

Joint Research Centre (JRC)

David Anderson
Communication Officer



IRMM - Institute for Reference Materials and Measurements

Geel - Belgium

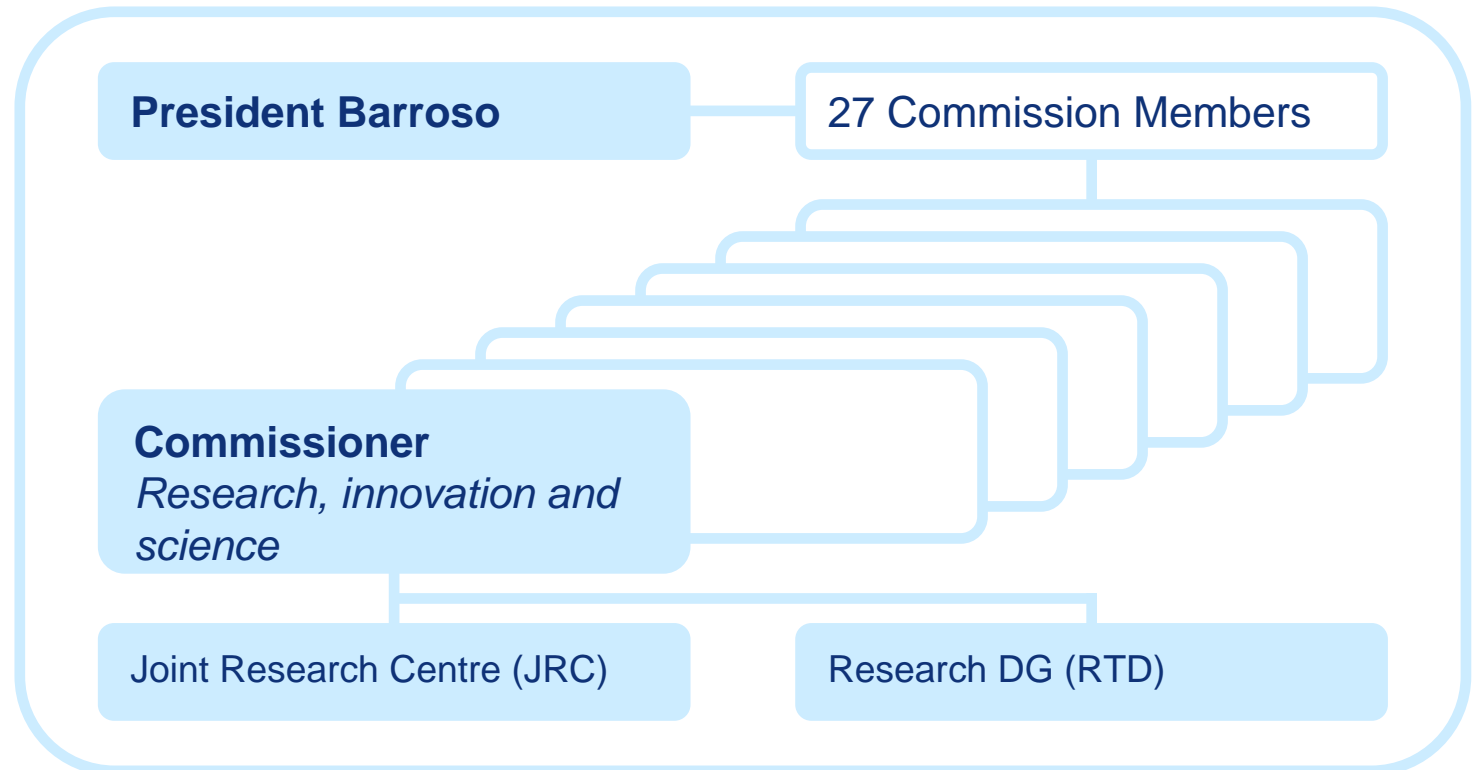
<http://irmm.jrc.ec.europa.eu/>

<http://www.jrc.ec.europa.eu/>



Commissioner

Maire Geoghegan-Quinn



10:15	Ribbon-cutting ceremony. Speeches from: -Kris Peeters, Flemish Minister-President -Heinz Zourek, Director-General, DG Enterprise and Industry, European Commission -Krzysztof Maruszewski, Director, Institute for Reference Materials and Measurements (IRMM), Joint Research Centre (JRC), European Commission
11:00	Briefing on JRC, IRMM and day logistics. David Anderson, JRC-IRMM communication officer
11:30	Briefing and Q&As on JRC-IRMM's reference materials activities. Thomas Linsinger, Senior scientist, JRC-IRMM's Reference Materials Unit.
12:00	Buffet lunch (Atrium)
13:15	<i>Transfer to conference building</i>
13:30	Reference materials for material science and technology (keynote lecture at the "Future of reference materials" workshop, 23-25 Nov at JRC-IRMM. Full programme available here). Manfred Hennecke, Federal Institute for Materials Research and Testing, Germany
14:00	<i>Transfer back to reference material production building</i>
