

European Academies



Science Advisory Council

The Network of European Academies of Science EASAC

G7 Science Conference

The role of National Academies and International Academic Networks in advising institutions

Accademia Nazionale dei Lincei, Rome, 03 May 2017

Prof. Thierry Courvoisier

EASAC President

What is EASAC?

- EASAC = **European Academies' Science Advisory Council**
- Source of **independent scientific advice** for policy-makers in the EU's institutions and member states and Europe generally
- National Science Academies in Europe:
 - Networks of **scientific excellence** in Europe
 - Shared task of science-based **advice for policy and society**

EASAC membership

- ✓ The **25 national science academies of EU** member states (there are no national science academies in Malta, Luxemburg or Cyprus)
- ✓ Also, by explicit vote, the national science academies of **Norway** and **Switzerland**
- ✓ The pan-European Academy of Science: **Academia Europaea**
- ✓ The association of all academies in geographical Europe, **ALLEA**
- ✓ Observer status of **FEAM**, the association of EU Academies of Medicine

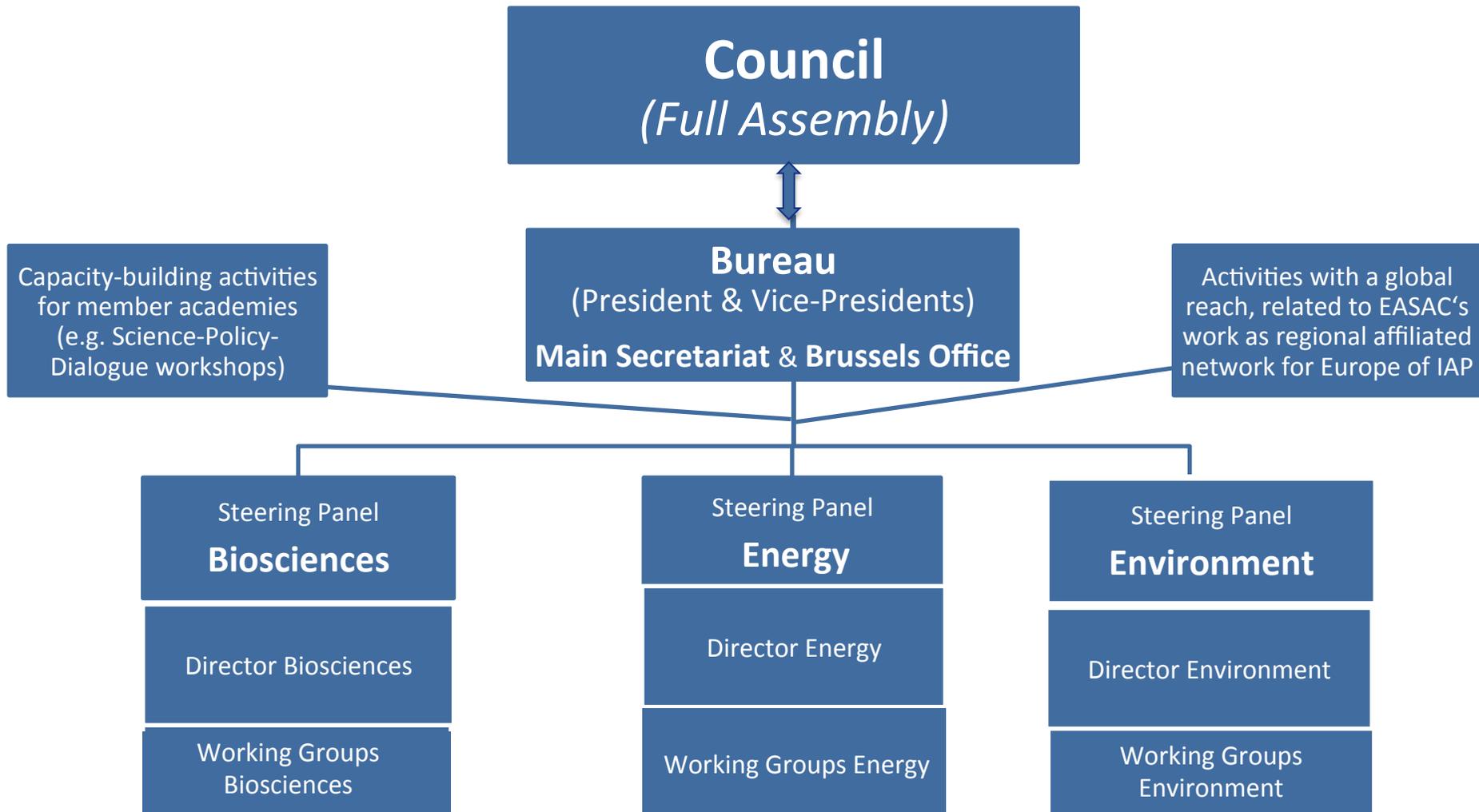


EASAC - What does it do ?

