European Metrology Research Programme

Sustainable Energy

An overview of the funded projects from the EMRP Call 2009 - ENERGY

EURAMET
European Association of National Metrology Institutes

Fuels for the future

Metrology for Biofuels (ENG09)

Making biofuels part of the European fuel mix

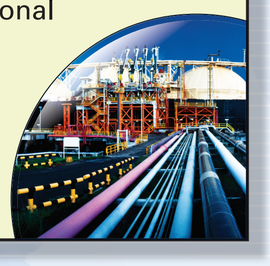
This project will provide validated, reliable and traceable methods to measure the physical and chemical properties of biofuels, particularly those used in the automotive and aviation sectors. These measurement methods will help ensure the sustainable contribution of biofuels to EU energy supply and improve public confidence in them.

Feeding gas grids

Metrology for Liquefied Natural Gas (ENG03)

Enabling natural gas trading between countries not served by pipelines

This project will strengthen the measurement framework for Liquefied Natural Gas (LNG), important for international energy trading, with an expected halving of measurement uncertainties. It will also disseminate knowledge through training, workshops and contribution to international standards and guidelines.



Harvesting waste energy

Metrology for Energy Harvesting (ENG02)

Developing sources of sustainable energy from human activity and natural processes

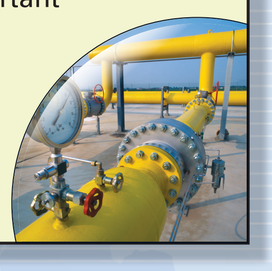
The harvesting and utilisation of a small fraction of energy wasted as heat and vibration from human and environmental processes could contribute to a reduction in CO_2 emissions. This project aims to develop new technologies, devices and measurement methods that enable the exploitation of waste energy to provide small, but reliable and sustainable, sources of power.

Greener alternatives to natural gas

Characterisation of Energy Gases (ENG01)

Enabling alternative and renewable gaseous fuels to be used in the European gas pipeline system

The current standards of measurement for natural gas will be tested for their suitability for measuring the properties of alternative gases, such as biogas. Important measurements include gas composition, calorific value (energy content) and humidity, which are all needed to ensure efficient trade, safe use and transportation.

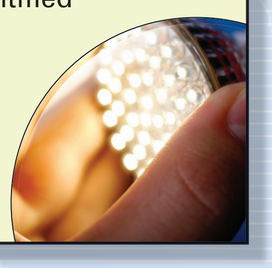


The future of lighting

Metrology for Solid State Lighting (ENG05)

Enabling the uptake of low energy Solid State Lighting (SSL)

This project will support the implementation of SSL, such as LED lighting, throughout Europe with the validation of new guidelines and standards. These will enable the benefits of the technology to be quantified and clearly communicated, with specific attention paid to measurements of colour rendition and visual comfort, important for end-users.



Making power plants more efficient

Metrology for Improved Power Plants (ENG06)

Better measurement gives better control

This project will develop methods and technologies to increase the efficiency of large-scale power plants by reducing the measurement uncertainty of several critical parameters, including temperature and electrical output. Research will also be carried out into advanced materials that could be used to build more energy-efficient turbines in the future.

Feeding electricity grids

Metrology for High-Voltage Direct Current (ENG07)

Enabling the efficient transmission of electricity generated by remote renewable energy sources

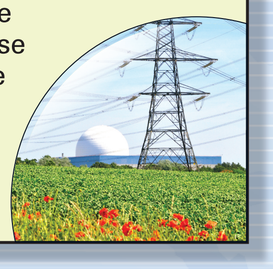
This project will develop a new measurement framework, calibration capabilities and equipment, such as prototype DC energy meters, that will assist in the widespread implementation of High-Voltage Direct Current (HVDC) transmission, necessary to ensure the efficient transport of electricity over large distances - from where it is produced to where it is needed.

New nuclear

Metrology for New Generation of Nuclear Power Plants (ENG08)

Enabling a new generation of nuclear power stations

This project aims to address the measurement challenges posed by new 'Generation IV' nuclear reactor designs by testing temperature measurements and materials for suitability and ensuring sufficient nuclear data and radiation measurement techniques are available. This is vital because the new designs will operate at higher temperatures than current reactors.



Modernising electricity grids

Smart Electrical Grids (ENG04)

Making smart grids smarter

While the hardware required to implement smart grids is available, the theoretical and practical knowledge required to ensure their stability is not. This project aims to improve the accuracy of on-site measurements, vital for maintaining the quality of electricity supply and developing smart grids capable of dealing with decentralised electricity production.

Europe's National Measurement Institutes working together

The European Association of National Metrology Institutes (EURAMET) has implemented the European Metrology Research Programme (EMRP), a programme with a value of over 400 M€, organised by 22 NMIs and supported by the European Union.

Full details can be found at: **www.euramet.org**

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