14:10	Tour of the new reference materials laboratories -Hendrik Emons, Head of Reference Materials Unit at JRC-IRMM, Thomas Linsinger, Senior scientist, JRC-IRMM's Reference Materials Unit. -Several JRC-IRMM scientists will be on hand to discuss specific applications of reference materials (clinical, food safety, environment), Q&As
15:10	Explanation and laboratory tour of the food safety activities -Anne-Mette Jensen, Action Leader in the Food Safety and Quality Unit at JRC-IRMM
15:30	<i>Transfer to food safety laboratory tour</i> -Anne-Mette Jensen, Action Leader in the Food Safety and Quality Unit at JRC-IRMM -Franz Ulberth, Head of Food Safety and Quality Unit at JRC-IRMM -Several JRC-IRMM scientists will be on hand to discuss specific food safety issues, Q&As
16:15	Departure from JRC-IRMM
17:30	Estimated arrival time to Zaventem airport
18:00	Estimated arrival time to Midi train station (Brussels)

7 Institutes in 5 Member States

IRMM - *Geel, Belgium*

Institute for Reference Materials and Measurements

ITU - *Karlsruhe, Germany*

Institute for Transuranium Elements

IE – *Petten and Ispra, The Netherlands and Italy*

Institute for Energy

IPSC - *Ispra, Italy*

Institute for the Protection and Security of the Citizen

IES - *Ispra, Italy*

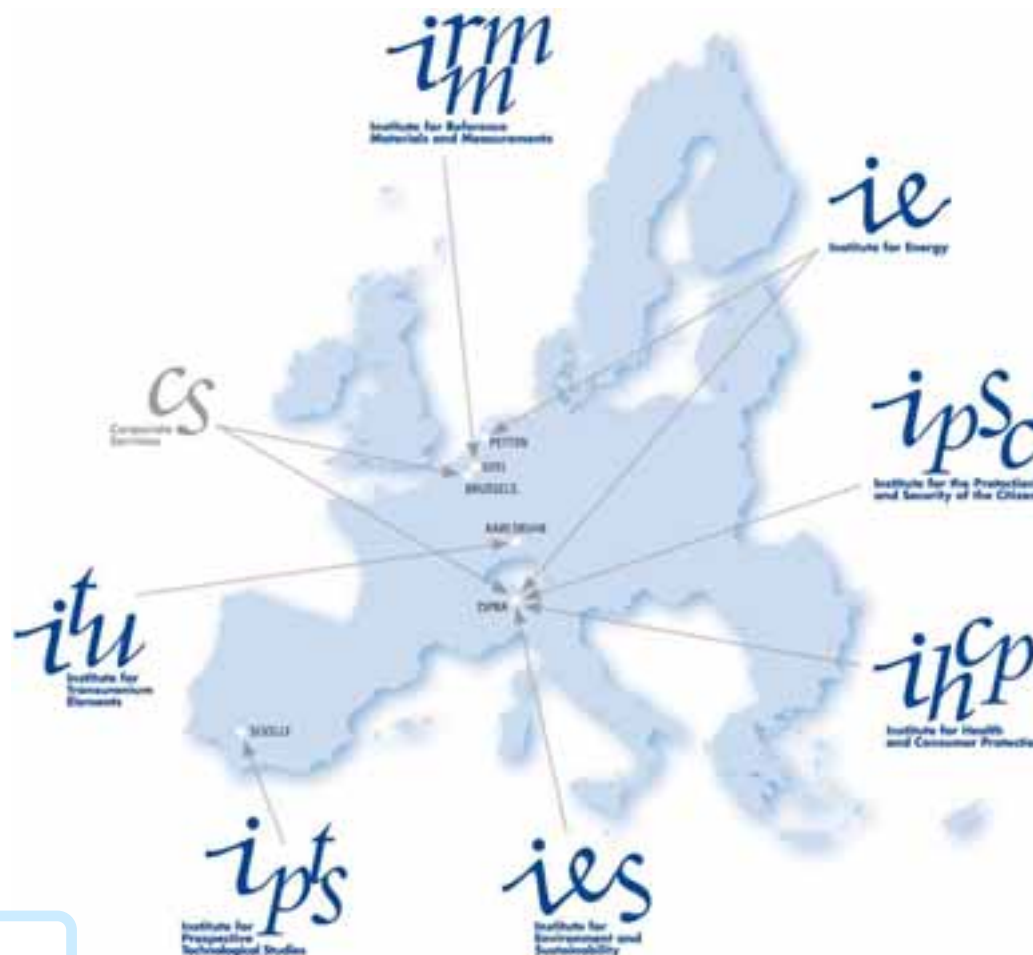
Institute for Environment and Sustainability

