week (14-20 March 2011), an event in cooperation with the European Dana Alliance for the Brain (EDAB) and the Belgian Brain Council.

<sup>5</sup> Treaty on the Functioning of the European Union, *Official Journal* C 83 of 30.3.2010

The event consisted of two sessions:

### **Session I: 'Education - a lifelong challenge for the brain'**

A lecture on 'Education - a lifelong challenge for the brain' was given by Colin Blakemore, Professor of Neuroscience at Oxford University, former chief executive of the British Medical Research Council.



This part of the event was chaired by STOA Chairman Paul Rübig MEP, and was attended by MEPs, EP staff and outside guests, including some 100 secondary school pupils (15-18 years old).

As Professor Blakemore explained, education exploits the brain's capacity to learn, in order to deliver useful knowledge and improve strategies for thinking and decision-making. As knowledge about the biological basis of brain plasticity advances, neuroscience could provide the underpinning for an entirely new approach to education, optimally matching the teaching, training and learning of babies, children and adults to the properties of the human brain.

A fuller understanding of adult brain plasticity will surely help with the optimal design of adult education, as well as the prevention and treatment of cognitive decline in old age or in disease, according to the speaker. However, Professor Blakemore is aware of the ethical issues that these developments. He also raised the question whether and how we should use such artificial short-cuts to education, if it is possible to improve learning capacity through cognition enhancing drugs, electrical or magnetic stimulation or even through microelectronic implants.

### **Session II: 'Ethical dilemmas in brain research - from stem cells to animals and human beings'**

The second part of the event was entitled 'Ethical dilemmas in brain research - from stem cells to animals and human beings'.

STOA Vice-Chairman António Correia de Campos MEP, chaired the workshop, in which a forum of some 30 people discussed with MEPs ad hoc topics presented by five European scientists invited by STOA. Issues discussed included the cost-benefit analysis underpinning the utilitarian approach to



bioethics; challenges of the demographic changes and the inequalities in Europe; mental illness, stigma and the media; public information and communication issues; and the philosophical dilemmas concerning research into the human brain.

*Prof. Colin Blakemore (University of Oxford)  
and António Correia de Campos MEP (STOA Vice-Chairman)*

### 2.5.6 STOA Meeting with John Bresland, U.S. Chemical Safety Board

The STOA Chairman Paul Rübzig and first Vice-Chairman António Correia de Campos met with John Bresland, a member of the US Chemical Safety and Hazard Investigation Board (CSB), on 26 January 2011.



STOA organised this meeting in cooperation with the EP Liaison Office with the US Congress in Washington.

The CSB is a federal agency of the US government with offices in Washington DC, and Denver, Colorado. The board has 5 members who are appointed by the U.S. President and confirmed by the U.S. Senate. The CSB has a staff of 45 people.

The main discussion topic was the BP Deepwater Horizon accident of 20 April 2010 and the resulting environmental disaster in the Gulf of Mexico.

John Bresland summarised the main recommendations of the Presidential Panel on the Gulf oil spill as follows:

- Use the North Sea 'Safety Case' approach to regulation;
- Form a new independent off-shore drilling agency;
- Industry-run safety organisation, modelled after the Institute of Nuclear Power Operations;
- Improved oil spill response;
- Increased liability cap for off-shore facilities.

CSB is conducting its own investigation focusing on:

- Interviewing personnel from all of the companies involved;
- Participating in the examination of the Blowout Preventer;
- The question if the major operators (BP, TransOcean etc.) have rigorous safety systems in place;
- A public forum held in December 2010 to discuss regulatory approaches.

The ensuing discussion concentrated on uncertainties in the assessment of the damage caused, the reasons behind accidents, especially the human factor, the qualities of good (and bad) safety management and the prospect of forming a European CSB-like agency.

## 2.6 Progress in Modern Knowledge and Related Policy

### 2.6.1 Copyright in the EU – What's next?

This STOA project ran from July 2010 until November 2010 under the supervision of Paul Rübig MEP, Chairman of the STOA Panel. The final report was published in March 2011.

#### Context and subject

The project on 'Copyright in the (Digital) Single Market' aimed to contribute to the ongoing discussion of important Intellectual Property Rights (IPR) related topics from a political perspective. It addressed and analysed some of the current challenges in the field of copyright. It tackled issues of a more general nature such as harmonisation and enforcement issues across the Member States and in particular the challenges that arise in the area of the 'digital economy'.



