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FINANCIAL FRAMEWORK PARTNERSHIP AGREEMENT 2021/METROLOGY/01

European Partnership on Metrology ANNUAL REPORT
2024 – Part B
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Glossary

BoD	EURAMET Board of Directors
BIPM	Bureau International des Poids et Mesures
CEN	European Committee for Standardization
CENELEC	European Committee for Electrotechnical Standardization
CERN	The European Organization for Nuclear Research
CIC	Communication and Impact Coordination
CIGRE	International Council on Large Electric Systems
CSA	Coordination and Support Action
CSP	Coordination and Support Project
DI	Designated Institute
DPIA	Data Protection Impact Assessment
EA	European Co-operation for Accreditation
EC	European Commission
EMN	European Metrology Network
EMPIR	European Metrology Programme for Innovation and Research
ETSI	European Telecommunications Standards Institute
EU	European Union
EUROLAB	European Federation of National Associations of Measurement, Testing and Analytical Laboratories
FFPA	Financial Framework Partnership Agreement
FO	Finance Officer
FUN	Fundamental
FWCI	Field-weighted Citation Impact
GRD	Green Deal
GS	General Secretary
HEU	Horizon Europe
HLT	Health
IAC	Internal Audit Committee
IAEA	International Atomic Energy Agency
ICNIRP	International Commission on Non-Ionizing Radiation Protection
IEC	International Electrotechnical Commission
IEM	Integrated European Metrology
IND	Industry
IP	Intellectual Property
ISO	International Organization for Standardization
IT	Information Technology
JRP	Joint Research Project
KPI	Key Performance Indicator
MIM	Mutual Insurance Mechanism
MSU	Management Support Unit
NEN	Netherlands Standardization Institute
NMI	National Metrology Institute
NPL	National Physical Laboratory
NRM	Normative
PAD	Project Administrative Data
PRT	Potential Research Topic

RIA	Research and Innovation Action
RPT	Research Potential
SDG	United Nations Sustainable Development Goal
SDO	Standards Developing Organisation
SME	Small and Medium-Sized Enterprise
SRA	Strategic Research Agenda
SRT	Selected Research Topic
SSH	Social Sciences and Humanities
TC	EURAMET Technical Committee
TP	Targeted Programme
TRL	Technical Readiness Level
UK	United Kingdom
WHO	World Health Organization

1 Implementation of the annual work programme and the resulting activities

1.1 Definition of the area of the programme to be opened

The areas of the programme in broad terms (topics) to be opened in each year were decided by the Partnership Committee at the beginning of the programme, along with an indicative budget for each topic, and are available from https://metpart.eu/. While the budget may be rebalanced between topics in any year, it is not expected that the sequence of calls will be changed. Five topics were identified for the 2024 Call Target Programmes:

- Green Deal
- Digital Transformation
- Metrology for Pre- and Co-normative Research
- Research Potential
- Impact and Communication

The first four topics were Research and Innovation Actions implemented in two stages, while the last topic was a Coordination and Support Action implemented in one stage.

To encourage input from stakeholders, EURAMET consulted the Metrology Partnership Steering Group and the relevant European Metrology Networks (EMN) and Technical Committees to appropriately orient the Target Programmes for Green Deal, Digital Transformation, Metrology for Pre- and Co-normative Research, and Research Potential. This information, together with Call Scopes and EURAMET's Strategic Research Agenda for Metrology in Europe were published with the Stage 1 call.

To encourage input from European Standardisation Organisations, EURAMET consulted with:

- CEN
- CENELEC

in order to collect standardisation research needs and support the preparation of the 2025 call.

The results of this consultation identified 19 priority standardisation needs which were published with the Stage 1 call and should support the development of the project in the 2025 REGULATION call.

The Scope documents for the 2024 Calls are reproduced in Annex 2.

1.2 Call budget, national funding and Union contribution

The total budget for the 2024 calls was 51 M€ in EU contribution. In addition, the necessary budget of the participating states cash contribution for the administration of the programme can be associated with the call. The initial breakdown of the budget between the TPs was:

- Green Deal – 31,5 M€
- Digital Transformation – 10 M€
- Metrology for Pre- and Co-normative Research – 5 M€
- Research Potential – 3 M€
- Impact and Communication CSA – 1,5 M€

In terms of EU Contribution.

1.3 Call announcement

1.3.1 Stage 1: Green Deal, Digital Transformation, Metrology for Pre- and Co-normative Research, and Research Potential

The Stage 1 for the Target Programmes Green Deal, Digital Transformation, Metrology for Pre- and Co-normative Research, and Research Potential was launched on 10th January 2024 and closed on 19th February 2024.

The announcements were made through the EURAMET website and through various other electronic media like social media as well as individual emails to NCPs and other known networks like:

- EURAMET community, including Partnership Committee members, EURAMET TC and EMN Chairs, EURAMET Contact Persons
- EURAMET Research Council members
- Stakeholder communities, such as:
    - EA (European Co-operation for Accreditation)
    - Eurachem
    - Eurolab

1.3.2 Stage 2: Green Deal, Digital Transformation, Metrology for Pre- and Co-normative Research, and Research Potential

The Stage 2 call was launched on 26th June 2024 and closed on 30th September 2024, addressing 50 topics which had been distilled from the best of the ideas received in Stage 1. For each of the topics published a supporting document was provided identifying the need or opportunity, the scientific objectives and potential impact.

The announcements were made through the EURAMET website and EURAMET also announced the launch of the call to:

- EURAMET community, including Partnership Committee members, EURAMET TC and EMN Chairs, EURAMET Contact Persons
- EURAMET Research Council members
- Stakeholder communities, such as:
    - EA (European Co-operation for Accreditation)
    - Eurachem
    - Eurolab

1.3.3 One-stage call on Communication and Impact Coordination CSA

This one-stage call was launched on 26th June 2024 together with the Stage 2 Call for Joint Research Projects and closed on 30th September 2024. A supporting document was provided identifying the need, objectives, and potential impact.

The announcement of the Call was made together with the Stage 2 Calls on Green Deal, Digital Transformation, Metrology for Pre- and Co-normative Research, and Research Potential.

1.4 Call 2024 Stage 1 – Potential Research Topics (PRTs)

The topic areas Green Deal, Digital Transformation, Metrology for Pre- and Co-normative Research, and Research Potential were implemented in two stages. EURAMET launched Stage 1 for PRTs requesting research needs, on 10th January 2024 and the call closed on 19th February 2024.

The aim of Stage 1 was to identify challenges and problems and provide ideas to help EURAMET best prioritise the most important topics to address and make best use of the resources available in

the NMI and DI community. Stage 1 was open to any person or organisation from anywhere in the world. The process was web based and used a simple Word template to ensure ideas were expressed in an appropriate and consistent way. Proposers provided administrative information online and uploaded their PRT as a Word file. Submissions were automatically acknowledged by e-mail.

1.4.1 Stage 1 submissions received

In total, 106 eligible Stage 1 submissions were received:

- Green Deal: 56
- Digital Transformation: 15
- Pre- and Co-normative Research: 21
- Research Potential: 14

All were subject to a very simple but defined eligibility check, mainly to simply identify any repeat submissions or inadequate submissions, or submissions entirely out of scope. Altogether 149 Stage 1 PRT submissions were received, of which 43 were superseded with later versions by the submitters (those submitting before the deadline had the opportunity to make changes and resubmit up until the deadline, thus superseding their earlier submission), and no submissions failed to meet the eligibility criteria.

The online web page required proposers to identify the most appropriate classification against a list, with the option of “other” for cross cutting topics or topics which the proposers felt did not fall easily into one of the predefined classifications. The classification was only used to make it more likely that similar topics were reviewed together.

1.4.2 Stage 1 admissibility, eligibility and prioritisation

Having completed the admissibility and eligibility checks, EURAMET revisited the classification. A check was made to ensure that the proposers had allocated their proposal to the appropriate classification. The classifications were also revisited to ensure they best captured the actual submissions received. Excel workbooks were prepared for the Partnership sub-committees with instructions, statistical data and collated information on all of the submissions, and pre-programmed cells to enable initial views and comments to be captured.

The PRTs that passed the eligibility sift were forwarded to the Partnership sub-committees. The subcommittee members initially worked in pairs, each pair responsible for the initial review of PRTs within two or three classifications, thus sharing the workload. Each sub-committee member was provided with an individual Excel workbook to capture initial impressions and comments. These individual workbooks were then sent back to the MSU where the inputs were collated into a single consolidated Excel workbook for each Call topic.

The consolidated workbooks were then redistributed such that all members of the relevant Partnership sub-committees could see all initial PRT comments, i.e. their own and every other member’s comments in preparation for the sub-committee meetings. At this stage the review was widened with sub-committee members free to review all PRTs and prepare further comments. This whole process took place from late February to early April 2024, culminating in meetings of the Sub-Committees. The Sub-Committee Capacity Building held a virtual meeting on Wednesday 3rd April (morning) to review the Research Potential PRTs. Sub-Committee Research held a face-to-face meeting from Wednesday 3rd April (afternoon) to Friday 5th April to review the PRTs on Green Deal, Digital Transformation, and Metrology for Pre- and Co-normative Research. The results from the meetings were a consensus view to publish a total of 50 Selected Research Topics (SRTs) at Stage 2; 21 for Green Deal, 10 for Digital Transformation, 10 for Metrology for Pre- and Co-normative Research, and 9 for Research Potential.

The key criteria in the selection of the topics were alignment with the scope of the call, that the stakeholder need was clearly identified and supported, and knowledge that relevant expertise and facilities existed within EURAMET to address those needs.

Following the meeting, a list of the titles of the SRTs was released to the Partnership Committee to allow appropriate partnering meetings to be arranged following the launch of Stage 2. The first drafts of the Supporting Documents describing a SRT were prepared by the MSU, essentially being a short document for each topic to be published at Stage 2 describing the background, objectives and potential impact. The information and much of the text for the supporting documents were drawn from the relevant PRTs. These drafts were then reviewed by the Partnership sub-committee and iterated until deemed acceptable. The objectives outlined in each SRT were presented to the full Partnership Committee on 3rd June. The Partnership Committee approved the SRT objectives and concluded this part of the process with a formal decision to support 50 SRTs and associated objectives.

The calls under the European Partnership on Metrology differ from those of Horizon Europe. In the annual Work Programme, only the general call topic is published initially. Detailed information on the Selected Research Topics is then released on the metpart.eu portal when the Call for Proposals is launched in Stage 2. Together, the annual Work Programme and the Selected Research Topics provide the comprehensive documentation necessary for proposal development. This process enables a swift response to stakeholder needs by gathering Potential Research Topics and using them to formulate the Selected Research Topics, which complement the Work Programme.

When considering the above process, it would be rather misleading to imagine the process as one of prioritising one PRT over another. Rather it was a case of reviewing all PRTs in a given area, establishing a list of all of the needs, scientific and technological objectives and potential impacts expressed, and then identifying which of those ideas could be addressed most effectively by the metrology research community. Thus, in each area all of the objectives from all relevant PRTs were assembled, and prioritised. The process is better thought of as a prioritisation of ideas rather than prioritisation of particular PRTs, although the genealogy of all Stage 2 topics was carefully captured ensuring the traceability of each of the Stage 2 topics to its “parent” contributing PRTs. This approach ensured efforts would be focused most appropriately but made the preparation of the supporting documents challenging (e.g. as it was not simply a case of choosing PRT X over PRT Y and then editing the text of PRT X). The topics were assembled not only to bring the best resources from EURAMET to bear on the identified needs, but also to promote closer working between different EURAMET members and across technical disciplines by combining objectives in single topics that could only be addressed through collaboration.

1.5 Call 2024 Stage 2 – Joint Research Projects (JRPs)

Stage 2, a dedicated call for JRPs was launched on 26th June 2024 and was closed on 30th October 2024. This call opened the 50 SRTs for Green Deal, Digital Transformation, Metrology for Pre- and Co-normative Research, and Research Potential, each with a supporting document identifying the need or opportunity, the scientific objectives and likely impact.

