

3.2 Targeted Programme - Metrology for Energy

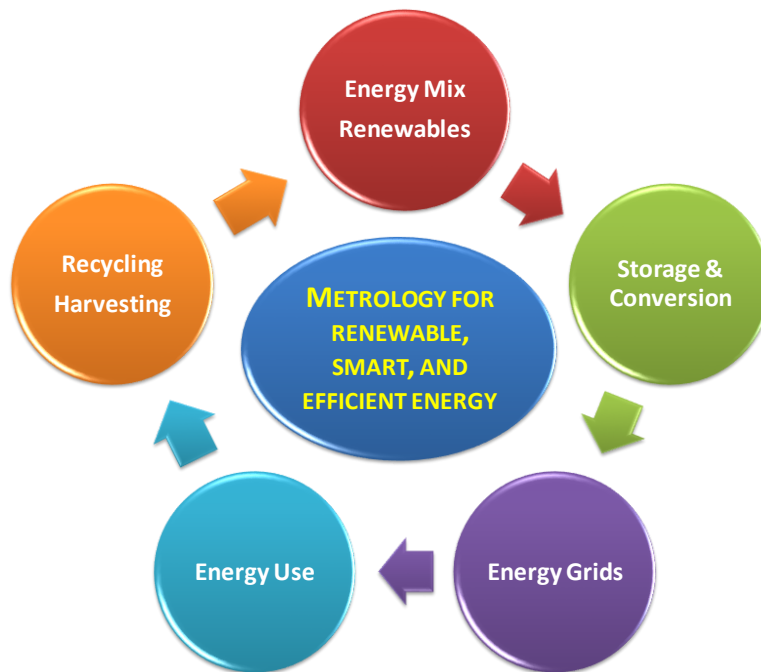
Scope for the call for proposals¹

The strategic aim of the Targeted Programme “Metrology for Energy” (TP Energy) under the EMPIR Call 2019 is to support and accelerate – through metrological research and development – the on-going Energy Transition in order to achieve a low-carbon economy based on secure, clean and efficient energy.

The TP Energy focusses on metrology R&D in four core priority areas. Three are set by the EU Energy Union Strategy: renewable energy, smart energy systems, and energy efficiency. In this way, this Call will leverage the EU efforts in complementary H2020 programmes. An additional priority is storage and energy conversion: crucial to achieve the EU energy aims but with very limited EU-funded metrology research so far.

These TP Energy priorities are well in line with the EU ambitions as set out in the 20/20/20 targets of the 2020 EU climate and energy package, as well as the even more challenging targets set for 2030.

The following diagram visualises the central theme of the Call and the five elements of the energy chain along which the TP Energy is organised:



The overarching focus of all proposals should be to contribute to the central TP objective of supporting the Energy Transition towards a renewable, smart, and efficient energy landscape.

Energy efficiency is a crucial theme for the complete energy chain, and the first core priority of this Call: any energy that is not used or wasted does not have to be generated and thereby saves precious resources. Therefore, projects focussing on quantifying and improving energy efficiency are particularly encouraged.

It is envisaged that metrology R&D can contribute significantly to tackling challenges in each of the five elements of the energy chain:

¹ The scope of this call for topics will be published at <http://msu.euramet.org/> at the consultation phase.

- Concerning energy generation, the uptake of renewable energy sources (RES) in improving the energy mix is the second core priority of this Call. Next to already existing metrology R&D on biofuels and PV, this Call welcomes projects on other renewable energy sources such as wind and thermal solar energy.
- Storage and energy conversion is an area where EMRP- and EMPIR-funded metrology research presently is essentially non-existing. At the same time, the variable nature of RES makes energy storage and conversion crucial for achieving the EU energy aims. This Call therefore has storage and energy conversion at its third core priority and explicitly asks for projects in these highly-relevant areas, for example on batteries, fuel cells, conversion of power to gas or to other energy carriers (alternative fuels).
- Electricity grids play an eminent role in the security of supply, the uptake of RES in the energy mix, and in making our energy system smart (the fourth core priority of this Call). This Call therefore invites projects that further the development of smart electricity and gas grids, and encourages research that includes links between these grids, with heating/cooling grids, and with the area of storage and conversion.
- The attention to energy use has significantly grown in the past years, resulting in several projects related to the transport sector in the 2016 TP Energy Call. In recognition of this trend, this Call invites projects on energy use such as transportation, buildings, heating/cooling, etc. It is expected that several of the metrology challenges in this area will relate to energy efficiency (the first core priority of this Call).
- Energy recovery helps minimising the use of precious energy sources. Therefore, projects on energy recycling (re-use of waste energy) and energy harvesting are within the scope of this call.

Materials, modelling, and data science are three cross-cutting disciplines relevant for energy-metrology R&D and therefore are envisaged to be parts of or even the main subject of projects proposed in this Call. In particular, metrology contributions to big data and data analytics are welcomed since this is key to make our energy system smart (the fourth core priority of this Call).

Standards and regulations, e.g. on efficiency, are an important driver for metrology R&D within the TP Energy. All proposed projects should aim to contribute to and support standardization.

This Targeted Programme is related to the previous calls on Metrology for Energy in EMRP and EMPIR and will allow projects that further the aims of existing projects. This call complements the call within TP Environment – launched in parallel – which includes metrological R&D on energy-related subjects.

An overarching objective of this Targeted Programme is to stimulate collaborative research and development of a coordinated European landscape of energy metrology capabilities, especially on challenges where an interdisciplinary approach is required, beyond the capabilities of single NMIs and DIs. It strongly encourages the establishment of links with other H2020 programmes and the collaboration with user communities, especially in new areas with limited metrology effort so far.

Eligibility and admissibility conditions:

For this call, the general eligibility and admissibility conditions under the EMPIR programme (see General Annexes to this work plan) will be applied.