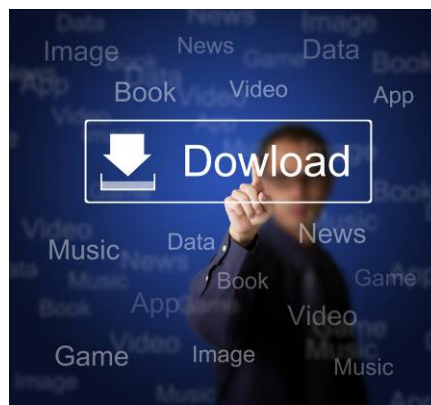
This project was carried out as a workshop, in the context of the 2<sup>nd</sup> European Innovation Summit, on 12 of October 2010. This workshop was entitled 'Copyright in the Single Market, Opportunities for Harmonisation and Management of Rights'. It was organised by STOA together with the Technopolis Consulting Group and supported by Knowledge4Innovation/The Lisbon Forum and TNO. The workshop primarily addressed the topic of opportunities for further harmonising EU copyright law. The second part focused on issues related to the management of rights, i.e. the means by which copyright and related rights are administered (licensed, assigned and remunerated), and whether current practices with

a particular view on transparency and governance of copyright management hinder the development of the Internal Market.

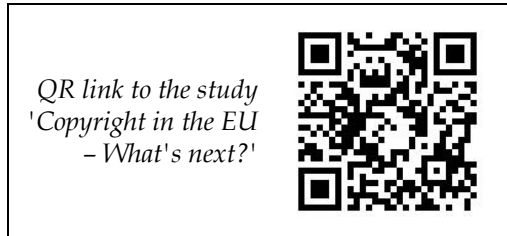
#### Project conclusions

The following are the main conclusions that can be drawn. They also constitute the main policy areas for action:

- **Fighting piracy:**  
The problem of copyright infringement (i.e. piracy) has to be addressed more thoroughly. The European Parliament could be especially instrumental in this context for educating consumers.
- **Simpler copyright management system:**  
The current collective rights management system (and the copyright levy system) should be simplified, either by updating the existing system or by creating alternatives.
- **Payment based on actual use:**  
Despite challenges for measurement, attempts should be made to have levy tariffs calculated on the basis of actual use of a medium/device.
- **Alignment of stakeholder interests and involvement of stakeholder groups as a requirement for the advance towards a single 'European Copyright System':**  
Possibilities to re-ignite the stakeholder negotiations should be explored, as well as opportunities to have a higher involvement of artists and consumers. The European Parliament could be instrumental in facilitating the respective dialogues.



- Considerations regarding a future unified European Copyright System: In the long run, a unified European Copyright System could tackle the issue of territoriality in a fundamental manner. The output of the Wittem project, a prototype European copyright code, could prove a good starting point for respective considerations.



### **2.6.2 Technological impacts of knowledge transfer from Public Research Organisations**

The project's duration was from January 2010 to April 2012. The study is supervised by STOA Panel member Salvatore Tatarella MEP.

#### **Project definition**

The project analyses the real impacts of current knowledge transfer practices from Public Research Organisations (PROs) to industry, its strengths and weaknesses, and its technological and regional breakdown. It examines, in particular, the role of Technology Transfer Offices (TTOs) in knowledge transfer exchange between PROs and the wider society, especially industry.

It attempts to assess what is the actual level of matching between what the scientists are doing and what society needs or can use, taking into account:

- the current capacity of the industry to absorb research knowledge from the public sector;
- the identification of common research areas between the industry and the public sector;
- the effects induced by market dynamics;
- other unidentified constraints at this stage.

Based on those findings, the project identifies what could be the key elements of future EU policies.

#### **Project status end of 2011**

In the first phase, the project defined the need to find alternative sources of information that help to explore the following research questions:

- How can policy be refined, so as to make better use of the opportunities inherent in TTO activity without at the same time bearing as many of the costs as appear to be borne today?
- How can PROs best develop Intellectual Property (IP) strategies and policies that promote collaboration with industry?
- How can we identify situations where TTO activity is inherently likely to be profitable and add value to academic-industrial cooperation, as opposed simply to redistributing income within that relationship?
- What governance processes and operating routines can be devolved in order to balance TTOs' and PROs' divergent interest in industrial cooperation in the direction of the PROs?
- How and where can TTO activity tackle systemic failures and encourage knowledge transfer?

## Preliminary results

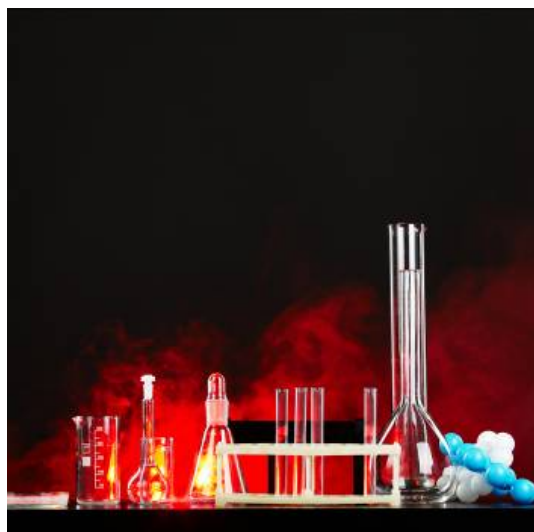
The taxpayer funds Public Research Organisations (PROs – universities and research institutes) as an investment in the production of knowledge on behalf of society. This study focuses on how to maximise the return on that investment through knowledge transfers between PROs and other parts of society, notably but not exclusively industry.