The following detailed EURAMET documentation was produced or updated, approved and published with either the Stage 1 call and / or the Stage 2 call:

- Guide 1: Admissibility and Eligibility for the potential Partnership on Metrology Calls
- List 1a: List of EURAMET NMIs and DIs
- List 1b: Country Information
- Guide 2: Submitting a Potential Research Topic
- Template 2: PRT template
- Guide 3: Prioritising Potential Research Topics
- Guide 4: Writing Joint Research Projects (JRPs)
- List 4: Checklist for Template 4
- Template 4: JRP protocol
- Guide 5: Submitting administrative data for Partnership projects

- Template 5: Project Administrative Data (PAD)
- List 5: Checklist for Template 5
- Guide 6: Evaluating Partnership Proposals
- Form 4a: Ethics Form

1.6 Call 2024 One-Stage – Coordinating and Support Projects (CSPs)

This one-stage call which was a Coordinating and Support Action for Coordination and Support Project proposals addressing Communication and Impact Coordination was launched on 26th June together with the Stage 2 Call for Joint Research Projects and closed on 30th September. A supporting call scope document was provided identifying the need, objectives, and potential impact, explaining that research and development activities were not eligible to be funded in the Communication and Impact Coordination CSA. Instead, the Communication and Impact Coordination CSA has a clear focus on communication activities through impact supporting tasks.

In addition to the EURAMET documentation listed above, dedicated documents on writing Coordination and Support Projects (CSPs) were provided to the applicants.

- Guide 7: Writing Coordination and Support Projects (CSPs)
- Template 7: CSP protocol

1.7 Admissibility and eligibility of proposals

1.7.1 Green Deal

Following closure of Stage 2 a total of 21 JRP proposals for Green Deal were received. There was one proposal for each SRT topic published although more than one proposal per topic was possible. All JRP proposals underwent admissibility and eligibility checks by the MSU against a pre-defined checklist. All proposals submitted were deemed eligible.

1.7.2 Digital Transformation

Following closure of Stage 2 a total of 8 JRP proposals for Digital Transformation were received. There was one proposal for each SRT topic published except for 2 SRTs in Digital Transformation (d09, d11) although more than one proposal per topic was possible. All JRP proposals underwent admissibility and eligibility checks by the MSU against a pre-defined checklist. All proposals submitted were deemed eligible.

1.7.3 Metrology for Pre- and co-normative research

Following closure of Stage 2 a total of 10 JRP proposals for Metrology for Pre- and co-normative research were received. There was one proposal for each SRT topic published although more than one proposal per topic was possible. All JRP proposals underwent admissibility and eligibility checks by the MSU against a pre-defined checklist. All proposals submitted were deemed eligible.

1.7.4 Metrology for Research Potential

Following closure of Stage 2 a total of 8 JRP proposals for Research Potential Metrology were received. There was one proposal for each SRT topic published except for 1 SRT in Research Potential Metrology (r07) although more than one proposal per topic was possible. All JRP proposals underwent admissibility and eligibility checks by the MSU against a pre-defined checklist. All proposals submitted were deemed eligible.

1.7.5 Coordination of Impact and Communication supporting metrology (CSA)

Following closure of the one-stage CSA call 1 CSP proposal for Coordination of Impact and Communication supporting metrology was received although more than one proposal was possible. This proposal underwent admissibility and eligibility checks by the MSU against a pre-defined checklist. The submitted proposal was deemed eligible.

1.8 Referees

In parallel with the 2024 calls the MSU and the Partnership Deputy Chair and Chair established the list of independent referees. All referees were drawn from EURAMET's Referee Database which was established in 2014. The database contains 362 potential referees. The primary and overriding criteria for the selection of the referees were scientific and technical competence (and their independence from the proposers). Within that constraint the best balance of gender, nationality, background etc was sought. This process involved the establishment of a larger than needed initial pool of competent referees from which the MSU checked availability, and then provided there was choice, followed a defined set of criteria aimed at achieving the best balance.

It was assumed that many if not most NMIs and DIs in Europe would participate in the programme so even at this stage no referees were targeted from these organisations. For all referees a more detailed check for conflict of interest was made at each stage of the process to ensure that referees were not drawn from organisations involved in the submission of proposals. Those experts passing the sift were entered into the pool which eventually contained 305 referees. The experts in the pool were then contacted to establish their willingness to act as referees for EURAMET, their availability and their expectation of being independent from any proposal. The terms and conditions offered in terms of expenses etc closely followed those used by the Commission for Horizon Europe.

Furthermore, referees in the pool who had indicated they were available were provided with the relevant supporting documents and asked to "self-check" their suitability. They responded by e-mail indicating one of three possibilities for each SRT:

- Able to read a proposal likely to be received against the SRT as a specialist
- Able to read a proposal likely to be received against the SRT as a generalist
- Unable to read a proposal likely to be received against the SRT

After these replies the "pool of available" referees included 191. This allowed the establishment of the boundary conditions of available and competent referees with a very high degree of confidence that there would be "no surprises". The aim was for at least three referees allocated to each proposal and ideally a maximum of three proposals allocated to each referee.

In the event a total of 75 referees were used to evaluate all proposals: 14 referees for Digital Transformation, 29 referees for Green Deal, 15 referees for Normative, 13 referees for Research Potential and 4 referees for the Coordination of Impact and Communication supporting metrology, with some referees being used for more than one thematic area.

Some redundancy had been deliberately built in the process in case the MSU checks or the declaration by the referees identified real or potential conflicts of interest requiring them to drop out ahead of the evaluation. The final statistics for the referees who attended the review conferences are given below.

1.8.1 Overall statistics (referees):

Gender: 54 men (72 %), 24 women (28 %)

22 Nationalities, Belgium (3), Bosnia and Herzegovina (1), Croatia (4), Czechia (1), Cyprus (1), France (6), FYR Macedonia (1), Germany (5), Greece (3), Ireland (1), Israel (1), Italy (10), Netherlands (4), Other (3), Poland (6), Portugal (3), Romania (2), Serbia (4), Slovenia (1), Spain (4), Türkiye (1), United Kingdom (10).Industry vs. academia: the categories of organisation defined include: Consultancy firms, Higher Education Establishments, Non-research Commercial sector including SMEs, Non-research International Organisations (Association of States), Non-research Public Sector, Private / Commercial Research Centres, Private Non-profit Research Centres, Public Research Centres, Other and No information given.

The attending referees came from:

- 2 Consultancy firms (2.7 %)
- 44 Higher Education Establishments (58.7 %)

- 5 Non-research Commercial sector including SMEs (6.7 %)
- 2 Non-research International Organisations (Association of States) (2.7 %)
- 8 Private / Commercial Research Centres (10.7 %)
- 1 Private Non-profit Research Centre (1.3 %)
- 10 Public Research Centres (13.3 %)
- 3 Other (4 %)

The list of referees was published on 7 January 2025 on www.euramet.org.

1.9 Evaluation of proposals

The following EURAMET documentation was provided to referees:

- Call 2024 Budget and Features
- Guide 4: Writing Joint Research Projects (JRPs)
- Guide 6: Evaluating Partnership Proposals
- Form 6a: Referee Code of Conduct and Declaration
- Form 6b: Payment to Referees
- Form 6c: JRP Evaluation
- Form 6d: CSP Evaluation
- Guide 7: Writing Coordination Support Projects (CSPs)

Referees were asked to confirm by email that they were able to agree to both the “Code of Conduct for Referees” and the “Declaration of Confidentiality and Any Conflict of Interest” which are parts of Form 6a and referenced in Guide 6. A signed copy of Form 6a was sent to the MSU by each referee prior to the evaluation of proposals as a prerequisite for the referee’s participation.

The Forms 6c & 6d followed the evaluation criteria in the Partnership work programme. The evaluation criteria were:

- Excellence.
- Impact
- Quality and efficiency of the implementation

Marking was against each evaluation criterion between 0 and 5. The threshold for individual evaluation criteria was 3 and the overall threshold, applying to the sum of the three individual scores was 10. If a proposal scored less than this, it was considered of insufficient quality to be funded.

The Partnership Committee had decided the weighting for the evaluation criteria for Call 2024. Table 1 shows the specific weightings for the evaluation criteria for the Call 2024.

Table 1: Weightings for the evaluation criteria for the 2024 calls

Call/Evaluation criteria weighting	Excellence	Impact	Implementation
Normative	1.25	1.75	1
Green Deal	1.25	1.75	1
Digital Transformation	1.25	1.75	1
Research Potential	1.25	1.5	1.25
Coordination of Impact and Communication supporting metrology	1	1.25	1.75

1.9.1 Review conferences for Joint Research Project proposals

The Digital Transformation, Green Deal, Normative, and Research Potential Joint Research Project proposals were each evaluated at a review conference. For the review conference the process of evaluation involved the referees receiving the proposals assigned to them several weeks ahead of the review conference (although all of the remaining proposals within a TP were made available to them as the possibility existed of needing a debate in plenary session). The referees were requested to review and make their own preliminary informal marking. Referees were not required to submit these marks prior to the review conference as experience has shown that often the referees modify their views following the face-to-face discussions at the review conference.

The review conferences took place in Louvain-la-Neuve, Belgium on the dates below;

REVIEW CONFERENCE	DATES
NORMATIVE	Tuesday 5 (DAY 1) & Wednesday 6 (DAY 2) November
FUNDAMENTAL METROLOGY	Thursday 7 (DAY 1) & Friday 8 (DAY 2) November
INDUSTRY	Monday 11 (DAY 1) & Tuesday 12 (DAY 2) November
RESEARCH POTENTIAL	Wednesday 13 (DAY 1) & Thursday 14 (DAY 2) November

At each review conference the referees met a representative of the proposing consortia (normally the person who would become the coordinator should the proposal be successful), enabling referees to clarify their understanding of the proposed project and to test the various claims made prior to marking the JRP proposals.

Key elements of each 2-day review conference included:

- Separate guidance briefings for the referees and JRP proposers,
- A poster session for the referees with the JRP proposers,
- Discussion between the referees of their initial thoughts based on their individual remote prior reading and their views following the presentation session,

- Development of formal questions by the referees to be put to the JRP proposers,
- Formal Q&A session with the JRP proposers,
- Marking of the JRP proposals,
- A final plenary session to address any issues arising and to finalise the ranked list.

The full agenda for the review conference is given in Annex 2.

The referees were split into pre-defined groups to allow efficient and effective discussion of the proposals. Each of the proposals in the group was marked within the group by consensus, however the bulk of the input into the discussions came from a minimum of three referees formally assigned to the proposal. Although the discussions amongst the referees involved robust debate, they were able to reach consensus in all cases without any specific difficulties. All referees within the group declared agreement to the final marking books and overall, there were no problems encountered with this process. Indeed, the approach allowed wide and effective debate on the relative merits of the proposals.

To ensure consistency between the scores from different groups of referees, the training of the EURAMET facilitators concentrated on leading their referees to consensus opinions based on the scoring guidance:

0	The proposal **fails** to address the criterion or cannot be assessed due to missing or incomplete information
1	**Poor:** the criterion is inadequately addressed or there are serious inherent weaknesses
2	**Fair:** the proposal broadly addresses the criterion but there are significant weaknesses
3	**Good:** the proposal addresses the criterion well but a number of shortcomings are present
4	**Very Good:** the proposal addresses the criterion very well but a small number of shortcomings are present
5	**Excellent:** the proposal successfully addresses all relevant aspects of the criterion. Any shortcomings are minor

As marks were agreed between the referees, the facilitators would keep referring to these definitions. To further promote consistency between the groups the Deputy Programme Manager moved between the groups collecting scores as they developed and listening to the debates. Where a group appeared to be scoring out of line with other groups, questions were asked of the referees against this guidance – prompting them to defend their scores.

The final discussions, where referees from all groups came together to review and approve the single ranked list, demonstrated that scoring had been consistent across the groups.

1.9.2 Coordination of Impact and Communication supporting metrology Evaluation Meeting

The Coordination of Impact and Communication supporting metrology proposals (also termed Coordination Support Projects (CSP)) were evaluated at a 1-day evaluation meeting which took place in Louvain-la-Neuve, Belgium on Sunday 10 November.

