

August 2022

National Innovation Pathway Round-up

FINLAND



National Innovation Pathway Round up – Finland

Introduction

Mission Innovation members agreed to develop **National Innovation Pathways (NIPs)** to describe and build collective understanding on how each member plans to pioneer clean energy technologies to meet their climate and energy goals.

Each member has their own approach to developing and identifying innovation needs and priorities, with some already having undertaken extensive strategy development. The Roundup provides a **single location of summary information on countries' innovation priorities** utilizing existing sources of information so members and interested stakeholders can easily find key information of interest.

All MI members were asked to provide answers to a survey (Annex A) providing as much information as possible, with some questions being optional. The survey asked questions relevant to each element of the National Innovation Pathway described in the Joint Launch Statement:

1. Energy transition scenarios and priority national-level energy innovation needs / priorities until at least 2030;
2. Strategies or national-level plans to address these energy innovation needs / priorities, including institutional design and working internationally
3. Information on how Members will measure innovation outcomes and innovation ecosystem developments;
4. Members' preferred modes and methods of collaboration; and
5. Any further supporting evidence that was used to identify the energy innovation needs / priorities, such as analysis of domestic competitiveness, economic opportunities or national level climate and clean energy plans.

Members will be asked to refresh this document annually if significant changes to national policy have taken place.

1. Clean Energy Innovation Strategy

1.1 Summary

Clean Energy Innovation Strategy of Finland is presented as integrated part of the national Climate and Energy Strategy.

Summary of the strategy includes strategic priorities, such as:

- Finland aims at 4 % spending to RDI of GDP. The target is not sector specific.
- Clean innovations and solutions are developed and used on a wide scale and to enable a technology-neutral, carbon-neutral economy.
- Priorities of the development of new technology and the commercialization of innovations include, among others, energy infrastructure, new energy technologies, hydrogen and power-to-X solutions, electrification and circular economy.
- We actively participate in selected international cooperation forums, such as Clean Energy Ministerial (CEM) and Mission Innovation. The focus areas of influence and cooperation are
- matters related to energy system integration, hydrogen and the circular economy.

1.2 Methodology

The strategy was prepared by the government officials based on various other reports and working group's work including stakeholder engagement.

FINLAND

Table 1: RELEVANT DOCUMENTS AND POLICIES

Document or policy name	Description of the document or policy	Specific outcomes, goals or targets identified in the document or policy	Year	Web Link(s)
National Climate and Energy Strategy	Defining climate and energy related policy targets and measures as well as background information.	The define activities to achieve climate neutrality by 2035.	2022	https://valtioneuvosto.fi/paatokset/paatos?decisionId=0900908f807c35c1

FINLAND

2. Clean Energy Innovation Priorities

2.1 Overview of Clean Energy Innovation Priorities

Table 2: CLEAN ENERGY INNOVATION PRIORITIES

Innovation priority	Focus of innovation activity (tick all that apply)	Targets/Goals (if applicable)	Technologies or topics of interest	Total RD&D funding allocated, (include budget years where applicable)	Planned demonstration Investments (include budget years and indicate if domestic or international spending where possible)	Links to relevant reports or plans
<i>Example 1:</i> Hydrogen	R Early-stage research R Applied research R product development R Demonstration R Commercialisation Other:	1000 MW electrolyzers by 2030	Electrolysers Hydrogen storage	Years 2022–2023: - 300 MEUR hydrogen specific funding - approx. 1000 MEUR energy technology funding including hydrogen	Total investment pipeline is approx. 1000 MEUR	https://valtioneuvosto.fi/paatokset/paatokset?decisionId=0900908f807c35c1
Renewable energy and	R Early-stage research R Applied research R product development	Share of renewable energy 51 % by 2030,	New energy technologies	years 2022–2023 - approx. 1000 MEUR energy		bfa9bd08-e83a-470d-9894-