Now in its final stage, the study resulted in some policy recommendations that were discussed at a workshop held on 29 February 2012 at the European Parliament in Brussels.

Economic theory and innovation studies place PROs within an inter-connected innovation system. Businesses are the key drivers of innovation making use of innovation inputs from a wider range of internal and external sources.

The role of PROs in this network is to create knowledge and make it available to those best placed to make use of it for economic and social benefit.

This involves a two-way flow. The PROs are far from being the only producers of new knowledge in society, so they need to take in relevant knowledge as well as to disseminate both the knowledge they have produced themselves, and that which they have acquired from others. They also need to be receptive to societal signals about what problems and opportunities exist that could be tackled using new or existing knowledge.



Therefore the role of Knowledge Transfer Organisations (KTOs) is to facilitate and support the transfer and exchange of knowledge between PRO researchers and other economic actors, particularly businesses both large and small.

PROs should not seek to maximise income generation for themselves but should make use of a range of knowledge transfer mechanisms to ensure knowledge is made available to those who can make use of it. PROs should not focus solely on the commercialisation of their IP as this simply redistributes the benefit within the economy rather than creating wealth.

The outputs of their research are to be communicated to the wider marketplace and both codified and tacit knowledge and skills are to be proactively transferred to businesses (and other potential users).

## Project Outlook for 2012

A workshop was held on 29 February 2012 in the European Parliament in Brussels and the final report was delivered in April 2012.

### 2.6.3 *Technology across borders*

This STOA project ran from January 2010 until October 2011 under the supervision of Csaba Tabajdi MEP, STOA Panel member.

#### **Project Context**

Technological advancement plays an important role in the development of European economies: it contributes to increased industrial competitiveness, environmental sustainability, better health care, improved labour conditions, higher welfare, and solutions for many other societal issues. Based on the idea that technological development requires specific policies, technology assessment started in the late 1960s as a tool to inform members of parliaments about possible negative effects of new technologies. Since then, it has evolved into an instrument that supports parliamentary decision-making and strategy development on innovation.

Recently, the increased involvement of civil society organisations in research policy processes has induced new forms of governance that have impacted on technology assessment.

Parliamentary Technology Assessment (PTA) in Europe was initiated and developed first in Northern and Western parts of Europe and later also in Southern Europe. In general PTA activities of today follow proactive approaches that feed into demand-driven policy-making processes on Science, Technology and Innovation (STI). Given the urgency of a number of societal challenges (climate change, energy, health, ageing, degenerating cities, etc) and economic challenges (maintaining and strengthening Europe's competitive position), STI policy-making in parliaments should be informed with intelligence that is geared to providing solutions to these challenges. PTA may provide important contributions to this.

#### **Project definition**

The main objective of this project was to analyse current Parliamentary practices in EU member states related to technology option assessment, and then to define what the elements of an integrated process of Technology Option Assessment (TOA) at the European level could be.

The assessment of current practices focused on the following aspects:

- Institutional approaches
- Theories and methodologies followed
- Impacts on policy and decision-making processes.

The definition of the elements of a future integrated process of EU TOA will focus on the following aspects:

- Identification of the main beneficiaries and their needs
- Possible benefits of a shared common European vision
- Positioning the concept of European TOA projects compared to national ones
- Identification of possible new forms of scientist-politician interaction
- Recommendations for the development of policies related to science and technology.

#### **Project status end of 2011**

In the framework of this project a conference was held on 7 September 2011 (see next section). The final report was published in April 2012.

*QR link  
to the report*



**Project conference: 'pan-European Parliamentary Technology Assessment'**

As part of the project 'Technology across borders', a conference entitled 'pan-European Parliamentary Technology Assessment' was organised by STOA in close cooperation with EPTA. This event took place on 7 September 2011 in the European Parliament in Brussels.

A working document was prepared for the STOA Panel that provided an overview and analysis of the current situation of PTA in Europe.

In order to explore the opportunities, desirability and conditions for a successful pan-European approach, this conference was organised with the two following goals:

- Inform Members of Parliament (European, national, regional) already involved or preparing to become involved in PTA activities in Europe;
- Explore and develop perspectives for pan-European activities.