The process of evaluation involved the referees receiving the proposals assigned to them several weeks ahead of the evaluation meeting. The referees were requested to review and make their own preliminary informal marking. Referees were not required to submit these marks prior to the evaluation meeting as experience has shown that often the referees modify their views following face-to-face discussions.

Key elements of the evaluation meeting included:

- Separate guidance briefings for the referees and CSP proposers,
- A presentation session, followed by informal questions and answers, between the referees and the CSP proposers,
- Marking of the CSP proposals,
- A final plenary session to address any issues arising and to finalise the ranked list.

The full agenda for the evaluation meeting is given in Annex 2.

Each of the proposals was marked within the group by consensus. Although the discussions amongst the referees involved robust debate, they were able to reach consensus in all cases without any specific difficulties and all referees signed the final marking workbooks.

To ensure consistency between the scores from referees, the training of the EURAMET facilitators concentrated on leading their referees to consensus opinions based on the same scoring guidance as detailed above in 1.9.1.

As marks were agreed between the referees, the facilitator would keep referring to these definitions. The final discussions, where referees approved the final ranked list, then demonstrated that scoring had been consistent.

1.9.3 Independent observation of the evaluation process

The review conferences and evaluation meeting were attended by an independent observer Arja Kallio, whose appointment had been agreed between EURAMET and the European Commission. Arja had access to all documentation, all communications with the referees, and attended the review conferences and evaluation meeting with full access to all areas. She also had the freedom to interview proposers, referees and EURAMET staff. She was asked to provide a report in two parts; the first part to report on the correctness of the process as implemented and the second part to offer any suggestions for improvement for EURAMET. The approach was deliberate, allowing for the initial section to be promptly released alongside the Call results, while enabling more deliberate consideration for the second part. A positive evaluation report was received and is provided in Annex 2.

1.9.4 Partnership Committee's Decision on projects to be funded

The Partnership Committee is the body within EURAMET charged with the overall responsibility for the Partnership. The Partnership Committee consists of one representative from each of the 24 participating countries, plus some standing invitees. Membership of the Partnership Committee is published on the EURAMET website. Voting within the Partnership Committee recognizes the significantly varying levels of national commitment but uses a "square root" system to ensure the decision-making process is not dominated by the representatives from the countries with larger national contributions.

On Tuesday 19 November and Wednesday 20 November, immediately following the review conferences, the Partnership Committee met and formally endorsed the recommendations of the referees without change.

The referees deemed 6 of the 8 Digital Transformation proposals, 20 out of 21 Green Deal proposals, 8 out of 10 Metrology for Pre- and Co-normative Research proposals, 7 out of 8 Research Potential proposals, and the 1 Coordination of Impact and Communication supporting metrology proposal of suitable quality for support. Neither the referees nor proposers had identified any significant duplication of work between proposals likely to be funded, and so there were no changes to be made to the size of individual projects and the choice faced by the Partnership Committee was merely where to draw the line in each list.

The Committee held various votes on how to distribute the budget for the year between the Target Programmes and in the end decided to fund the top 5 Digital Transformation proposals, top 11 Green Deal proposals, top 3 Metrology for Pre- and Co-normative Research proposals, top 3 Research Potential proposals and the 1 Coordination of Impact and Communication supporting metrology CSA proposals. These proposals were sent for ethics screening with a view to being funded.

The Ranked Lists are shown in Table 2 below.

Table 2: Ranked List of Call 2024 projects

NRM ranked list			
1	24NRM01	JRP-n04	FLASH-DOSE
2	24NRM02	JRP-n05	ConcenSus
3	24NRM03	JRP-n01	MFMET II
4		JRP-n03	StanBioMech
5		JRP-n06	StaRIndent
6		JRP-n09	SamCAs
7		JRP-n02	MetroNoME
8		JRP-n07	PV-Emerge
9		JRP-n08	Stan4Dim
10		JRP-n10	ACMOS

DIT ranked list			
1	24DIT01	JRP-d04	APULEIO
1	24DIT02	JRP-d07	DINAMO
1	24DIT03	JRP-d03	A++SmartML
1	24DIT04	JRP-d01	ScanClouDT
5	24DIT05	JRP-d08	GridData
6		JRP-d02	VIRTUALM
7		JRP-d05	PROMIS
8		JRP-d06	DigiStar

GRD ranked list			
1	24GRD01	JRP-v16	MetNH3Energy
1	24GRD02	JRP-v15	MetZeroPol
1	24GRD03	JRP-v17	MetHIR
1	24GRD04	JRP-v18	SOLiD-PV
5	24GRD05	JRP-v10	ELITE
5	24GRD06	JRP-v07	MetCTG
7	24GRD07	JRP-v06	CryoMet
8	24GRD08	JRP-v04	GridForm
9	24GRD09	JRP-v02	HyMetBat
9	24GRD10	JRP-v19	SmartGasNet
11	24GRD11	JRP-v13	MetroHyVe3
12		JRP-v01	PaRaMetriC2
13		JRP-v03	SeaCO2Met
14		JRP-v05	MetCCUS 2
14		JRP-v08	MetEuro7PEMS
16		JRP-v23	MetLCSN
17		JRP-v11	MetEOC 5
18		JRP-v14	MeLiPon
19		JRP-v20	MeSoMo
20		JRP-v12	ET
21		JRP-v09	Greentrans

RPT ranked list			
1	24RPT01	JRP-r05	ETrain
2	24RPT02	JRP-r01	MetroMag
3	24RPT03	JRP-r02	A2TM
4		JRP-r08	D4Temp
5		JRP-r04	NanoNeed
6		JRP-r03	TraceAC
7		JRP-r06	DevHDC
8		JRP-r09	CompTool

CIC ranked list			
1	24CIC01	CSP-c01	Comms4Net

The total EU contribution allocated was 51 011 529 € of which 19 870 154 € was for non-NMI and DI participants (39 %). 218 439 € of the allocated funding was transferred from previous years. These figures may be adjusted as the budgets are examined in Grant Preparation.

The full names of the selected projects from Call 2024 are shown in Table 3.

Table 3: Full names of selected projects from the 2024 Call

Digital Transformation:		
24DIT01	*APULEIO*	*Trustworthy and quality-assured quantitative magnetic resonance imaging*
24DIT02	*DINAMO*	*Digitalisation route for dimensional nanometrology*
24DIT03	*A++SmartML*	*Automated, adaptive and uncertainty-aware smart measurements using machine learning*
24DIT04	*ScanClouDT*	*Traceability for industrial 3D digitalisation by advanced scanning systems*
24DIT05	*GridData*	*Metrology for reliable power grid data analytics*
Green Deal:		
24GRD01	*MetNH3Energy*	*Metrology to support ammonia use in emerging applications*
24GRD02	*MetZeroPol*	*Metrology to support zero pollution from industrial emissions*
24GRD03	*MetHIR*	*Metrology for harmonisation of field isotope ratio measurements*
24GRD04	*SOLiD-PV*	*Metrology supporting large-scale deployment of efficient and resilient photovoltaic systems*
24GRD05	*ELITE*	*Metrological infrastructure for traceable electrical insulation testing for a reliable electricity grid*
24GRD06	*MetCTG*	*Metrology for comparable and trustworthy greenhouse gas remote sensing datasets*
24GRD07	*CryoMet*	*Metrology for reliable liquefied energy gases measurement*
24GRD08	*GridForm*	*Metrology for efficient grid-forming converters to stabilise future power grids*
24GRD09	*HyMetBat*	*Hybrid metrology for sustainable and low-carbon footprint battery materials*
24GRD10	*SmartGasNet*	*Metrology for smart metering in gas networks*

24GRD11	*MetroHyVe3*	*Metrology for hydrogen vehicles 3*
Normative:		
24NRM01	*FLASH-DOSE*	*Traceable dosimetry for FLASH radiotherapy*
24NRM02	*ConcenSus*	*Establishing traceable concentration measurements of particles for a more sustainable industry*
24NRM03	*MFMET II*	*Establishing metrology standards in microfluidic devices II*
Research Potential:		
24RPT01	*ETrain*	*Establishing traceability routes in nuclear medicine*
24RPT02	*MetroMag*	*A European infrastructure for low magnetic field metrology*
24RPT03	*A2TM*	*Advancement of air temperature metrology capabilities*
Communication and Impact Coordination:		
24CIC01	*Comms4Net*	*Strengthening Communication and Impact for European Metrology with European Metrology Networks*

1.10 Announcement and Grant Agreement preparation

Formal announcement of the results and grant agreement preparation for the projects selected in 2024 will take place in the first few months of 2025. These will be reported in the Annual Report 2025.

For the European Partnership on Metrology, a dedicated Metrology Model Grant Agreement has been approved by EURAMET and the Commission on 8/8/2022. Metrology grant agreements include conditions and rules for the payment of grants such as supporting documents, suspension / termination / reduction of grants in case of poor / partial / late implementation. The projects are subject to rules and conditions (including those related to eligible costs) broadly in line with the Horizon Europe MGA except where exceptions are permissible for the Metrology Partnership. For the Metrology Partnership EURAMET is subject to the Horizon Europe requirement for contracts to be issued within 245 days of call close. The beneficiaries can make observations on the relevant clauses, but the grant agreement clauses are essentially non-negotiable. Consortia are obliged to conclude a consortium agreement and to notify EURAMET that this has been completed.

After the approval of the awarded proposals from the Partnership Committee, but before the results are formally announced, EURAMET arranges for European Commission nominated reviewers to undertake ethics screening of the proposals above the funding lines to ensure that the proposed research complies with EU, international, and national legislation, regulations and ethics rules. The ethics reviewers are requested to follow the Commission ethics review process.

Before the grant agreement preparation, the Partnership MSU also undertakes checks on the proposals to identify potential additional issues to be solved during the grant agreement preparation. In addition, checks and validation of legal entity information and data are undertaken, and where necessary adjustments are made to incorporate changes in the Horizon Europe association status of countries.

EURAMET commenced the grant preparation with beneficiaries on the technical, financial and legal aspects of their grant agreement after the formal announcements of the award decisions for projects selected for funding from the 2023 call were issued in January 2024, taking account of issues identified by the referees, the ethics screening, or the MSU. All grant agreements had been signed by EURAMET and the coordinator and were in force in 7/6/2024, with two projects exceeding the time-to-grant time limit foreseen in the Regulation (EU) No 2021/695. Of the projects exceeding the time limit one was 1 days over and the other was 3 days over. All grant agreements were issued for signing within the deadline, while the signature process itself caused a slight delay. On average the TGG was 232 days, below the time limit.

Annex 1 gives detailed statistics on the selected grants of Call 2023 and the Annual report 2025 will include detailed statistics on the selected grants of Call 2024.

2 Financial Management

EURAMET received EU funds for the Partnership in 2024 in accordance with the Contribution Agreement. 28,05 Mio € (net of MIM) was received on 29th May 2024 to cover the prefinancing payments for call 2023.

These funds are held by EURAMET and then paid to the Grant Beneficiaries in accordance with the Grant Agreements. None of the funds are used for implementation activities which are all paid for by the National Cash contributions.

The administrative costs of the Partnership for 2024 are shown in Part C of this report.

2.1 Allocation of EU Contribution to recipients

The funds allocated by the EU to the selected projects were allocated to the recipients in accordance with the requirements of the Decision, the Contribution Agreement, the Work Programme and the model grant agreement, and according to their estimated costs in the budget.

The total EU funds allocated for the 2023 projects are 52 038 507.37 € compared with the maximum available of 52 301 946.30 € (51 000 000.00 € from the 2023 call plus 1 301 946.30€ carry over from the 2021 and 2022 calls). Details by project and recipient are shown in Annex 1.

The total EU funds allocated for the 2021 to 2023 projects combined is 119 736 561.07 € compared with the maximum available of 120 000 000.00 €.

2.2 Payments to recipients

At present EURAMET has paid all prefinancing to the beneficiaries. Before payments are made against financial statements EURAMET makes efforts to assure itself that the costs claimed by the beneficiaries are correct and represent eligible costs in accordance with the processes outlined in the model grant agreements.

