

## PRELIMINARY LIST OF POLICY QUESTIONS OF HIGH RELEVANCE FOR STI POLICY IN AI

This list represents a selection of policy questions under the policy cycle stages **Agenda Setting** and **Evaluation** which have been rated as highly relevant by STI policy makers in AI.

### POLICY CYCLE STAGE: AGENDA SETTING-INTELLIGENCE GATHERING & PROBLEM IDENTIFICATION

#### Innovation system function: Entrepreneurial activity

**Key question** Where should resources be invested (individual companies, sectors, value chains) to support the national innovation system to successfully undertake R&D and compete internationally?

**Rationale**

**A: Understand which companies are active in emerging fields (emerging field defined under Knowledge Creation) and likely to excel in the future, this is where you want to invest**

**B: Understand where local companies have an R&D&I specialization (the answer to these questions will be prepared during the monitoring and evaluation part of the cycle)**

#### List of sub-questions

- Are companies adapting to technological transformation trends in their respective sectors? How do they compare with major (international) competitors?
- Which companies emerge with specific disruptive technologies and functional applications, and agents developing and using those AI technologies?
- Are companies emerging with specific disruptive technologies scaling up?
- Are scale ups leaving the country/region/city?
- Does the country/region/city attract entrepreneurial talent?
- In which R&D fields is the highest share of all company R&D investments?
- In which R&D fields is the country/region/city improving its revealed comparative advantage?

#### Innovation system function: Knowledge creation

**Key question** In which fields is new knowledge coming up?

**Rationale** Does it make sense to support national research in the new fields of knowledge likely to make breakthroughs?

#### List of sub-questions

- Which are the emerging interdisciplinary fields globally?
- Which are the research teams/ thought leaders in the country undertaking research in these fields?
- Which are the research teams in the country that might be successful if guided towards these research areas?

### Innovation system function: Knowledge diffusion through networks

**Key question** Does the diffusion function work well in the country?

**Rationale** Understand the mechanisms of knowledge diffusion

**List of sub-questions**

- Which knowledge diffusion channels work best in good practices per discipline at national level?
- Which diffusion channels work best per discipline internationally?
- Which networks e.g., clusters, hubs, intermediaries operate nationally per discipline?

### Innovation system function: Guidance

**Key question** Which are the current societal priorities expecting research to provide results?

**Rationale** Understand global and own priorities, capture momentum in terms of EU financing priorities

**Sub-question**

- Are there specific national/macroregional societal challenges?

### Innovation system function: Market formation

**Key question** What are the appropriate tools to form new markets?

**Rationale** Find the most appropriate tools to help form lead markets

**Sub-question**

- What is the content of policy papers for new markets for emerging technologies?

### Innovation system function: Resources mobilization

**Key question** What are the resources needed and how can they be obtained?

**Rationale** Find out what is needed and how national resources can be mobilized

**List of sub-questions**

- Which financial resources were most effectively used in the previous cycle (evidence from the evaluation part of the cycle)?
- What is the size of resources needed to become competitive in each emerging technology?
- What type of resources can be mobilised outside the national public funding (EU, foundations)?
- For which technologies are companies successfully attracting private funding?
- Is there a gap between supply and demand?

## POLICY CYCLE STAGE: EVALUATION

### Innovation system function: Entrepreneurial activity, Knowledge creation, Knowledge diffusion through networks, and Guidance

**Key question** What are the results, outcomes and impact of projects and programmes?

**Rationale** Find out potential problems and corresponding perceptions

#### List of sub-questions

##### Unit of analysis: projects

- How were citations in publications associated to projects compared to scientific discipline average?
- How many presentations in top scientific conferences? (distinction between specialization<sup>3</sup>ry, basic and applied research)
- How many people were trained as researchers? As technicians?
- How many new jobs were created after the project (research and beyond) within the country?
- How many patents were produced (applications/grants) in the European Patent Office and in the US PTO? How many were used inhouse? How many were licenced? What royalties did they produce?
- What new products have been developed? How many were launched in the market? What was their contribution to turnover, profits, exports, taxes?
- How many new production processes have been developed? How many were launched in the shopfloor? What was their impact on productivity?
- How many new algorithms, registered and in-exploitation software were developed? Used?
- What has been the leverage of national support measures for EU competitive funding?

##### Unit of analysis: programmes

- What was the research employment created?
- What was total employment created?
- What were the private returns on investment?
- What were the social returns on investments? Taxes generated?
- What are the multiplication effects of each programme?
- Has the sectoral specialization of the research system changed towards higher value added activities?
- Has the sectoral specialization of the productive system changed towards higher value added activities?
- Which societal challenges have been addressed (living lab specific/delineated)?

### Innovation system function: Market formation

**Key question** Have the regulation and public procurement been adequate?

**Rationale** Find out regulatory and procurement outcomes

#### List of sub-questions

- Has the regulation adopted facilitated the creation/access to new markets?
- Has public procurement of innovation produced effective results? Has it created lead markets?