More specifically, the conference focused on the following issues:

- Motivation for and added value of pan-European approaches and activities in PTA;
- The roles of stakeholders (EPTA members, new PTA entrants, parliaments) and civil society organisations and their interactions in developing such approaches;
- Conditions and contents (themes/domains) to be addressed in a successful pan-European PTA approach and the future governance of STI policy based on this approach.

The results of the discussions in this conference are integrated in the final project report.

## 2.6.4 Workshops

### 2.6.4.1 Gender quality in research



The European Gender Summit 2011, 'Quality Research and Innovation through Equality' was an official EU Presidency event, supported by the 7th Framework Programme and held under the patronage of Giles Chichester, Vice-President of the European Parliament responsible for STOA. Mr Chichester delivered a keynote speech in the opening session of the second conference day. Ms Silvia Adriana Țicău, MEP and STOA Panel member, participated in a

roundtable discussion entitled 'Gendered R&D - Opportunities for Innovation' on the first day.

Extensive research has demonstrated that the quality of research and development benefits significantly from adding gender as a critical success factor for innovation. The first European Gender Summit networked key players from all sectors to initiate the much-needed changes in the culture of research and innovation. These joint discussions produced the first ever collective agreement on policy development on gender for innovation, the policy manifesto on 'Integrated Action on the Gender Dimension in Research'.

### 2.6.4.2 Workshop 'Riding the wave: How Europe can gain from the rising tide of scientific data'

STOA organised this workshop in cooperation with the European Commission, Information Society and Media DG, to promote a globally open and interoperable infrastructure for scientific data in the light of the report 'Riding the Wave: How Europe can gain from the rising tide of scientific data'.

This report was the result of six months of intense brainstorming and consultations with experts from around the world to prepare a 'vision 2030' for Scientific Data e-Infrastructures. It describes long-term scenarios and associated challenges regarding scientific data access, curation and preservation, as well as the strategy and actions necessary to realise the vision. The High-Level Group was composed of twelve top-level European experts in different fields of science and was chaired by Prof. John Wood of the Imperial College (London), Chair of the European Research Advisory Board (ERAB).



The workshop, held on 20 October 2011 in the European Parliament in Brussels, was chaired by Teresa Riera Madurell, MEP and STOA Panel member. The keynote speech was given by Prof. John Sulston, Manchester University, Nobel Prize in Medicine in the area of Genomics.

The report of the High Level Group on the future of scientific data is available on the web<sup>6</sup>.

<sup>6</sup> <http://cordis.europa.eu/fp7/ict/e-infrastructure/docs/hlg-sdi-report.pdf>

### 2.6.4.3 Astronomy and space sciences



STOA organised on 24 May 2011 a workshop on 'Astronomy and Space Sciences - The Map and Evolution of the Universe', with cosmologist and astrophysicist Sir Martin Rees as keynote speaker. The workshop was chaired by Salvatore Tatarella and Teresa Riera Madurell, both MEPs and members of the STOA Panel. Outside, telescopes were set up to allow visitors to the Parliament to take a peek at the Sun.

Sir Martin Rees pointed out that "even the least complex thing in the Universe is hard to understand." Despite all the progress made over the past century, "what all my colleagues share is the sense of mystery and wonder".

According to Roberto Gilmozzi, Director of the European Southern Observatory (ESO), studying the stars and seeing where they are born and how they die is already a huge achievement, but the greater challenge is still before us: finding an earth-like planet. Ms Riera Madurell MEP, noted that "Europe is playing a pioneering role" with "an efficient and well-coordinated astronomy programme", but it is also "our task to make young people aware of the importance of science".

Astronomy is "a unique tool for development", but also a unique tool for inspiring children to take up science, Professor George Miley of Leiden University explained, presenting the Dutch Universe Awareness project, designed "to introduce young children to the excitement of science".

For Mr Tatarella MEP, "astronomy could lead in a not too distant future to huge discoveries and achievements that may also change abruptly our vision of reality".



*Salvatore Tatarella and Teresa Riera Madurell, both MEPs and STOA Panel members*

### 3. THE MEP-SCIENTIST PAIRING SCHEME

The relationship between scientific expertise and policy-making continues to develop and expand as scientific knowledge underpins many aspects of public policy, from healthcare and the ageing population to energy production and climate change. Policy-makers have a role to play, particularly in public debates about scientific advances and new technologies, where there may be a need for regulation or legislation, in areas such as genetic modification, reproductive technologies, or nanotechnology. Therefore the development of relationships between scientific experts and policy-makers is essential to improve this two-way flow of knowledge. Increased interaction between policy-makers and scientists has a number of benefits:

- Firstly, policy-makers gain a deeper understanding of the scientific process, the practicalities of undertaking research and the potential of scientific knowledge.
- Secondly, scientists learn about the role of science in policy-making, the policy-making process itself and how to interact effectively with politicians.