The Annex 1 details payments made to each beneficiary in each project, including the planned EU contribution. Payments made in 2024 totalled 35 670 590.14 €, while payments to the end of 2024, including all previous payments, were 72 923 929.33 €.

2.3 Interest and recoveries

109 599.22 € interest was received in 2024 on EU Partnership funds held by EURAMET. No negative interest was charged on funds being held in the EU account.

3 Management of the Partnership by EURAMET

3.1 People

The organisation of the EURAMET Secretariat in December 2024 can be seen below in Figure 1 and the staff in post in 2024 are listed in Table 4.

Figure 1: Organisation of the EURAMET Secretariat

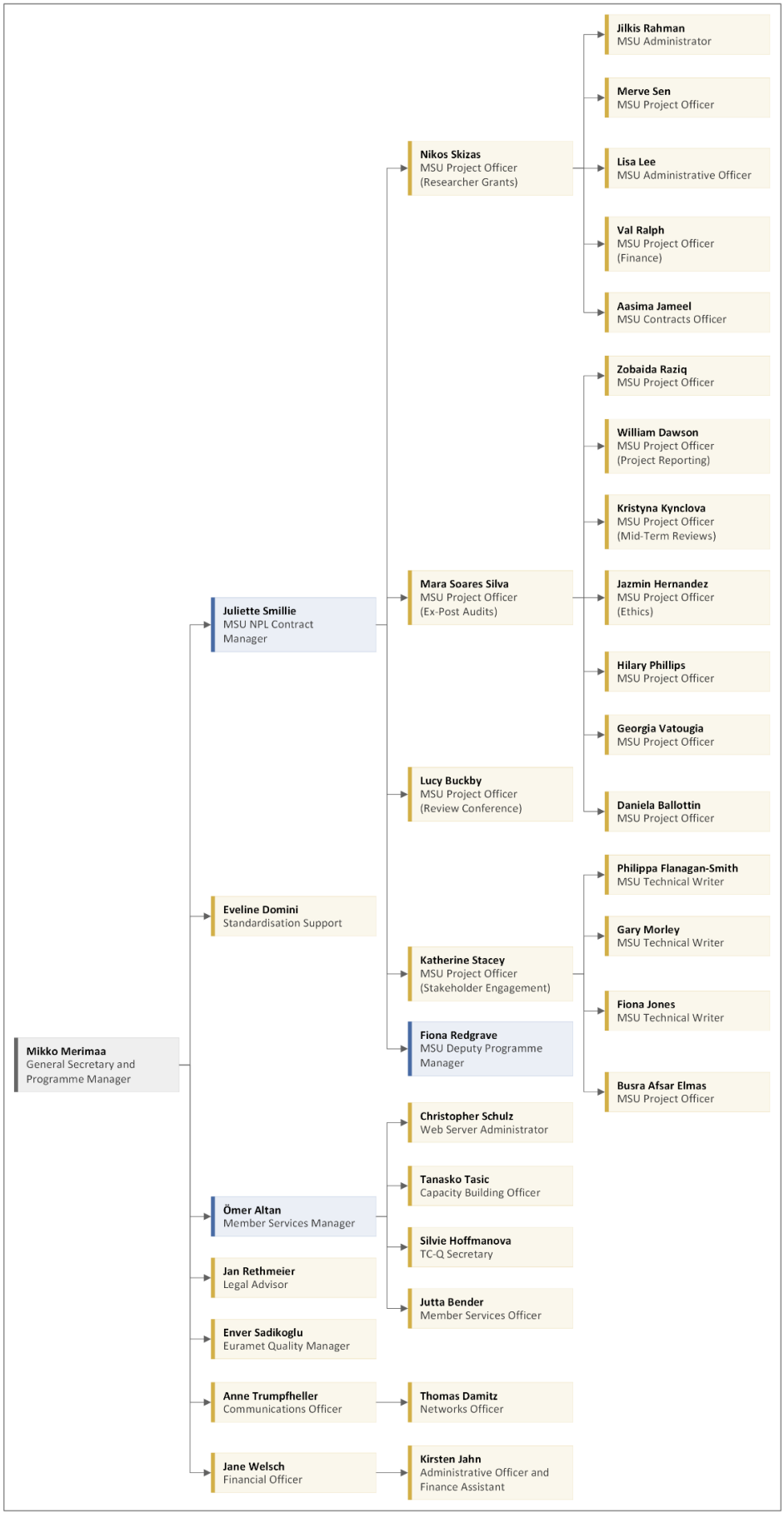


Table 4 EURAMET staff in 2023

Staff accounted for in Braunschweig	
General Secretary	Mikko Merimaa
Member Service Manager	Ömer Altan (from February 2024)
Programme Manager	Mikko Merimaa
Communications Officer	Anne Trumpfheller
Quality Manager	Enver Sadikoglu
Legal Advisor	Jan Rethmeier
Head of General Management Unit	Jutta Bender
TC-Quality Secretary	Silvie Hoffmanová
Capacity Building and Members´ Support Officer	Tanasko Tasić
Support for Standardisation	Eveline Domini
Financial Officer	Jane Welsch
Finance Assistant and Administrative Officer	Kirsten Jahn
Support for Networks	Thomas Damitz
IT Advisor	Duncan Jarvis (until September 2024)
Staff accounted for in Teddington	
Project Officer (Deputy Programme Manager)	Fiona Redgrave
Project Officer (Researcher Grants)	Nikos Skizas
Project Officer (Project Reporting)	William Dawson
Project Officer (Review conference)	Lucy Buckby
Project Officer (Mid-Term Reviews)	Mara Soares Silva
Project Officer (Stakeholder Engagement)	Katherine Stacey
Project Officer (Project Finance)	Val Ralph
Project Officer (Ex-post Audits)	Ömer Altan (until 31 January 2024)
Project Officer	Georgia Vatougia
Project Officer	Zobaida Raziq
Project Officer	Busra Afsar Elmas
Project Officer (Data Control)	Tolga Alioglu (until March)
Project Officer (Group Leader)	Juliette Smillie
Project Officer	Kristyna Kynclova
Project Officer (Ethics)	Jazmin Hernandez
Project Officer	Daniela Ballottin
Project Officer	Merve Sen
Project Officer	Hilary Phillips
Contracts Officer	Aasima Jameel
Technical Writer	Anna Stricker (until September)
Technical Writer	Philippa Flanagan-Smith
Impact Officer	Gary Morley
Impact Officer	Fiona Jones
Administrative Officer	Jilkis Rahman (since April)
Administrative Officer	Lisa Lee

3.2 Processes

In 2024 the normal call processes were followed. Usual progressive updates to the call and reporting guides and procedures were implemented.

The updated and new guides are available from the Partnership Participant portal at www.metpart.eu.

3.3 Promotion and Stakeholder engagement

3.3.1 Project pages on EURAMET website

Dedicated pages for the projects stemming from the Partnership annual calls (including project summary and image) have been put on the EURAMET website.

3.3.2 Partnership specific events in 2024

Partnership specific events, including the promotion of the Metrology Partnership are listed in Annex 3.

4 Implementation of the action plan

All recommendations arising from the Pillars Audit have been implemented.

5 Achievement of KPIs

Table 5: Achievements of KPIs

Objective	KPI Definition/ proposed target	KPI achievement
1. To develop, by 2030, new research capabilities which are built within the framework of new European metrology networks (EMN) and which perform in terms of calibration and measurement capabilities at least equally to the leading metrology institutes outside the Participating States	**By mid of 2024**: 1.1 The EMN landscape will have been completed through strategic consideration of topics where the NMIs and DIs most benefit from coordination, complementarity, and joint research capabilities. At least 12 EMNs will have been launched. 1.2 Deliver a report on the number of EMNs and their joint research capabilities including staff effort and shared infrastructure. **By the end of 2030**: 1.3 At least 9 of the EMNs will demonstrate measurement capability at the top international level.	**Status end of 2024:** 1.1 Up to end 2024, 12 EMNs have been launched: Advanced Manufacturing, Climate and Ocean Observation, Energy Gases, Mathematics and Statistics, Pollution Monitoring, Quantum Technologies, Radiation Protection, Safe and Sustainable Food, Smart Electricity Grids, Smart Specialisation in Northern Europe, Traceability in Laboratory Medicine, Clean Energy 1.2 Each EMN's respective SRA has been published on their websites. EMNs report has been delivered to the Commission and is available on EURAMET website. . 1.3 The measurement capabilities are under development at the moment.
2. To support, by 2030, sales of new innovative products	Every year:	**Status end of 2024:**

Objective	KPI Definition/ proposed target	KPI achievement
and services through the use and adoption of the new metrology capabilities in key emerging and enabling technologies	2.1 The number of participants from industry and early adopters of the developed technologies in JRPs to be at least at the level of participation in the last EMPIR comparable Target Programmes (Industry, Health, Normative, Green Deal "Energy-Environment") The number of participants in JRPs as regards digital calls should be included in the report.	2.1 The number of participants from industry and early adopters of the developed technologies in JRPs as of the end of 2024 is detailed below, and comparable figures for EMPIR are given as a reference. As the number of projects differs, the average number of participants per project is used to assess if the KPI is met.

Partnership	**Number of projects**	**Number of industry and adopters per TP**	**Average number per project**	**EMPIR**	**Number of projects**	**Number of industry and adopters per TP**	**Average number per project**	KPI on target?
DIT	7	58	8,3	n/a	0	0	-	N/A
GRD	15	166	11,1	ENV+ENG	37	307	8,3	Y
HLT	7	64	9,1	HLT	19	129	6,8	Y
IND	14	152	10,9	IND	41	309	7,5	Y
NRM	21	123	5,9	NRM	37	166	4,5	Y

2. To support, by 2030, sales of new innovative products and services through the use and adoption of the new metrology capabilities in key emerging and enabling technologies	By mid of 2024 2.2 Deliver a report on the trends in European turnover from new or significantly improved products and services that can be attributed to the research activities of the partnership and its predecessors by TP. 2.3 At least 40 % of the collaborators[1] in joint research projects should be profit-making entities. Every year from 2026 onwards: 2.4 An average of at least EUR 50 million of European turnover from new or significantly	**Status end of 2024:** 2.2 The draft report has been submitted to EC. There have been no Partnership projects concluded within the timeframe, but analysis of the economic benefit of EMPIR projects is progressing as planned. 2.3 Until the end of 2024, the joint research projects have a total of **72 collaborators**, of which **30** have declared themselves as profit-making entities. This accounts for **42%** of all collaborators. 2.4 This is not possible to give evidence now, as the interviews to gain those numbers will start a year after the conclusion of the projects.

[1] Collaborators are those organisations that have signed a Letter of Agreement (or equivalent) with the consortium.

	improved products and services should be demonstrated to result from the research activities of the Partnership. 2.5 At least 40 % of the collaborators in joint research projects should be profit-making entities.	 2.5 see point 2.3, This KPI had been achieved so far.
3. To contribute to the creation and diffusion of high-quality new knowledge, competences and skills across the Union in the context of lifelong learning and with a view to achieving societal transformation, including through enhancing capability for innovation;	By mid of 2024 3.1 At least 18 seminars, and stakeholders events should have been organised by the EMNs. Every year from 2026 onwards: 3.2 The average number of peer reviewed scientific publications per project that completed in the previous year should be at least 6. 3.3 On average at least 4 seminars and courses are arranged towards stakeholder communities per concluded project. By the end of 2030: 3.4 The Field-Weighted Citation[2] Index of peer reviewed publications produced by the Metrology Partnership is at least 1. 3.5 Funding distributed to non NMIs and DIs will have been 35 % of the total funding distributed in the areas supporting the EMNs.	**Status end of 2024:** 3.1 16 EMN related events had been held within 2022, 16 events within 2023 and 32 within 2024. Altogether 64 events have been arranged by the end of 2024. (see https://www.euramet.org/publications-media-centre/events/archived-events) 3.2 At the end of 2024 no projects have been completed. However, the reported average is **5.6** peer-reviewed scientific publications per project. This is a preliminary indication only based on Call 2021 reporting. As none of the Metrology Partnership projects were completed in 2024, it cannot be expected that this KPI is met at this stage. Improvement is expected as projects progress further. 3.3 Seminars and courses are generally organised once initial project results are available and can be shared with stakeholders. As of now, no projects have been completed. However, the reported average is **2.2** seminars/courses per project. This is a preliminary indication only based on the Call 2021 reporting. As none of the Metrology Partnership projects were completed in 2024, it cannot be expected that this KPI is met at this stage. Improvement is expected as projects progress further. 3.4 Not applicable yet. 3.5 Not applicable yet. The Partnership Committee has decided that projects listed in the EMN pages are considered to be from areas that support the EMNs.

