

Addressing Generative AI in Technology Assessment and Scientific Policy Advice: International Perspectives

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Introduction

The unprecedented rise of generative artificial intelligence (AI) – especially since the release of OpenAI’s large language models like ChatGPT – has sparked both fascination and concern [1], while opening up new avenues for research and scientific policy advice by accelerating workflows, enhancing information retrieval, and streamlining document creation and data analysis [1–7]. It can also help improve target group-specific communication and contribute to the democratisation of scientific knowledge [5,6]. Yet, the benefits of generative AI tend to be mindered by risks such as biases related to discrimination and political orientation [1,5,6,8] and misinformation due to so called hallucinations [6]. For technological assessment (TA) as problem-oriented research with an advisory mandate [9], a number of questions arise about how to leverage the potential while taking the challenges into account. This could involve, for example, the adaption of quality assurance processes and the development of guidelines to clarify the conditions under which to use generative AI in scientific policy advice [10].

As part of the DiTraRe (Digital Transformation of Research) [11], this study examines: To what extent, and in which ways, have TA institutions involved in providing scientific policy advice integrated generative AI into their practices so far?

Objective

The study aims to explore whether the emergence of generative AI and its capacity for autonomous knowledge production pose specific challenges for scientific policy advice. It

further investigates the extent to which generative AI is transforming TA practices and provides an overview of TA activities in this context.

Methods

Semi-structured expert interviews [12] were conducted from June until August 2025 with employees from selected TA institutions who are working on the implementation of generative AI. Institutions included the GAO (US), POST and the Autonomy Institute (UK), Teknologirådet (Norway), and the Committee for the Future (Finland). These institutions are involved in policy advice in various national settings (e.g. at the parliament, ministries/government). The results are analysed according to Mayring’s qualitative content analysis [12]. For this purpose, the codes are taken from the interview guide and then openly expanded and modified based on the material.

The expert interviews cover the following topics: *first* data science and generative AI applications and workflow integration in TA and scientific policy advice, *second* potentials, risks, and impact, *third* risk mitigation and regulatory work, *forth* factors of change and transformation (motivation, regulatory work, specific TA requirements for data products), *fifth* outlook (value of TA experts in the future, future use cases, advice for institutions).

Results

For this poster, preliminary results from the interview study will be presented. These comprise the potential benefits of using generative AI in scientific policy advice, such as time efficiency, skills acquisition, exploring new work-

Table 1: Preliminary results of expert interviews on the use of generative AI in TA and scientific policy advice (excerpt)

Focus Topic Dimension	Applications & workflow integration	Risk mitigation & quality assurance	Factors of change & transformation
Exploration & learning	Understand AI functionality, run experiments, conduct user research, develop use cases	Check prompt consistency, design human-in-the-loop workflows, compare output across models to detect biases	Motivation (quality enhancement, efficiency gains), build understanding how systems are used
Use cases & impact	AI assists & advances activities: literature review, transcription, data transformation, coding, scenario development	Teams develop internal guidelines or gold standards, focus on transparency & quality assurance when developing AI solutions	Institutions offer training & workshops (in some cases, lack of formal training structures), identify gaps in adoption
Challenges for policy advice & institutional practices	Specific requirements: research diaries, peer-review processes, ensuring transparency & reliability of results	Usage decisions on (unsafe) external or (more limited) in-house models, social implications inconsistent & difficult to predict	Wide range in the degree of adoption, upscaled AI usage still very limited due to lacking standards and processes

flows, are offset by risks such as overreliance on AI, cognitive skill erosion, lack of reliability and integrity, bias and hallucinations, black box problem. As can be seen in Table 1, it is evident that the results span three levels, ranging from exploring, testing use cases and identifying challenges. The institutions address these in their work processes, quality assurance and change management. The specific mandate and priorities of each institution determine how this is structured and what priority is given to it.

Discussion

The results show that overall, generative AI is increasingly integrated into TA and scientific policy advice, particularly for structured and repetitive tasks such as literature reviews, data transformation, and horizon scanning. However, the findings also highlight ongoing concerns regarding reliability, transparency, and the need for internal guidelines and training to ensure quality standards and responsible use with a focus on AI ethics for research and policy advice. Future plans and use cases

of the institutions point toward the development of in-house generative AI systems to expand the analytical and advisory capabilities of parliaments and TA institutions. At the same time, experts emphasize the enduring value of human expertise, like particularly in asking the right questions, providing contextual understanding, curating data, maintaining oversight, and exercising critical thinking when integrating AI into policy processes.

Further research could examine other types of policy advice beyond TA, as generative AI may shape and be shaped differently across diverse advisory contexts such as economic, environmental, or social policy consulting. Another valuable direction would be to extend the study to additional countries once they begin to integrate or systematically explore the use of generative AI in their advisory processes. This would allow for comparative insights into how different political, institutional, and cultural contexts influence the adoption, governance, and perceived legitimacy of generative AI in TA and policy advice.

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