IHCP - *Ispra, Italy*

Institute for Health and Consumer Protection

IPTS - *Seville, Spain*

Institute for Prospective Technological Studies



~ 2750 staff

~ 345 M€y institutional budget (+ 60 M€y earned income)

7th Framework Programme (FP7)



**Specific programme
“JRC direct actions”**

2007-2013

1,751 M€

**EURATOM programme
“JRC direct actions”**

2007-2011

517 M€

FP7 indirect actions

**Collaboration with national
public and private research
institutes, academia,
industry and international
bodies**



- **Fighting pollution**
- **Performing controls via remote sensing**
- **Providing sound advice on chemical risks**
- **Preventing nuclear trafficking**
- **Researching earthquake-proof buildings**
- **Improving testing for safer food**
- **Fuelling the hydrogen economy**
- **Responding to natural disasters**
- **Enhancing reactor safety**
- **Monitoring and analysis green technology**
- **Providing quality assurance tools**
- **Supporting Europe's information society**
- **Monitoring companies' R&D spending**



...is to be a trusted provider of science-based policy options to EU policy makers to address key challenges facing our society, underpinned by internationally-recognised research.



JRC Strategy 2010-2020



Towards an open and competitive economy



Development of a low carbon society



Sustainable management of natural resources



Safety of food and consumer products



Security and crisis management



Reference materials and measurements



Nuclear safety and security

**JRC
Thematic Areas**



...is to provide customer-driven scientific and technical support for the conception, development, implementation and monitoring of EU policies.

As a service of the European Commission, the JRC functions as a reference centre of science and technology for the Union.

Close to the policy-making process, it serves the common interest of the Member States, while being independent of special interests, whether private or national.



... is to promote a common and reliable European measurement system in support of EU policies.

Such checks shall in particular aim at ascertaining that the level of melamine, if any, does not exceed 2,5 mg/kg product.

'3. For products intended for direct processing, paragraph 1 shall not apply to traces of authorised GMOs in a proportion no higher than 0,9 % or lower thresholds established under the provisions of Article 30(2), provided that these traces are adventitious or technically unavoidable.'

(5) The addition to chocolate products of vegetable fats other than cocoa butter, up to a maximum of 5 %, is permitted in certain Member States.

(Estimated that 40% of EU Directives involve measurements)

"The Joint Centre shall include:

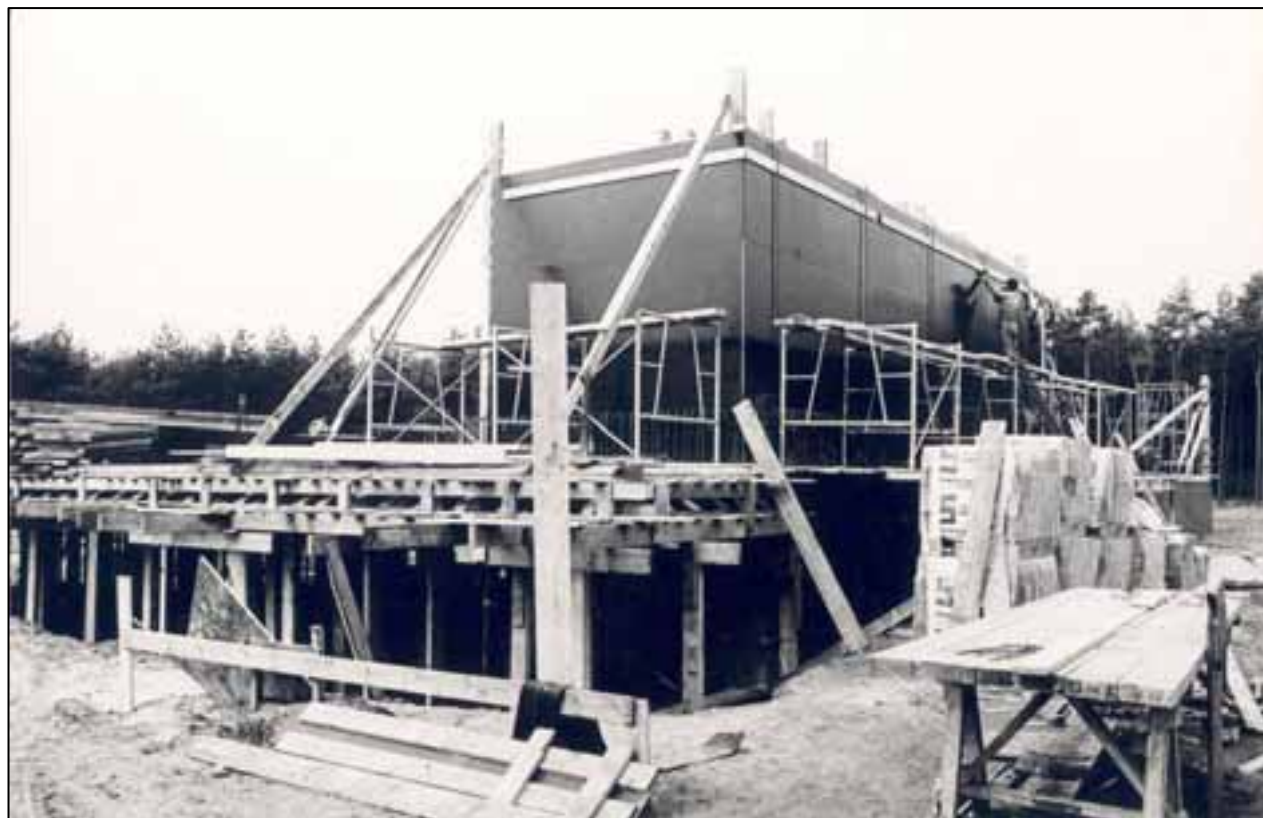
*... **a bureau of standards** specialising in nuclear measurements for isotope analysis and absolute measurements of radiation and neutron absorption, equipped with its own experimental reactor."*