[2] Field-weighted Citation Impact (FWCI) is an author-level metric introduced and applied by Scopus SciVal. FWCI equals to the total citations actually received divided by the total citations that would be expected based on the average of the considered field. FWCI of 1 means that the output performs just as expected for the global average. More than 1 means that the author outperforms the average, and less than 1 means that the author underperforms.

<table>
<tr><td></td><td>3.6 At least 10 patent applications are produced for every 100 concluded projects.</td><td>3.6 Not applicable yet.</td></tr>
<tr><td>4. To contribute fully and effectively, by 2030, to the design and implementation of specific standards and regulations that underpin public policies addressing societal, economic and environmental challenges</td><td>Every year:

4.1 At least 10 % of activity in the selected joint research projects is dedicated to normative research & to support regulation.

Every year from 2026 onwards:

4.2 The number of contributions to standard committees that underpin policy or regulation that underpin public policies addressing societal, economic, and environmental challenges should be at least 400.

Overall:

4.3 At least 40 % of activity in the selected joint research projects is dedicated to the twin transition.</td><td>Status end of 2024:

4.1
<table><tr><th>Call year</th><th>Funded Value</th><th>Standardisation participation</th><th>Percentage of Standardisation /participation</th></tr><tr><td>2021</td><td>€ 25 946 402</td><td>€ 10 262 134</td><td>39,6%</td></tr><tr><td>2022</td><td>€ 41 751 652</td><td>€ 11 430 540</td><td>27,4%</td></tr><tr><td>2023</td><td>€ 52 038 507</td><td>€ 10 474 788</td><td>20,1%</td></tr><tr><td>2024</td><td>€ 51 011 529</td><td>€ 15 585 299</td><td>30,6%</td></tr><tr><td>TOTAL</td><td>€ 170 748 090</td><td>€ 47 752 760</td><td>28,0%</td></tr></table>
4.2 By the end of 2024 <u>154</u> contributions to standard committees that underpin policy or regulation that underpin public policies addressing societal, economic, and environmental challenges were made by projects stemming from the year 2021 Calls.
This is a preliminary indication only. As none of the Metrology Partnership projects were completed in 2024, it cannot be expected that this KPI is met at this stage. Improvement is expected as projects progress further.

4.3
<table><tr><th>Call year</th><th>Funded Value</th><th>Twin participation</th><th>Percentage of Twin /participation</th></tr><tr><td>2021</td><td>€ 25 946 402</td><td>€ 24 124 181</td><td>93,0%</td></tr><tr><td>2022</td><td>€ 41 751 652</td><td>€ 11 063 312</td><td>26,5%</td></tr><tr><td>2023</td><td>€ 52 038 507</td><td>€ 18 076 809</td><td>34,7%</td></tr><tr><td>2024</td><td>€ 51 011 529</td><td>€ 44 225 959</td><td>86,7%</td></tr><tr><td>TOTAL</td><td>€ 170 748 090</td><td>€ 97 490 261</td><td>57,1%</td></tr></table></td></tr>
</table>

<table>
<tr>
<td>5. To unleash the potential of metrology among end-users, including SMEs and industrial stakeholders, as an instrument which contributes to the achievement of the Union goals for the digital and green transitions.</td>
<td>By the end of 2022 onwards:

5.1 The share of selected research topics where end-users including industrial stakeholders and early adopters of the proposed technologies, have contributed to the objectives should be at least 10 %.

By the end of 2026 onwards:

5.2 At least 0.75 % of projects can demonstrate an end-user engagement mechanism after the project.

5.3 On average 1.5 outreach events are arranged towards stakeholder communities per concluded project. Uptake of co-created scientific results and innovative solutions.

5.4 To provide examples that the joint research projects are addressing the identified Union policy priorities and global challenges (including SDGs)</td>
<td>Status end of 2024:
5.1
<table>
<tr><th>Year</th><th>Total No. SRTs published</th><th>No. SRTs with End Users</th><th>% End Users (KPI 5.1)</th></tr>
<tr><td>2021</td><td>30</td><td>26</td><td>87%</td></tr>
<tr><td>2022</td><td>55</td><td>50</td><td>91%</td></tr>
<tr><td>2023</td><td>57</td><td>44</td><td>77%</td></tr>
<tr><td>2024</td><td>51</td><td>41</td><td>80%</td></tr>
<tr><td>Total</td><td>193</td><td>161</td><td>84%</td></tr>
</table>

5.2 The first projects of the Call 2021 will finish in 2025; exact results will be obtained from that time onwards.

5.3 The reported average is 1.1 outreach events per project. This is a preliminary indication only. As none of the Metrology Partnership projects were completed in 2024, it cannot be expected that this KPI is met at this stage. Improvement is expected as projects progress further.

5.4 First examples of the joint research projects addressing the identified Union policy priorities and global challenges:

Green Deal:
• Partnership project develops metrology basis for soil moisture measurements on multiple scales
• Partnership project delivering first reference materials for stable isotope ratios in seawater
• Partnership project helping to advance carbon capture utilisation and storage techniques

Digitalisation:
• Partnership project on operando analysis of battery storage technologies publishes videos
• EMPIR project that has improved power measurements for railways wins Intellectual Property Award
• Partnership project contributes to first commercially available absorbed power density test system
• World first calibration service will support the use of renewable energy resources</td>
</tr>
</table>

As the annual report needs to be in line with the Art.50.1(b) of the Regulation (EU) 2021/695 the following table shows the achievements according to the regulation:

Information based on Art.50.1(b) of the Regulation (EU) 2021/695	**Status by end of 2024**
Information on the level of mainstreaming SSH (Social Sciences and Humanities)	The integration of SSH is not a main aspect of this Partnership, but is supported through the inclusion in projects, whenever appropriate.
The ratio between lower and higher TRLs in collaborative research	Lower TRL levels are reached in projects in the field of Fundamental Metrology. In the TPs of Metrology for Industry or the Metrology to support the Green Deal, the TRLs are mostly higher, as they include the potential industrial uptake community mainly in the consortium. All Metrology Joint Research Projects are RIAs.
The progress on the participation of widening countries	With our the approach to incorporate more EURAMET members in the Partnership and to raise awareness of the Partnership in the community, EURAMET is trying hard to increase the number of participants. Two additional countries, the UK and Greece joined the Partnership this year. A significant number of the widening countries already participate in the Partnership projects, either as countries that are members of the Partnership or as external participants.
The geographical composition of consortia in collaborative projects	All projects and their consortia are spread over Europe.
The evolution of researchers' salaries	As EURAMET is not responsible for the individual salaries, this is not applicable for us.
The use of a two-stage submission and evaluation procedure	The Partnership follows a two stage process with stage 1 the call for needs where proposers respond to the actual stakeholder needs and the stage two where these needs in project proposals. This always happens within one calendar year.
The measures aimed at facilitating collaborative links in European R&I	All the JRPs aim at collaborative research with the inclusion of participants from the whole life cycle. This includes at the beginning a wide range of European Research facilities and of course the potential end users on the other side.
The use of the evaluation review and the number and types of complaints	The Partnership follows the same evaluation criteria as the other HEU initiatives. See 1.8.1 of this report.
The level of climate mainstreaming and related expenditures	EURAMET only attends project meetings virtually and all other related issues are dealt with online as well. The Mid Term Reviews for the projects are also held virtually and EURAMET does not require the projects to have only face to face meetings.
SME participation	The Partnership is participating in the MIM and therefore all SMEs receive prefinancing. call scopes encourage SME participation.

Information based on Art.50.1(b) of the Regulation (EU) 2021/695	Status by end of 2024
Private sector participation	The Partnership is open for all entities who are allowed to receive funding under the HEU participation rules.
Gender participation in funded actions	All entities are obliged to have a gender equality plan unless they are in a category where they are exempt from the requirement to have one.
Evaluation panels	The independent reviewers who evaluate the proposals are not linked to any NMI or DI within EURAMET and the Partnership has an independent observer appointed by the Commission to oversee the evaluations at each Review Conference.
Boards and advisory groups	The European Partnership on Metrology has a steering group, and the Partnership Committee oversees all necessary decisions related to the Partnership
The 'Seals of Excellence'	This is not applicable for the Partnership.
The European Partnerships as well as the co-funding rate	EURAMET has synergies with various other Partnerships or Initiatives, like New partnership on Advanced Materials and the Technology Platform MANUFUTURE, Mission on Adaptation to Climate Change, Mission to Restore our Ocean and Waters by 2030, Partnerships on Process4Planet, Clean Steel, Zero emission waterborne transport, and Clean Aviation, Partnership on 2Zero, EURATOM and the Partnership PIANOFORTE, Mission on Cancer and the Innovative Health Initiative , and have signed various MoU and are involved in collaborative research projects. Cofunding Reporting can be seen in Part E and F of the report.
The complementary and cumulative funding from other Union programmes	EURAMET and its members are involved in various other Union programmes. One example is EURAMET's European Metrology Network on Quantum Technologies, which contributes to the SRIA of the Quantum flagship initiative. Another example is the construction of the new GUM (Central Office of Measures – EURAMET Member) premises in Poland, which was supported by complementary funding from EU programs, specifically through the European Regional Development Fund (ERDF). This state-of-the-art facility enhances metrological capabilities, fosters innovation, and supports harmonization efforts across the EU, directly benefiting both local and EU-wide scientific and industrial communities.
Research infrastructures	Within every JRP we support common infrastructure in all related NMIs and DIs in Europe.

Information based on Art.50.1(b) of the Regulation (EU) 2021/695	Status by end of 2024
Time-to-grant	Time to grant can be seen from table 7 (Part B point 6.1)
The level of international cooperation	The Partnership is open to international cooperation, as per the rules of Horizon Europe programme. Participation of the JRC is possible in all Thematic Programmes. Further, CERN is involved in some projects as well as the international SDOs.
Engagement of citizens and civil society participation	Every action has an impact related objective in where the engagement with the broad public is encouraged and foreseen, if this is possible.

6 Data on the programme implementation and its impact

6.1 Call dates, timescales & overall statistics on proposals received

Table 6: Dates and timescales

Call year	Number of grants	Call close	Announcement of results	First Grant issued	Last Grant issued	Average time from call to inform (TTI)	Average time from inform to grant (TTS)	Average time from call to grant (TTG)	Number within target TTG	% within target TTG
2023	31	02/10/2023	09/01/2024	19/04/2024	30/05/2024	99	133	232	29	94 %
2024	23	30/09/2024	07/01/2025			99				

Statistics related to time to issue etc for the grants for Call 2023 were not available when the annual report for 2023 was submitted to the Commission and are therefore reported above. The list of proposals from Call 2024 selected for funding was formally announced in early January 2025, and the statistics related to time to issue etc for Call 2024 grants will therefore be reported in the annual report for 2025.