The development of these relationships enables MEPs to extend their access to scientific expertise, not only through the new connections to individual practising scientists, but also to their wider professional networks, increasing opportunities for scientific input to future policy-making.

To support this development of relationships between MEPs and scientists, the European Parliament ran two rounds of a MEP-Scientist Pairing Scheme in 2007 and 2008. Jointly organised and managed by STOA, on behalf of the European Parliament, and the European Commission's DG Research, this scheme brought together a small number of pairs of MEPs and scientists to build relationships through experiencing each other's professional world and day-to-day activities.



STOA decided to reintroduce the pairing scheme in 2011 to further develop and improve its role in engaging and building relationships between European scientists and parliamentarians. The 2011 scheme took place over two stages and paired 12 MEPs who possessed both a thorough interest in science and who sit on relevant committees (those with a direct requirement for scientific advice, such as ITRE and ENVI) with 12 scientists that were very experienced in a matching field and who had an interest in the policy-making procedures within the European Parliament.

This first stage was the so-called 'Brussels week', during which the selected scientists came to Brussels where they attended information sessions on the workings of the European Parliament and spent time shadowing their MEP counterparts in their daily parliamentary work. The activities of this week took place between from 21 to 24 November 2011.

The second part involves visits of the MEPs to the scientists' places of work to see them in practice in their laboratory and institutions. It presented a good opportunity for MEPs to meet their paired scientists' research colleagues and create additional relationships and networks. It is clear that the collaboration with the scientists is valued by the MEPs.

A preliminary conclusion for the organisation of future rounds of the MEP-Scientist Pairing Scheme is that one should ensure the final outcome to be shared with a wider public, as it was done by the robotics event on the 28th of March 2012, which resulted from the pairing of Ioannis Tsoukalas MEP, with Prof. Angelo Cangelosi of the University of Plymouth, UK.

## 4. STOA ON THE GLOBAL SCENE

### 4.1 STOA partners

STOA is committed to cooperation with the best and most up-to-date expertise in Europe and worldwide over the years. STOA's scholars and contractors have been drawn from all the EU Member States, candidate countries, Switzerland, Russia and the USA.

STOA has established good relations with relevant Directorates-General of the Commission and works closely with the Joint Research Centre (JRC) and its Institute for Prospective Technological Studies in Seville. A STOA-JRC High-Level Meeting took place on 6 December 2011.

STOA is also in permanent dialogue with other technology assessment agencies and liaises with EuroScience (organiser of the EuroScience Open Forum - ESOF), the European Science Foundation (ESF) and the Science and Technology in Society (STS) forum.

STOA was represented at the 4th International Seville Conference on Future-oriented Technology Analysis (FTA), Seville, 12-13 May 2011. The focus of this JRC conference was on the need and potential of FTA to address disruptive transformations in response to grand societal challenges.

### 4.2 The EPTA network

STOA is an active member of the European Parliamentary Technology Assessment network (EPTA), which it chaired in 1998. The other partner organisations are the national/regional parliamentary technology assessment bodies of Catalonia, Denmark, Finland, Flanders, France, Germany, Greece, Italy, the Netherlands, Norway, Sweden, Switzerland and the United Kingdom.



STOA representatives attended the:

- EPTA Directors meeting, 2-4 May 2011, in Karlsruhe (STOA Secretariat);
- EPTA Council meeting & Conference, 19-20 October 2011, in Berlin (António Correia de Campos).

### 4.3 STOA delegations and meetings

During 2011, STOA delegations participated in events of the European Parliamentary Technology Assessment (EPTA) network (Section 4.2), visiting the Joint Research Centre in Seville (section 4.1), and attended the Annual Meeting of the Science and Technology in Society (STS) forum in Kyoto, and the World Science Forum in Budapest.

#### 4.3.1 *BioVision, the World Life Sciences Forum - 27-29 March 2011, Lyon*

A STOA delegation, consisting of Paul Rübig, MEP and STOA Chairman, and António Correia de Campos, MEP and STOA Vice-Chairman, attended the 2011 edition of BioVision, the World Life Sciences Forum, held every two years in Lyon. This year's forum comprised more than 70 events, with 163 speakers, and was attended by some 2000 delegates.

The STOA MEPs played an active role in important conference sessions linked to current STOA priorities.