FINLAND

energy technology	R Demonstration R Commercialisation Other:	measured of final consumption.		technology funding including hydrogen		c4c4be9f7a8e.pdf (ecnu.edu.cn)
<i>Batteries</i>	R Early-stage research R Applied research R product development R Demonstration R Commercialisation Other:	The national battery strategy's vision is that the Finnish battery cluster in 2025 will be a pioneer that produces know-how, innovations, sustainable economic growth, well-being and jobs in Finland.	Batteries	Year 2022: 50 MEUR		https://julkaisut.valtioneuvosto.fi/handle/10024/162684

FINLAND

3. National Energy Innovation Ecosystem (Optional)

Table 3: CLEAN ENERGY INNOVATION INSTITUTIONS

Institution name	Description of role	Innovation priority(ies) that they contribute to (taken from Table 2)	Description of funding modalities (e.g. grants, co-investment, where in tech development cycle focused)	Links
Ministry of Science and Technology of the People's Republic of China	Prepares and supervises the implementation of major national science and technology projects, coordinates the R&D and innovation of key common technologies, cutting-edge leading technologies, modern engineering technologies and disruptive technologies, and take the lead in organizing major technology research and application demonstration of achievements.		Takes the lead in establishing a unified national science and technology management platform and a fund coordination, evaluation and supervision mechanism for scientific research projects. Coordinates and manages the central financial science and technology plan (special projects, funds, etc.) and supervise the implementation.	https://service.most.gov.cn/kjh_tztg_all/20220303/4868.html

FINLAND

Annex A – National Innovation Pathway Roundup Survey Questions

1.1 Summary: Please provide a summary of your national clean energy innovation strategy i.e. the overall policies, framework and/or goals that help to define the innovation priorities you will describe in Section 2. We recommend including information about your national climate or energy targets (such as NDCs or renewable energy targets) as well as national innovation strategies and policies. You can share links to relevant documents in Table 1.

1.2 Methodology: Please describe the methodology to develop your national clean energy innovation strategy such as analysis, modelling or stakeholder engagement and include any links to relevant documents in Table 1. This will be used to help share learning between members.

2.1 Overview of Clean Energy Innovation Priorities: Please provide a list of your national clean energy innovation priorities (i.e. specific technologies, sectors or needs). Please complete Table 2 to provide information about where you are focusing in the innovation cycle for each priority; any targets or goals; RD&D interests; current allocated budgets (including specific demonstration funding) and links to relevant strategies or reports. In the text box following please provide a brief description of how you plan to respond to each innovation priority in the coming years, such as through future plans over the next 3-10 years to mobilise further investments for innovation, launch new major programmes and timelines for major demonstration projects.

2.2 Tracking Progress: Please describe how you plan to measure progress towards addressing your identified energy innovation priorities. Please describe any governance processes to manage and review energy innovation efforts and, where able, please list

FINLAND

tracking indicators that are commonly used (e.g. such as patents, publications, rates of company formation, follow-on capital and private co-investment, technology performance upgrades).

3. Private Sector Engagement: Please can you describe your strategic approach and priorities to engagement with the private sector to address the clean energy innovation priorities identified in section 2. This could include for instance prioritising co-funding of RD&D initiatives; incubator/accelerator programs that are funded (in part or fully) by the private sector; tax credits and other fiscal incentives; initiatives that the private sector can engage with, grants, de-risking instruments such as loan guarantees etc.

4. International Collaborations: Please describe your strategic approach to international collaboration to tackle your clean energy innovation priorities (e.g. do you have an international strategy, or particular types of collaboration you are prioritising).

5. National Energy innovation Ecosystem: Please provide an overview of your national institutions, funders and organisations and describe how they contribute to tackling the innovation priorities identified in Section 2. Please either provide this information in the box or complete Table 3.

6. Further Supporting Information: Please add below any further information about your national energy innovation needs or approaches to tackling these that has not been covered above.



Mission Innovation – Catalysing Clean Energy Solutions For All