Euratom Treaty, Annex V, 1957

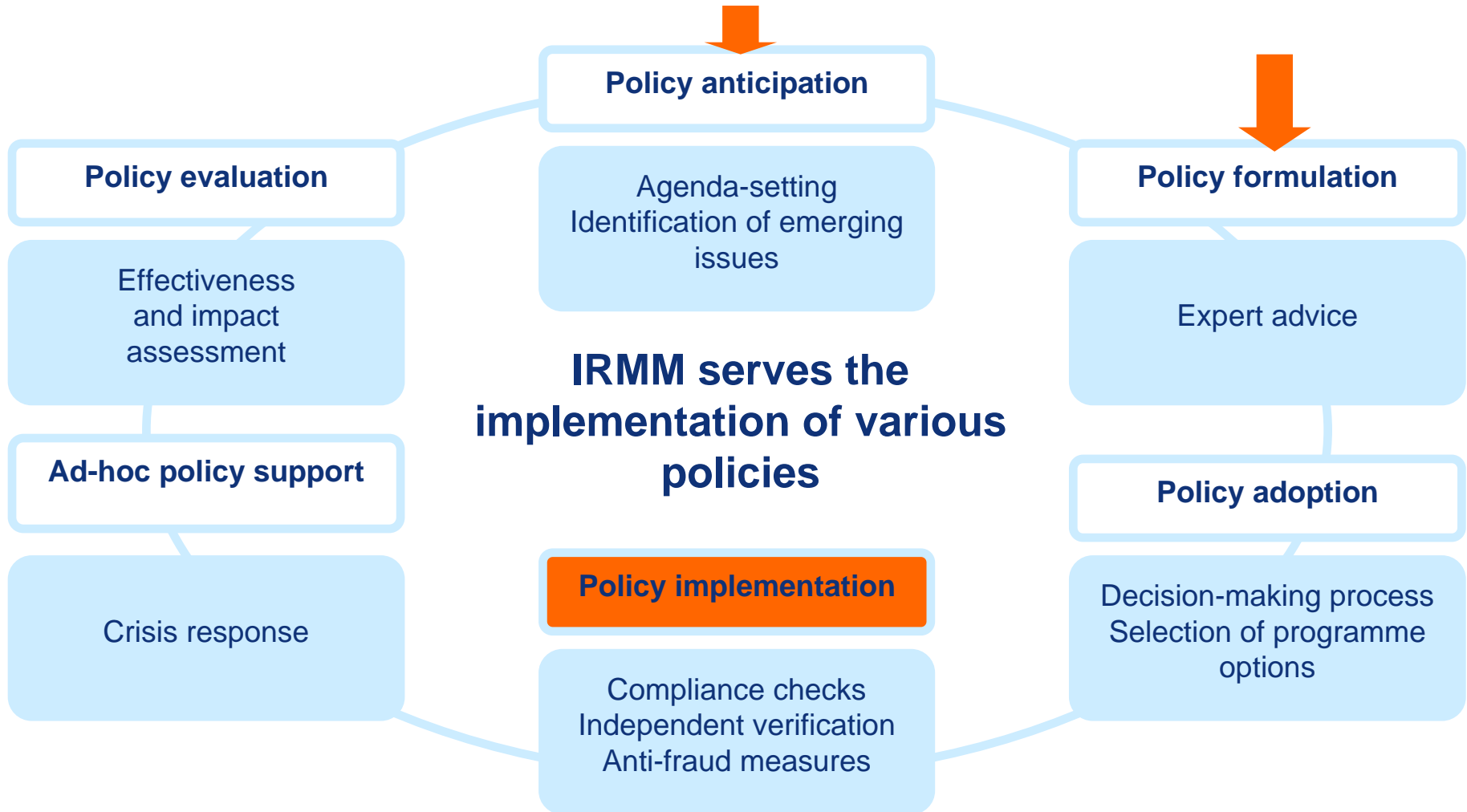


- Interaction of neutrons with matter is of great importance:
 - evaluating safety and risks of nuclear power plants
 - nuclear waste management
 - new concepts of nuclear power production.
- Still extremely relevant today with revival of nuclear energy