The STOA Chairman took part in a roundtable on 'Can we 'cure' ageing?' in the Scientific Advances track. This round table was preceded by a scientific session chaired by Prof. Jean-Claude Ameisen, President of the Ethics Committee, Inserm (*Institut national de la santé et de la recherche médicale* - France), who emphasised that ageing was part of the same process as birth, growth and reproduction. Caloric restriction has been found to prolong life in some genera (worms, yeast, flies, mice), but even single cell organisms age and die (e.g. programmed cell death in bacteria). Social, economic and cultural factors play a role in the pursuit to maximise life span, but maintaining relationships is also important alongside maintaining our bodies.

The STOA Vice-Chairman spoke in a workshop on technology innovation in healthcare, entitled 'How can technology innovation transform healthcare delivery?', in the Business in Life Sciences track. The workshop was moderated by Dr Olivier Raynaud, Senior Director, Health Initiatives, World Economic Forum.

During the BioVision event, the yearly ECRIN (European Clinical Research Infrastructure Network) Stakeholders' Meeting 2011 took place under the heading 'Making Europe a single area for clinical research: ECRIN'. Dr Rübig MEP, was a speaker in this satellite event, which aimed to illustrate the ECRIN experience, leading to the integration of the clinical research capacity and the use of common standards, tools and procedures for multinational trials, providing access to patients and clinical expertise across Europe.

Finally, STOA co-organised with EuroScience a workshop centred on the STOA project 'Nanosafety'. The workshop was entitled 'Nano-Safety – Risk Governance of Manufactured Nanoparticles'.

#### ***4.3.2 The Science and Technology in Society forum, 2-4 October 2011, Kyoto***

The STOA Chairman, Paul Rübig MEP, attended the 8<sup>th</sup> annual meeting of the Science and Technology in Society (STS) forum. As the only high-level European Union (EU) policy-maker attending the forum, he had an active presence in the forum itself and had an opportunity to meet, on the sidelines of the forum, and exchange views with leading policy-makers about important issues concerning international cooperation in the area of Science and Technology (S&T).

The 2011 meeting was clearly influenced by the consequences of the disastrous earthquake that hit Japan on 11 March 2011, and especially by the nuclear emergency that arose in the Fukushima-Daiichi nuclear power plant as a result of the subsequent tsunami.



*Paul Rübig (STOA Chairman), Koji Omi, Founder and Chairman of the STS forum (Japan), Ashwani Kumar (MP India)*

Paul Rübig's main contribution to the forum consisted of:

- 1) Chairing the official conference dinner on 2 October 2011, and
- 2) Participating as a speaker in a conference on 'Risk Communication in Emergencies' organised by the EU Delegation to Japan, together with the Member States and with the support of *Nature* magazine, on the sidelines of the forum and in the wake of the March 11<sup>th</sup> disaster.

Moreover, as a member of the STS forum Council, Paul Rübig MEP, participated in important meetings of the Council, which plays a crucial role in planning the activities of the forum.

Finally, he had various bilateral meetings with leading S&T policy-makers, from Japan, other Asian countries (India, China, Korea, Singapore) and Europe (Switzerland).

These exchanges were appreciated by all sides, who confirmed their interest and commitment in pursuing their contacts in the context of or in parallel with future meetings of the STS forum. STOA's special commitment to the STS forum was confirmed by the invitation of the forum's founder and chairman Koji Omi as a keynote speaker to the STOA Annual Lecture held on 29 November 2011.

#### 4.3.3 5<sup>th</sup> Meeting of the World Science Forum - 17-19 November 2011, Budapest

Paul Rübig, STOA Chairman, was invited to deliver a speech in the plenary session of the forum on 19 November 2011. The venue was the House of Parliament and the session was chaired by Balázs Gulyás, Executive Director, World Science Forum.

"Who knows better the challenges facing us than people in science?" asked Paul Rübig, adding that it is science that can give options for politicians to consider. According to him the real issue is to put more science (through innovation) into the area of energy production. He explained that STOA is also active in the area of social networks, intellectual property and research on ageing. Mr Rübig concluded: "Knowledge is power and power brings security".

Other speakers in the session were:

- Pál Schmitt, President of Hungary
- Tibor Navracsics, Deputy Prime Minister, Minister of Public Administration and Justice
- Patrick Amuriat Oboi, Member of Parliament, Uganda
- Ulla Burchardt, Chair, Committee on Education, Research and Technology Assessment, Bundestag, Germany
- Rémi Barré, Conservatoire National des Arts et Métiers Recherche (CNAM), France
- Andrew Miller, Chairman, Science and Technology Committee, House of Commons UK
- Katalin Bogay, President of the 36<sup>th</sup> General Conference of UNESCO

#### 4.3.4 STOA meets Nature editor : Dinner with Dr Alison Abbott, Europe Editor, Nature Magazine, 26 January 2011

It is important that one of the world's leading science journals, *Nature*, better understands the contribution of the STOA Panel and of the European Parliament as a whole to science policy in the EU. The STOA Chairman aspired to ensure that Dr Abbott understands our role and reflects this in future coverage of EU Science and Technology, R&D and related policies in *Nature*, which is an important communication channel to global science leaders in government, industry and academia.