- “Science for policy”: use of scientific evidence to guide EU policy making (i.e. *not* “policy for science” and some other areas of activity that are typical for academies)
- Detailed analysis and recommendations from Europe’s most respected scientists
- Publications are designed for a policy-oriented audience, not only other scientists
- Efficient and timely manner of offering science-based analysis and advice for policy and the public



EASAC's structure



Some recent EASAC outputs

- **Genome Editing:** scientific opportunities, public interest and policy options in the European Union (March '17)
- **Circular Economy:** Indicators and Critical Materials (Nov '16)
- **Greenhouse gas footprints** of different oil feedstocks (April '16)
- **Marine sustainability** in an age of changing oceans and seas (Jan '16)
- **Gain of Function** (in virology) (Oct '15)
- **New Breeding Techniques** (July '15)
- Ecosystem services, agriculture and **neonicotinoids** (March '15)
- **Shale gas extraction:** issues of relevance to the EU (Nov '14)
- **Antimicrobial drug discovery:** greater steps ahead (Oct '14)
- European **Space Exploration:** Strategic Considerations of Human versus Robotic Exploration (September '14)

Some journal publications

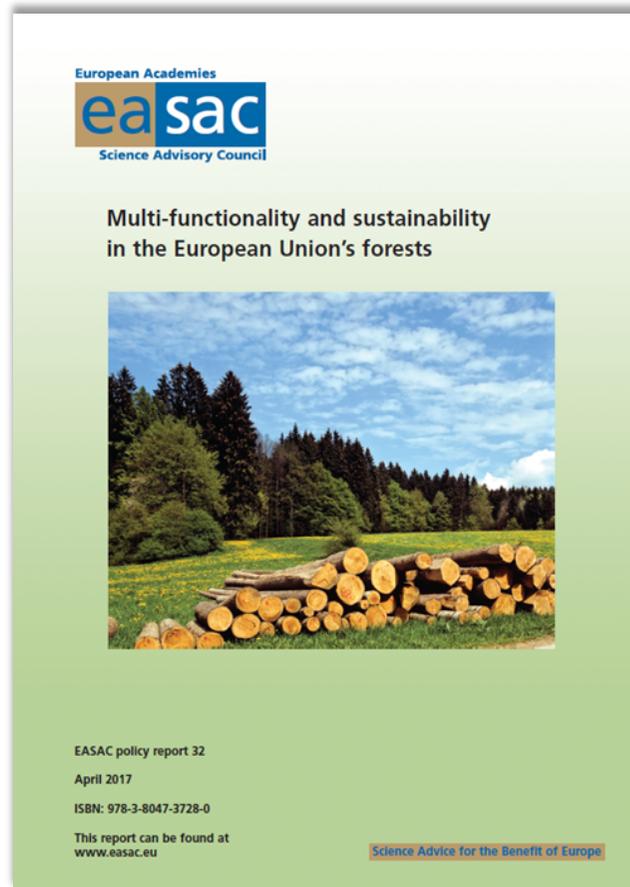
- How should the applications of genome editing be assessed and regulated? eLife, April 2017  eLIFE 
- «Frankenvirus», bientôt l'épilogue?, Le Monde, April 2016
- Genetic gain of function, Nature, October 2015 
- Antimicrobial Innovation, Nature Reviews, Oct 2014
- Time to settle the synthetic controversy, Nature, May 2014
- How should we tackle the global risks to plant health? Trends in Plant Science, April 2014 
- What do we need to do to tackle antimicrobial resistance? The Lancet Global Health, November 2013 
- Europe should rethink its stance on GM crops, Nature, June 2013

Genome Editing (March 2017)