Table 7: Number of applications submitted, evaluated or prioritised and selected

Stage	Application type	Number of submissions*	Number eligible for evaluation	Number selected
Stage 1	PRT	106	106	50**
Stage 2	JRP	47	47	22
1 stage CSA	CSP	1	1	1

*(excluding superseded submissions)
**(Some SRTs include input from more than one PRT)

Table 8: Type of organisation submitting PRTs

Country	NMI/DI	Other	Total
Austria	1	1	2
Azerbajdzan	1	0	1
Bosnia and Herzegovina	2	0	2
Czechia	2	0	2
Finland	1	0	1
France	1	0	1
Germany	29	1	30
Ireland	1	0	1
Italy	9	3	12
Kazakhstan	1	0	1
Netherlands	8	0	8
Norway	2	0	2
Poland	2	0	2
Portugal	1	0	1
Slovakia	2	0	2
Slovenia	1	0	1
Sweden	4	0	4
Switzerland	2	2	4
Türkiye	0	1	1
United Kingdom	26	2	28
Total	96	10	106

6.2 Detailed statistics from Stage 2

Table 9: Resource details for all submitted proposals

	JRP	CSP	Total
Total Value (including Associated Partners)	*108 108 962 €*	*1 499 750 €*	*109 608 712 €*
- Internal funding requested	*58 766 654 €*	*1 499 750 €*	*60 266 404 €*
-External funding requested	*35 791 591 €*	*0 €*	*35 791 591 €*
-Unfunded Annex 2 Costs	*2 039 993 €*	*0 €*	*2 039 993 €*
-Non eligible Associated Partner Costs	*11 510 725 €*	*0 €*	*11 510 725 €*
Total requested EU funding	*94 558 245 €*	1 499 750 €	96 057 995 €
Total available EU funding	*50 802 196 €*	1 499 750 €	52 301 946 €
Total person months efforts	10 820	154	10 975
- Person months efforts -internal funded	6 101	154	6 255
- Person months efforts -external funded	3 858	0	3 858
- Person months efforts - unfunded	123	0	123
- Person months efforts - Associated Partner	0	0	0
Number of proposals	47	1	48
Number of eligible proposals	47	1	48
Total number of Beneficiaries	708	3	711
Average Beneficiaries per proposal	15	3	15
Total number of Participants	755	3	758
Average Participants per proposal	16	3	16
Average total value per proposal	2 300 191 €	1 499 750 €	2 283 514,84 €
Average funding request per proposal	2 011 877,55 €	1 499 750,00 €	2 001 208,23 €

Figure 2: Value of submitted proposals by country and type

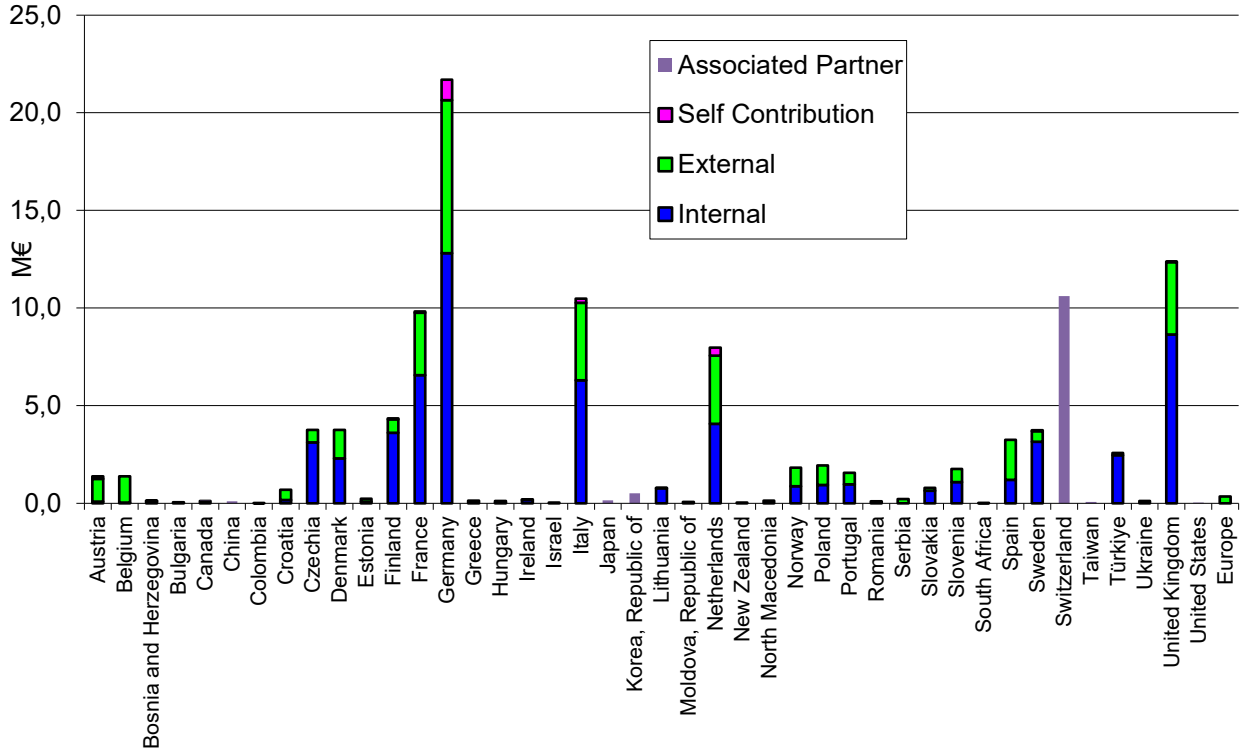


Table 10: Type of participant in submitted proposals by country

	Internal	External	Self Funded	Associated	Total
Austria	2	7	1	0	10
Belgium	1	10	0	0	11
Bosnia and Herzegovina	3	1	0	0	4
Bulgaria	0	1	0	0	1
Canada	0	1	0	1	2
China	0	0	0	1	1
Colombia	0	0	1	0	1
Croatia	3	7	0	0	10
Czechia	33	9	0	0	42
Denmark	17	13	0	0	30
Estonia	3	1	0	0	4
Finland	25	7	1	0	33
France	28	26	2	0	56
Germany	47	61	16	0	124
Greece	0	3	0	0	3
Hungary	2	1	0	0	3
Ireland	4	1	0	0	5
Israel	0	1	0	0	1
Italy	30	36	4	0	70
Japan	0	0	0	1	1
Korea, Republic of	0	0	0	3	3
Lithuania	8	1	0	0	9
Moldova, Republic of	0	3	0	0	3
Netherlands	17	21	7	0	45
New Zealand	0	1	0	0	1
North Macedonia	0	2	0	0	2
Norway	6	6	0	0	12
Poland	12	10	0	0	22
Portugal	13	8	0	0	21
Romania	0	3	0	0	3
Serbia	0	5	0	0	5
Slovakia	8	2	0	0	10
Slovenia	8	6	0	0	14
South Africa	0	0	1	0	1
Spain	12	19	0	0	31
Sweden	18	6	2	0	26
Switzerland	0	0	0	38	38
Taiwan, Province of China	0	0	0	1	1
Türkiye	21	3	0	0	24
Ukraine	0	4	0	0	4
United Kingdom	34	31	2	0	67
United States	0	0	0	2	2
Europe	0	2	0	0	2
Total	**355**	**319**	**37**	**47**	**758**

An organisation is counted each time it is included in a proposal, therefore 1 organisation may equate to a number of counts.

Figure 3: Nationality of coordinating organisation in the submitted proposals

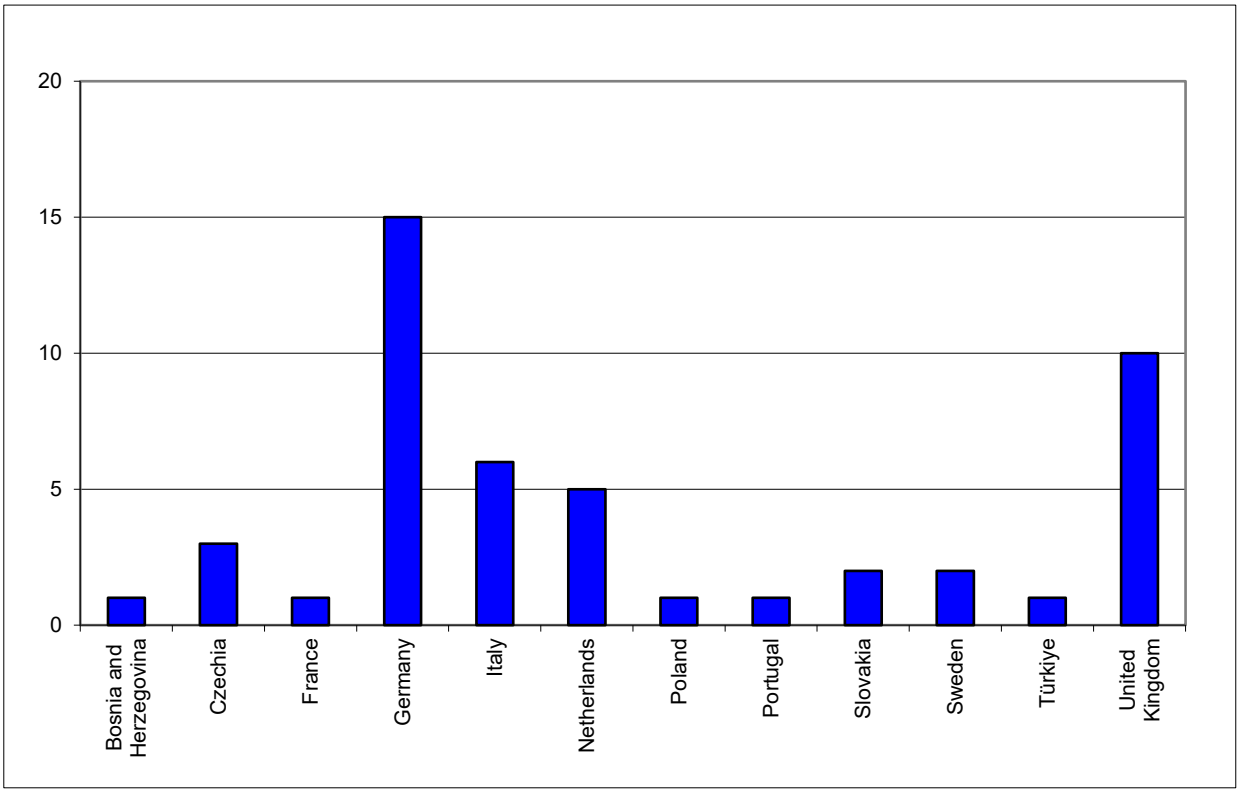


Table 11: Resource details for all selected proposals

	JRP	CSP	Total
Total Value (including Associated Partners)	*55 708 617 €*	1 499 750 €	*57 208 367 €*
- Internal funding requested	*29 641 625 €*	*1 499 750 €*	*31 141 375 €*
-External funding requested	*19 870 154 €*	*0 €*	*19 870 154 €*
-Unfunded Annex 2 Costs	*981 051 €*	*0 €*	*981 051 €*
-Non eligible Associated Partner Costs	*5 215 788 €*	*0 €*	*5 215 788 €*
Total requested EU funding	*49 511 779 €*	1 499 750 €	*51 011 529 €*
Total available EU funding	*50 802 196 €*	1 499 750 €	*52 301 946 €*
Total person months efforts	5 438	154	5 593
- Person months efforts -internal funded	2 964	154	3 119
- Person months efforts -external funded	2 067	0	2 067
- Person months efforts - unfunded	55	0	55
- Person months efforts - Associated Partner	0	0	0
Number of projects selected	22	1	23
Total number of Beneficiaries	346	3	349
Average Beneficiaries per proposal	16	3	15
Total number of Participants	366	3	369
Average Participants per proposal	17	3	16
Average total value per proposal	2 532 209,88 €	1 499 750,00 €	2 487 320,32 €
Average funding request per selected project	2 250 535,39 €	1 499 750,00 €	2 217 892,55 €