Paul Rübig (MEP, STOA Chairman), Alison Abbott (Europe Editor Nature Magazine) and Theo Karapiperis (Head of STOA Secretariat)

Discussed were, among other things, ways of financing the transition to a low-CO<sub>2</sub> economy (emissions trading proceeds, competition law, regional funds), the role of the European Institute of Technology (EIT) in the roll-out of knowledge to the education system, the future funding of the European Research Council (ERC) and transparency versus privacy issues in the Internet age.

## 5. COMMUNICATION OF STOA ACTIVITIES

### 5.1 Website

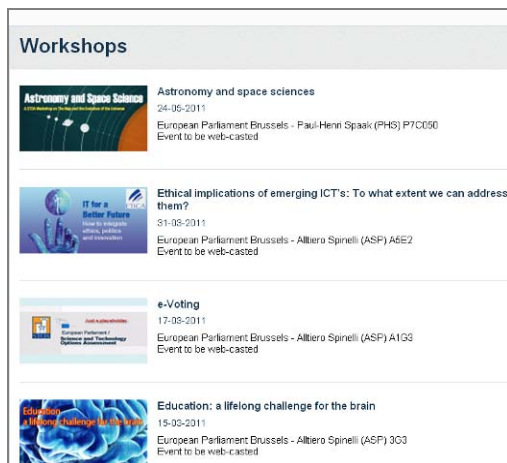


On 18 November 2011, STOA launched its new website:  
[www.europarl.europa.eu/stoa/](http://www.europarl.europa.eu/stoa/)

It follows the format of the Parliament's general website, emphasising in this way STOA's integration in the parliamentary work.

The new, more attractive STOA website gives at a glance an overview of what STOA is doing:

- upcoming and recent events;
- STOA studies;
- newsletters and annual reports.



The website enables the user to register on-line to workshops and other STOA events, and to subscribe on-line to the STOA Newsletter.

An uncomplicated search engine enables to search through the rich STOA studies archive.

In 2012 still more efforts will be undertaken to bring information about STOA in a more straightforward manner to the MEPs.

### 5.2 Newsletter

In 2011 six STOA Newsletters were published, reporting on the activities of the STOA Panel.

Anyone interested in the STOA activities can subscribe to receive the STOA Newsletter by email (see STOA website, section 'STOA Friends').



## 6. IMPLEMENTATION OF THE STOA EXPERTISE BUDGET

### 6.1 STOA Framework Contract for the provision of scientific consultancy

STOA signed in 2009 a multi-annual contract (Framework Service Contract in 8 Lots for the provision of scientific consultancy for STOA - IP/A/STOA/FWC/2008-096) covering the delivery of technological and scientific expertise in the following eight areas:

| Lot | Lot Area                                                             | Contractors (°)          |
|-----|----------------------------------------------------------------------|--------------------------|
| 1   | Energy                                                               | 1) ISIS<br>2) KIT        |
| 2   | Transport                                                            | 1) KIT<br>2) Consultrans |
| 3   | Environment (including Climate Change)                               | 1) IEEP<br>2) KIT        |
| 4   | ICT and Information Society                                          | 1) KIT                   |
| 5   | Nanoscale science and technology (including industrial applications) | 1) KIT<br>2) IVAM UvA BV |
| 6   | Life-sciences and human well-being                                   | 1) KIT                   |
| 7   | Agriculture, food and biotechnology                                  | 1) KIT                   |
| 8   | Science Technology and Innovation Policy                             | 1) Technopolis<br>2) KIT |

(°) *Contractors:*

Consultrans, Spain

IEEP - Institute for European Environmental Policy, United Kingdom

ISIS - Institute of Studies for the Integration of Systems, Italy

IVAM UvA - Interfaculty Environmental Science Department of the University of Amsterdam, The Netherlands

