

The recent work of the Intergovernmental Panel on Climate Change (IPCC)⁷ is an obvious example of a participatory, scientifically rigorous assessment process on a global scale that highlights the alternative climate and energy policy options and their (co-)effects. But the IPCC analyses (which also inform EU policies) have been slightly constrained; some governments do not want the IPCC to critically evaluate their policies and measures^{12,22}. The SAM therefore needs a clear mandate for critically assessing past and future policy options and measures, particularly in light of different national perspectives.

Despite the wealth of scientific research and governmental in-house expertise on EU climate and energy issues, their integrated assessment in the above sense is still lacking. The assessment format proposed above also transcends — but could integrate — the standard scientific reports and policy briefs on climate and energy issues. Such standard reports sometimes give clear-cut, yet divergent policy recommendations based on partial analyses and lacking scientific rigor. The proposed assessments also transcend the EU's crucial impact assessment procedure, such as that used for the EU Energy Roadmap 2050 (<http://go.nature.com/CuSVsD>). They do this by engaging stakeholders more seriously, exploring various quantitative and qualitative implications of a broad range of disputed policy options and measures, focusing on peer-reviewed publications, rigorously reviewing the assessment itself and drawing lessons from structured model comparisons²³.

Possible way forward

Building on, yet amending, the existing plans for the SAM, the Commission could introduce such assessments on climate and energy or other complex policy issues as follows:

- The High Level Group should consist of widely respected, well-connected senior scholars from different disciplines,

including the social sciences, humanities and engineering, all with science-policy experience. In cooperation with, but largely independent from, the Commission, they could be given the task of initiating and leading the assessments, as well as selecting authors and relevant stakeholders for the processes.

- The Joint Research Centre — a sometimes undervalued resource — could be charged with coordinating and co-conducting the core assessment processes at an operational level, along with other existing specialist advisory bodies and many external assessment authors. The Centre could also produce peer-reviewed pre-assessments to aid the assessments.
- European scientific academies, by virtue of their scientific authority, could incentivize the research to feed into the assessments. This would fill the substantial research gaps concerning specific climate and energy policy issues, particularly those of integrated social-science policy analysis^{7,12}. They may also help develop integrated policy assessment methodology to ensure high scientific quality in light of the challenges discussed above. For these purposes, it would be beneficial for the academies to broaden their involvement of female experts, non-members and junior researchers. Through academic incentives, the scientific academies could make the onerous assessments (often based on voluntary, unpaid work)²⁴ into respectable and serious scientific tasks in their own right.

The provision of larger-scale, integrated and participatory assessments of EU policy alternatives and their implications would add flesh and muscles to the skeleton of the existing proposal for the SAM. With it, the new SAM could become a remarkable step forward for the EU's science/policy interface. □

Martin Kowarsch is at the Mercator Research Institute on Global Commons and Climate Change (MCC), Torgauer Strasse 12–15, 10829 Berlin, Germany. *e-mail: kowarsch@mcc-berlin.net

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Correction

In the Commentary 'Resilience synergies in the post-2015 development agenda' (*Nature Clim. Change* **5**, 1024–1025; 2015), Saleemul Huq's name was misspelt in the Affiliations section. This was corrected in all online versions on 7 December 2015.