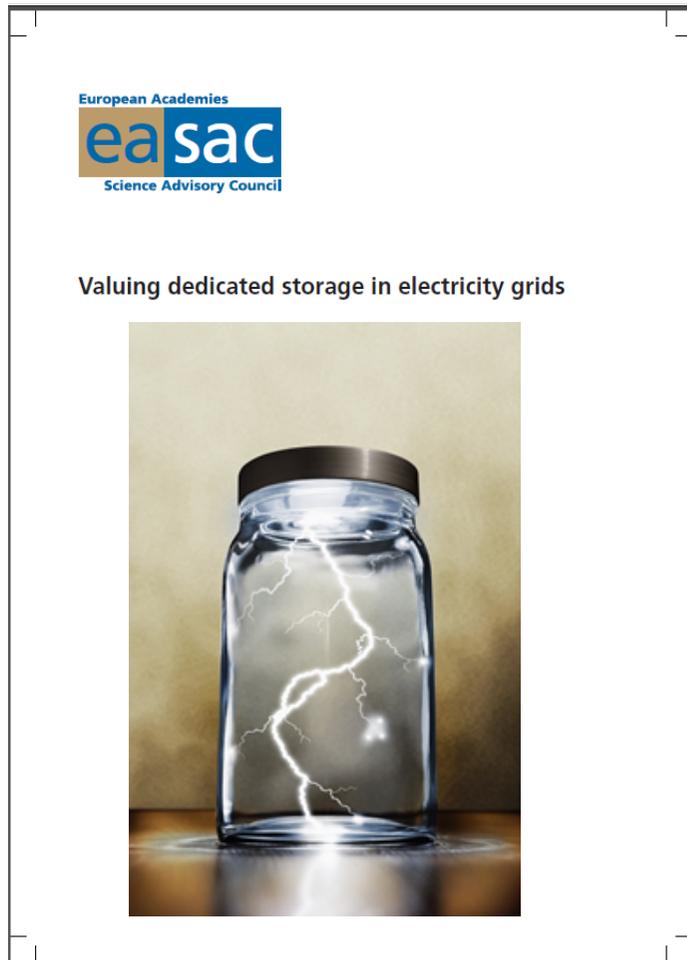
- Plants: advice to regulate the specific agricultural trait/product rather than the technology used
- Gene drive applications (e.g. control of disease vectors): phased approach
- Human applications: intensive basic and clinical research should proceed subject to appropriate legal and ethical rules and standardised practices.
- Need for public engagement on important research advances and their societal implications

Sustainable Forests (April 2017)



- (Biodiversity for) Multifunctionality and delivery of ecosystem services
- Tension between demands for increased extraction of biomass and contribution of same biomass *in situ* to soil fertility, biodiversity and protective functions.
- Interaction between forests management and climate change mitigation efforts (also: forests' biophysical effects).
- Biomass energy impact re. CO₂ relatively poor, which should be reflected in renewables subsidies.

Electricity Storage (May 2017)



- Variable renewable electricity generation call for storage options and integration.
- Trend of battery storage at ‘prosumer’ level (PV households).
- Grid back-up systems requirements will not decrease in next 30-40 years as new technologies also mature.
- Need for electricity market design encouraging cost-efficient flexibility, responding to PV+battery increase and staying ‘technology neutral’.

Addressing global challenges



Biosciences (Using crop genetic improvement technologies for sustainable agriculture)



Environment (The current status of biofuels: their environmental impacts and future prospects)



Energy (Concentrating solar power: its potential contribution to a sustainable energy future)

EASAC is looking at broadening its portfolio of policy-relevant areas of science

EASAC, the EU and its Member States

- The academies in Europe are in a good position to offer science-based advice to policy because there is a clear ***audience*** for it: the EU's institutions (esp. Commission and EP)
- Estimates say that approx. 80% of all legislation in individual EU member states originates in Brussels (directly or indirectly)
- Thus, if EU national science academies want to deliver their advice where it has the biggest impact, *that* is in Brussels
- Special weight of united voice of member state academies
- Over the past years, EASAC has made substantial progress in delivering advice to the EU Commission and EU Parliament

Conclusion

- Since 2001, EASAC has substantially contributed to bringing knowledge to European policy-making.
- Underpinning policy with science is an essential ingredient on a planet deeply influenced by human activity.
- EASAC continues to work on providing „Science for the Benefit of Europe“ with enthusiasm.