KIT - Karlsruhe Institute of Technology, Germany

Technopolis, United Kingdom

### 6.2 Overview of the contractors per STOA project

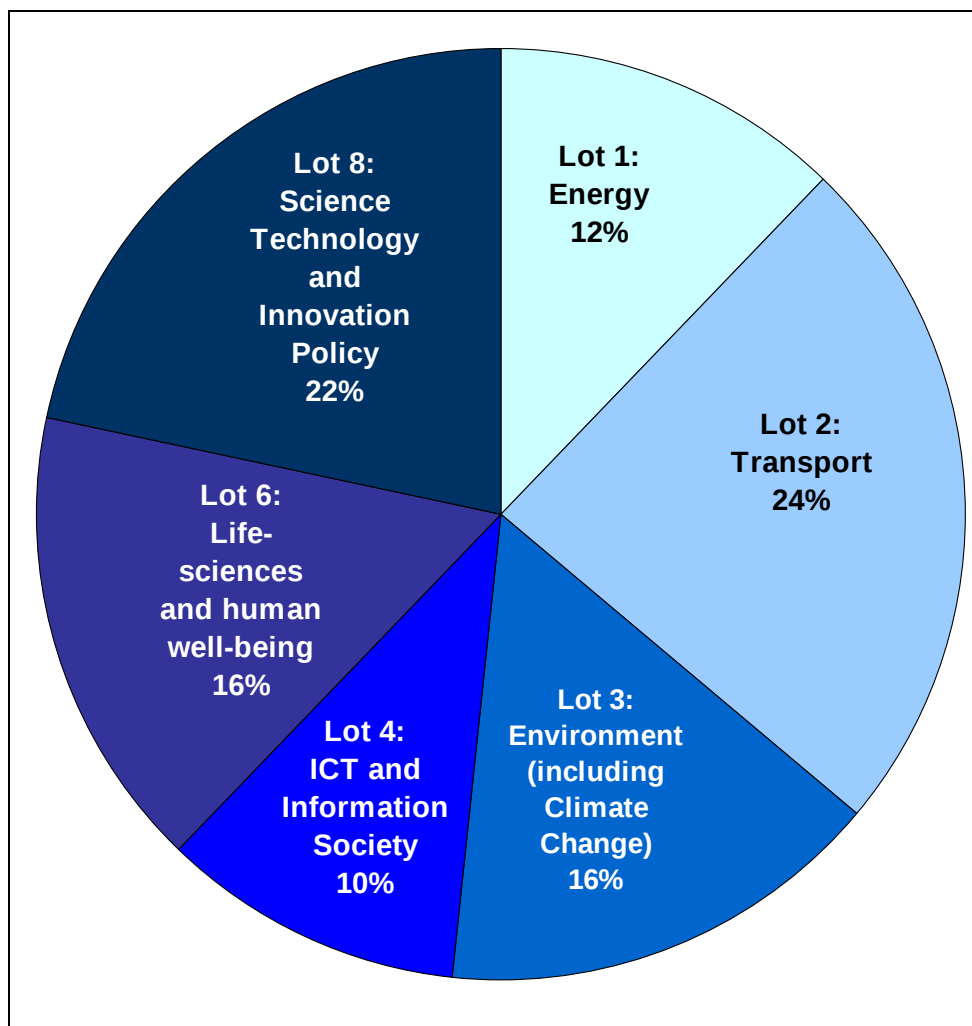
| Lot n° | Projects                                                                          | Contractor  |
|--------|-----------------------------------------------------------------------------------|-------------|
| 1      | Energy Grids                                                                      | ISIS        |
| 2      | Technology options for urban transport                                            | KIT         |
| 3      | Sustainable management of natural resources                                       | IEEP        |
| 3      | Systemic approach to adaptation to Climate Change and renewable energy harnessing | IEEP        |
| 4      | Security of e-Government Systems                                                  | KIT         |
| 4      | Cloud computing implications for personal data and network security               | KIT         |
| 6      | Making Perfect Life                                                               | KIT         |
| 8      | Measuring scientific performance for improved policy-making                       | Technopolis |
| 8      | MEP-Scientist Pairing Scheme                                                      | Technopolis |
| 8      | Technological impacts of knowledge transfer from Public Research Organisations    | Technopolis |

### 6.3 Execution of the STOA expertise budget

|                      |           |
|----------------------|-----------|
| Funds available:     | 650,000 € |
| Funds spent in 2011: | 621,605 € |
| Unspent:             | 28,395 €  |

Execution of the STOA budget: 96%

*Percentage of the budget spent per Lot in 2011:*



## STOA ADMINISTRATION<sup>7</sup>

European Parliament  
Directorate-General for Internal Policies of the Union  
Directorate G: Impact Assessment and European Added Value  
Rue Wiertz 60  
B-1047 Brussels  
Tel. +32 2 284 4545  
Fax +32 2 284 4984  
E-mail: [stoa@europarl.europa.eu](mailto:stoa@europarl.europa.eu)

**Director-General:**

Riccardo Ribera d'Alcalà

**Director (Acting):**

Anthony Teasdale

**Head of Unit:**

Theo Karapiperis

**Administrators:**

Miklós Györffi  
Peter Ide-Kostic  
Gianluca Quaglio  
Lieve Van Woensel

**Assistants:**

Serge Evrard  
Karin Hoitsch  
Damir Plese  
Marie-Claire Uwizera  
Anne Villers

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<sup>7</sup> STOA Administration at the moment of the publication of this report

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