Figure 4: Value of selected proposals by country and type

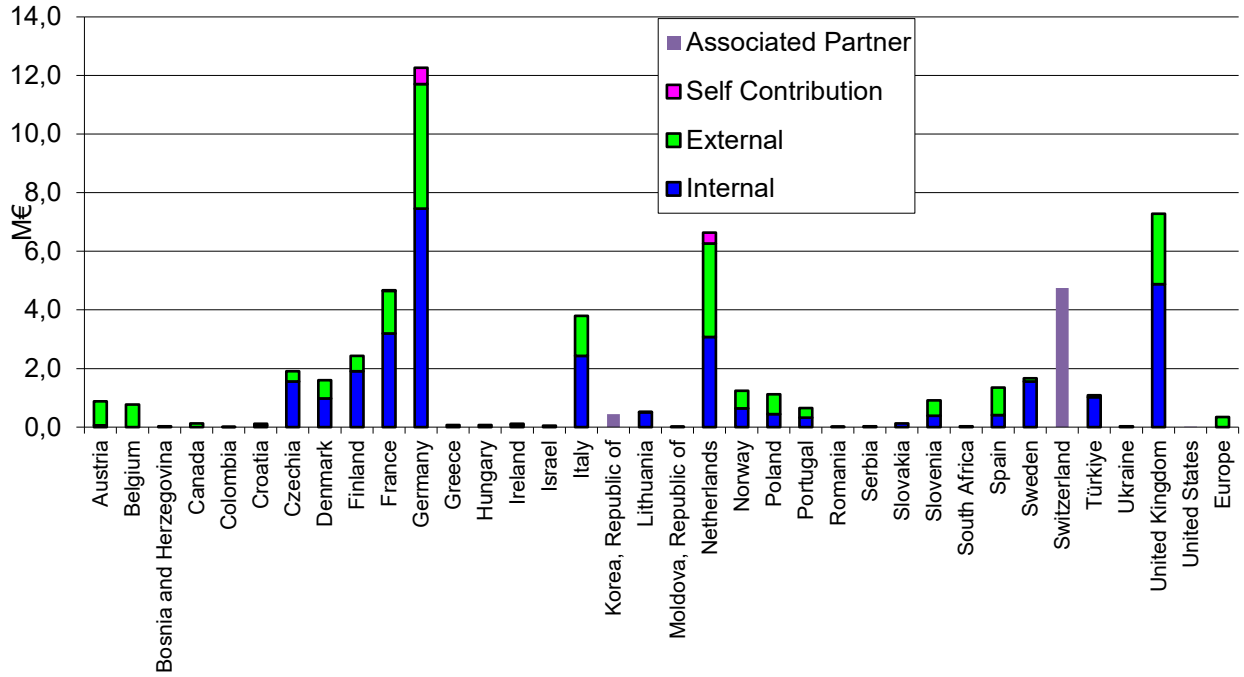
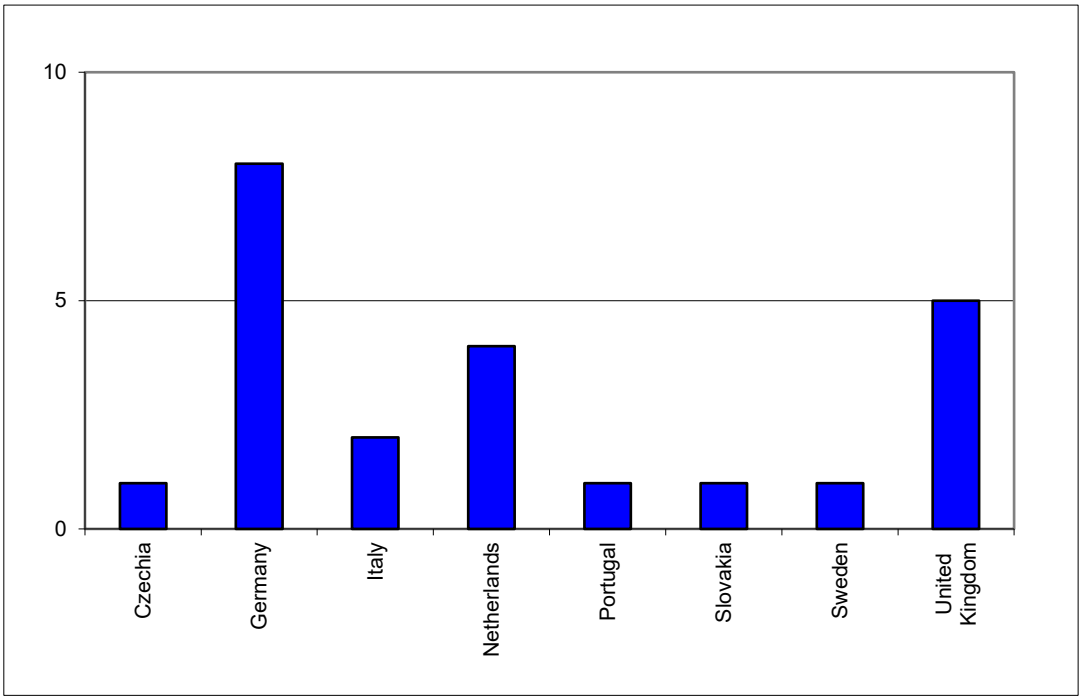


Table 12: Type of participant in selected proposals by country

	Internal	External	Unfunded	Associated	Total
Austria	1	4	0	0	5
Belgium	0	5	0	0	5
Bosnia and Herzegovina	1	0	0	0	1
Canada	0	1	0	0	1
Colombia	0	0	1	0	1
Croatia	1	1	0	0	2
Czechia	15	5	0	0	20
Denmark	8	6	0	0	14
Finland	12	5	0	0	17
France	15	10	1	0	26
Germany	25	32	8	0	65
Greece	0	2	0	0	2
Hungary	0	1	0	0	1
Ireland	2	1	0	0	3
Israel	0	1	0	0	1
Italy	14	12	0	0	26
Korea, Republic of	0	0	0	1	1
Lithuania	5	1	0	0	6
Moldova, Republic of	0	1	0	0	1
Netherlands	13	18	6	0	37
Norway	4	4	0	0	8
Poland	6	5	0	0	11
Portugal	4	4	0	0	8
Romania	0	1	0	0	1
Serbia	0	1	0	0	1
Slovakia	2	0	0	0	2
Slovenia	3	5	0	0	8
South Africa	0	0	1	0	1
Spain	5	7	0	0	12
Sweden	9	2	0	0	11
Switzerland	0	0	0	18	18
Türkiye	8	2	0	0	10
Ukraine	0	1	0	0	1
United Kingdom	20	19	0	0	39
United States	0	0	0	1	1
Europe	0	2	0	0	2
Total	**173**	**159**	**17**	**20**	**369**

Figure 5: Nationality of coordinating organisation in selected proposals



6.3 Detailed statistics of the funded projects

Below are cumulative reported statistics related to the funded projects from call 2021, 2022 and 2023. They provide a detailed breakdown of the financial and human resources allocated to the funded projects, highlighting the extensive collaboration and participation across various countries and organisations.

Table 13: Resource details for all funded

	JRP	CSP	Total
Total Value (including Associated Partner)	154,461,706 €	1,000,000 €	155,461,706 €
Total Internal Annex 2 Costs	78,261,645 €	1,000,000 €	79,261,645 €
Total External Annex 2 Costs	40,474,916 €	0 €	40,474,916 €
Total Unfunded Annex 2 Costs	5,269,439 €	0 €	5,269,439 €
Total Associated Partner Non eligible costs	30,455,706 €	0 €	30,455,706 €
Total requested EU funding	118,736,561 €	1,000,000 €	119,736,561 €
Total available EU funding			120,000,000 €
Funding carried over			263,439 €
Total person months efforts	*16,897*	27	16,924
- Person months efforts - internal funded	*8,771*	*27*	*8,798*
- Person months efforts - external funded	*5,067*	*0*	*5,067*
- Person months efforts - unfunded	*377*	*0*	*377*
- Person months efforts - Associated Partners	*2,683*	*0*	*2,683*
Number of contracts	*73*	1	74
Total number of Beneficiaries	*987*	1	988
Total number of Participants	*1,154*	1	1,155
Average Beneficiaries per contract	14	1	13
Average Participants per contract	16	1	16
Average value per project	2,115,914 €	1000000	2,100,834 €
Average EU funding request per contract	1,626,528 €	1,000,000 €	1,618,062 €

Figure 6: Value of funded projects by country and type

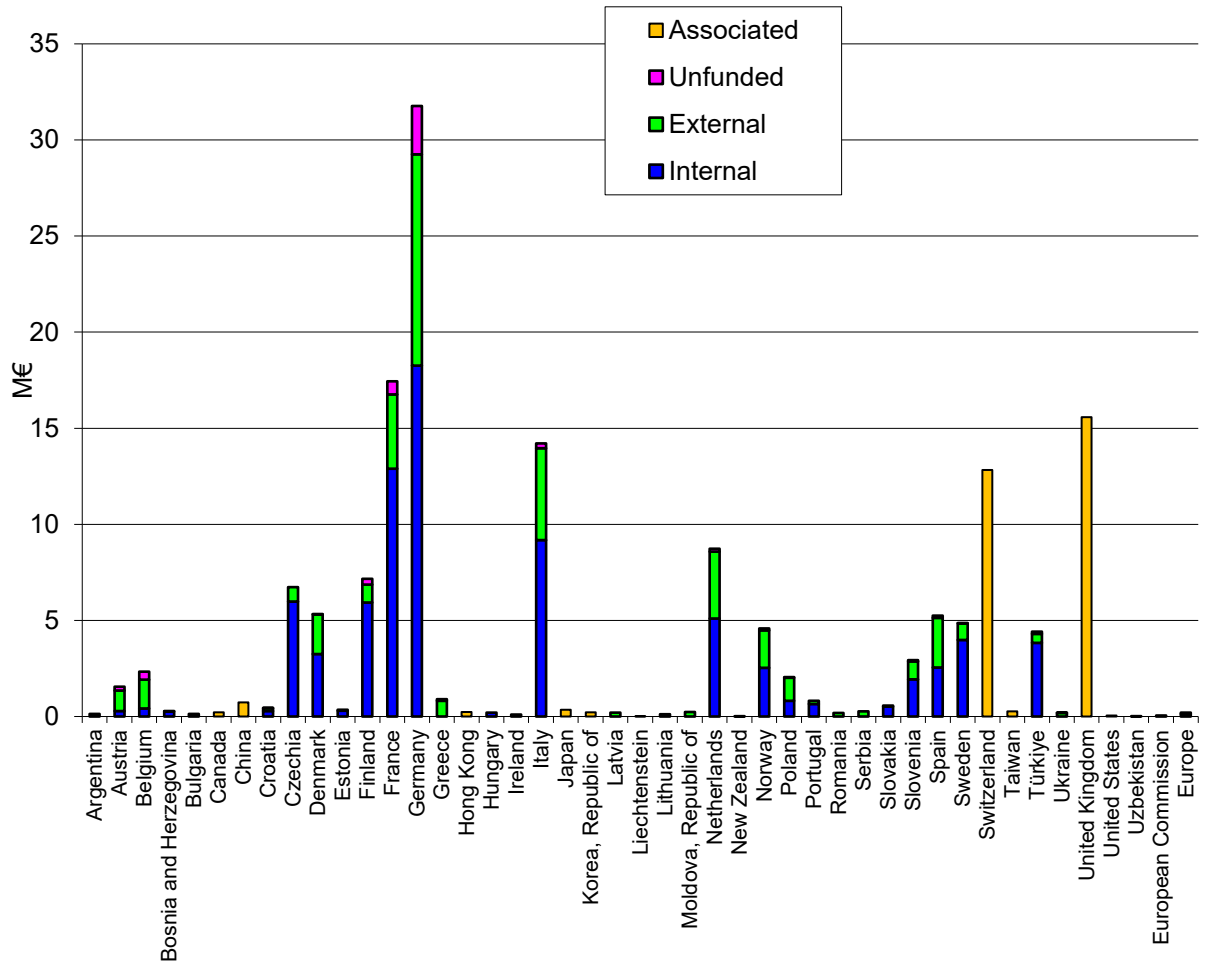


Table 14: Type of participant in funded projects by country

	Internal	External	Unfunded	Associated	Total
Argentina	0	4	0	0	4
Austria	6	6	5	0	17
Belgium	5	18	5	0	28
Bosnia and Herzegovina	10	1	0	0	11
Bulgaria	0	2	0	0	2
Canada	0	0	0	3	3
China	0	0	0	5	5
Croatia	4	1	1	0	6
Czechia	53	9	0	0	62
Denmark	24	20	1	0	45
Estonia	6	1	0	0	7
Finland	37	9	6	0	52
France	63	36	12	0	111
Germany	63	89	39	0	191
Greece	0	8	1	0	9
Hong Kong	0	0	0	1	1
Hungary	4	0	0	0	4
Ireland	2	0	0	0	2
Italy	41	51	9	0	101
Japan	0	0	0	4	4
Korea, Republic of	0	0	0	1	1
Latvia	0	1	0	0	1
Liechtenstein	0	0	0	1	1
Lithuania	0	1	0	0	1
Moldova, Republic of	0	6	0	0	6
Netherlands	25	23	3	0	51
New Zealand	0	0	1	0	1
Norway	15	14	2	0	31
Poland	16	14	1	0	31
Portugal	12	5	0	0	17
Romania	0	4	0	0	4
Serbia	0	5	0	0	5
Slovakia	6	2	0	0	8
Slovenia	17	13	2	0	32
Spain	22	32	4	0	58
Sweden	29	7	1	0	37
Switzerland	0	0	0	51	51
Taiwan	0	0	0	2	2
Türkiye	36	5	2	0	43
Ukraine	0	4	1	0	5
United Kingdom	0	0	0	91	91
United States	0	0	0	2	2
Uzbekistan	0	0	1	0	1
European Commission	0	0	1	0	1
Europe	0	2	1	0	3
Total	**496**	**393**	**99**	**161**	**1149**

(1 organisations in several projects – several counts)

Figure 7: Nationality of coordinating organisation in funded

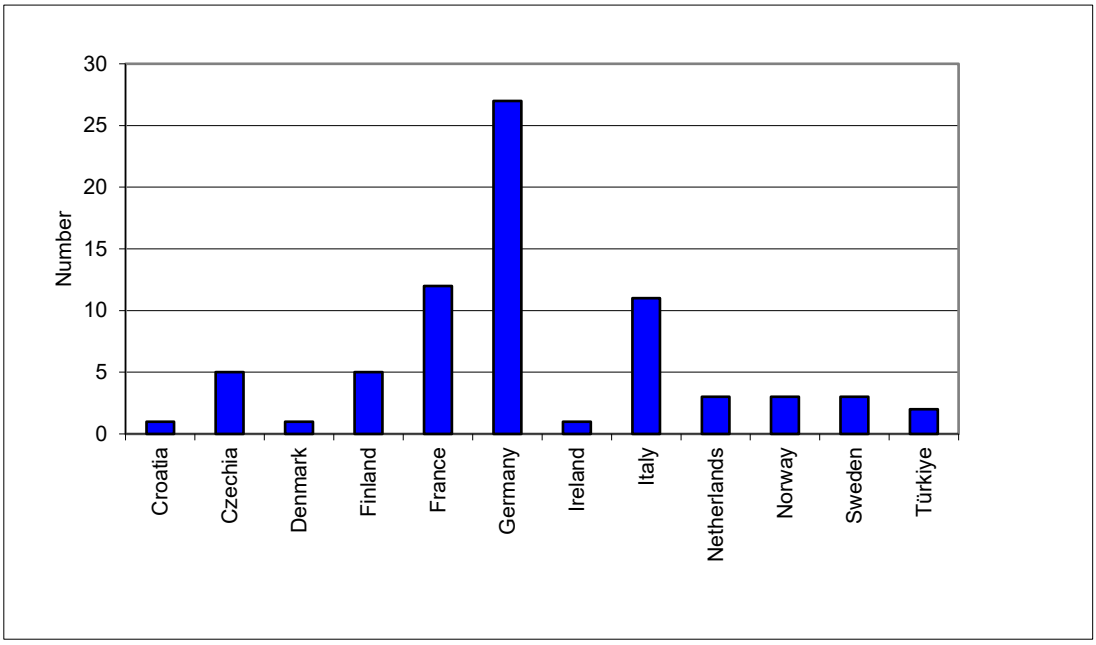
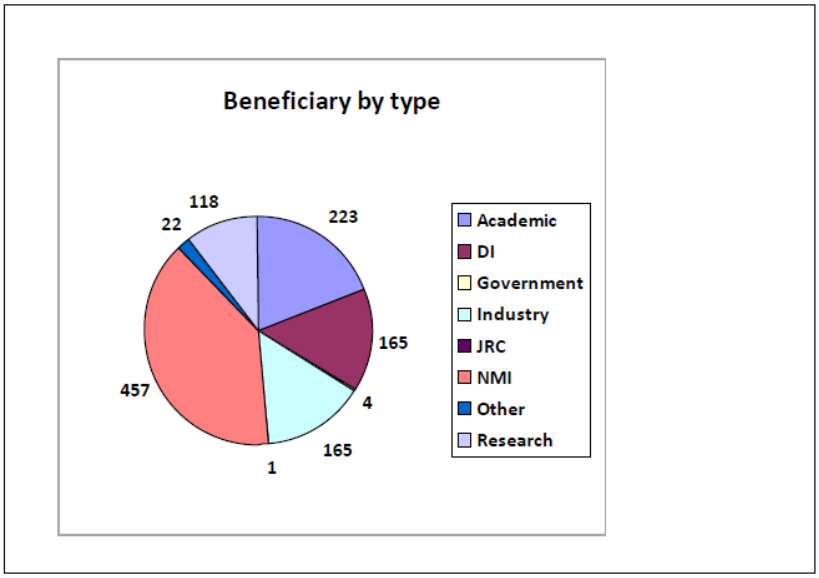
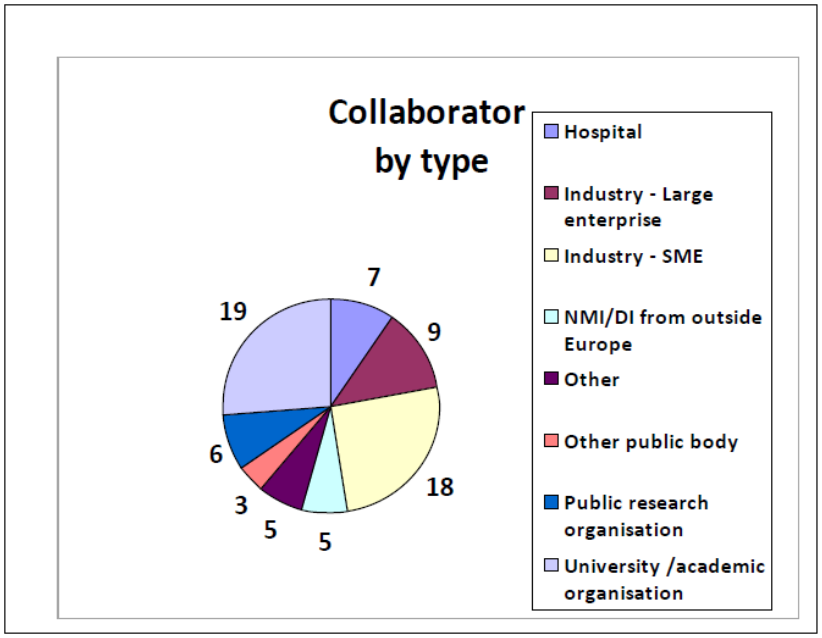


Figure 8: Type of beneficiary in funded projects




Collaborator by type
Hospital
Industry - Large enterprise
Industry - SME
NMI/DI from outside Europe
Other
Other public body
Public research organisation
University /academic organisation
7
9
18
5
5
3
6
19

6.4 Outputs of all actions that ended in the reporting year

During 2024 Outcomes and Impact reports (first reporting) were collected from Partnership calls 2021 and 2022. A reporting process is in place to collect and collate the data. In addition, guidance on the use of the Input and Output data is available from the Metrology Partnership download page. The projects are required to complete these reports at each reporting period.

Table 15: Output data for Metrology Partnership projects

Output		Total no. of outputs
Presentations & other dissemination	Conference presentations /posters	465
	Other dissemination activities	395
Peer-reviewed publications	Peer-reviewed publications	127
Standards	Inputs to standards committees	243
Training	Training activities (internal)	61
	Training activities (external)	73
IP	Patent applications	0
	Total number of unique outputs	**1364**

The output data reported has been collated from the data provided by JRP coordinators in the JRP Output and Impact Report. The data reported here was collated at the end of 2024.

Notes on the definitions used in the data collation

- The category 'peer-reviewed publications' includes articles that have been published in journals or accepted for publication. Submitted papers are not counted.
- The data for 'inputs to standards committees' do not include inputs to metrology committees (such as BIPM, EURAMET)
- Co-authored peer-reviewed publications have been identified as those publications with authors from at least two organisations (two NMI or one NMI and one DI from at least two different countries)
- Training is defined as 'internal' where the training is directed at consortium members and 'external' where training is directed at non-consortium members or a mixture of both consortium members and non-consortium members.

Summary of the data

- A total of 1364 unique outputs have been reported to date.
- To date the most commonly reported outputs are conference presentations (incl. posters) (35 % of total outputs)
- A total of 127 peer-reviewed papers have been published to date, of which 72 % have been co-authored (i.e. with authors from at least two organisations).
- There have been 243 inputs to 121 unique standards developing committees.
- 134 training activities with 54% these directed to people beyond the core consortia undertaking the projects.
- There have been no patent applications so far

The tables that follow provide more detail on the output figures.

Contributions to standards

Metrology Partnership JRP participants engage with a wide range of standards making and regulatory bodies (including metrology standards committees). This includes, for example, membership of technical committees and working groups of standards developing bodies (SDOs) such as ISO, IEC, CEN, CENELEC, ETSI and their national equivalents. JRP participants make presentations to these technical committees and their working groups and also to regulatory bodies (ministries, WHO, EC, etc.) and provide inputs to draft standardisation documents.

JRP participants have made 243 contributions or inputs to 121 unique committees of standards making bodies, predominantly at international level with ISO being the most frequent SDO engaged with.

Table 16: Contributions to standards

Type of standards body	No. of contributions
International standards development organisation (ISO, IEC)	78
European standards development organisation (CEN, CENELEC, ETSI)	35
National standards development organisation	48
Regulatory/regulation-making/policy-making bodies (Ministries, IAEA, ICNIRP etc.)	9
Industry associations (CIGRE, etc)	30
Other	0
TOTAL	200

Publications

A key output and dissemination tool for JRPs is publication of project outputs. To date there have been 101 publications in peer-reviewed journals.

The extent of co-publications, that is articles with authors from more than one organisation, provides an indicator of close collaboration between NMIs as well as between NMIs and a DI from another country. 72 % of all publications in peer reviewed journals are co-publications.

Please note, all publications must be open access and listed in our repository, otherwise they are not allowed to be counted as peer reviewed publications.

Table 17: Publications

Publications	
Articles in peer-reviewed journals	101
Proceedings	22
Good practice guides	0
Technical reports	3
Books	1
Theses	0
TOTAL	**127**

Published Open Access Peer reviewed Publications	
Published Open Access Peer reviewed Publications	127
Co-authored Published Open Access Peer reviewed Publications	92

Other dissemination
In addition to publications, conferences and contributions to standards committees, project partners have undertaken a wide range of other activities to disseminate project outputs including workshops, newsletters, articles in trade or popular press, websites, etc.

Table 18: Other dissemination

Dissemination activities	No.
Presentation to external audience	89
Website	56
Article published in the popular press	31
Article published in trade / professional press	5
Project event / workshop / seminar	17
Exhibition	8
Newsletter, flyer, leaflets	33
Media interview / media briefing /TV or radio clip	17
Video /film	5
Communication with the public / public report	8
email lists, social networking, etc.	63
Other	63
TOTAL	395

Annex 1 Payments to Partnership Projects→ Excel file

Annex 2 Previously published documents

This annex contains the following documents which were available during 2024 but are included again here for completeness. They are included in their original form and not reformatted to match the page numbering of the bulk of this report.

1. Scope documents for the 2024 Call
2. Review Conference Agendas 2024
3. Independent Observer's Report Call 2024
4. Summary of projects of call 2021,2022, 2023 and summary of selected projects of call 2024 which are still under negotiation
5. Publishable Summaries of all funded projects

Annex 3 List of specific events promoting Partnership