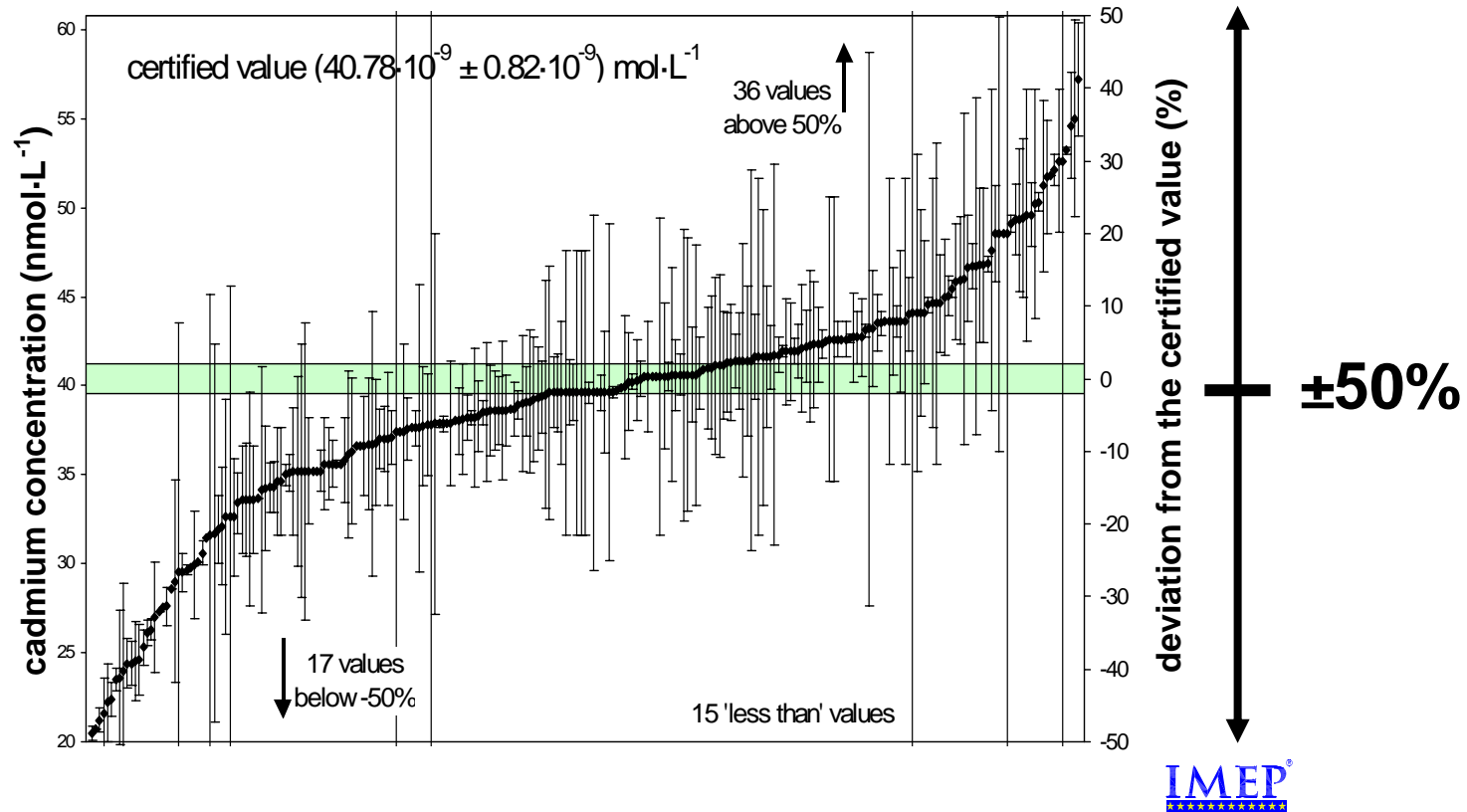




Het S.C.K. stelt een terrein van ongeveer 30 ha ter beschikking van de Gemeenschap, in het kader van een erfpachtovereenkomst van 99 jaar, tegen een jaarlijkse symbolische canon van 1 EMO-rekeneenheid. Dit terrein wordt afgebakend overeenkomstig de plattegrond in Bijlage I welke onafscheidelijk deel uitmaakt van deze overeenkomst.



- Better measuring techniques → better labelling and monitoring by national authorities → improved **safety of food**
- More accurate and globally comparable medical measurements and harmonised diagnostic values across countries → improved **quality of life** and **cost effectiveness** of the National Health Systems
- Better environmental measurements and monitoring → better **quality of air, water and soil**
- Comparable testing results → **less barriers** to cross-border trade in the EU and worldwide
- Appropriate measurement standards at an early stage of emerging technologies and services → **enhanced innovation**
- Comparable nuclear measurements → improved **security** of new and existing nuclear power plants at reduced costs
- Contributions to solutions for nuclear waste transmutation → better handling of **nuclear waste**



- Effective legislation depends on accurate measurements
- JRC-IRMM provides the tools to measure properly and in a harmonised way.



BSE/TSE testing	Regulation (EC) No 999/2001	JRC-IRMM approved testing methods. More tests on the market led to significant drop in price of the diagnostics kits, hence reducing the subsidies paid by the EC to the Member States
melamine in milk products	Commission Decision 2008/798/EC	JRC-IRMM carried out proficiency test involving labs from 31 countries, including Australia, China, India, Japan, New Zealand, the United States of America, and 21 EU Member States
heavy metals in toys	Directive 88/378/EEC	JRC benchmarked laboratories measuring eight heavy metals whose safety limits are set out by the Toy Safety Directive
foreign fats in milk chocolate	Directive 2000/36/EC	JRC-IRMM testing method adopted as ISO standard
mineral oil in sunflower oil	Commission Decision 2008/433/EC	JRC-IRMM carried out proficiency test involving 55 analytical laboratories from 17 EU Member States & Switzerland
radioactivity in drinking water	Directive 98/83/EC	In anticipation of new legislation, JRC-IRMM carried out an interlaboratory comparison to help laboratories improve their ability to measure low levels of radioactivity in drinking water

JRC-IRMM is a leading reference material developer worldwide

- 760 different materials (measurement standards)
- 20-30 new ones every year
- 20,000 units distributed per year
- IRMM major international player
- strong in quality of life applications (e.g. clinical, GMO, food)
- JRC-IRMM developed **world's first** certified reference material for detection of GMOs in food

Some examples:

- mycotoxins in peanut butter
- banned flame retardants (RoHS Directive)
- clinical (liver enzymes & C-reactive protein)
- microbiology (*Candida albicans*)
- nuclear safeguards



JRC evaluation 2008 (led by Sir David King):



- *“It is ... a great asset for measurement science in Europe to have a JRC Institute of high scientific standing and reliability that deals with all matters of general interest in this area and at the same time also produces a good number of reference materials itself.”*
- *“The JRC work on reference materials and measurements at the IRMM provides a cornerstone for the development of a common European measurement system.”*

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- threshold for labelling set by legislation to 0.9% (Regulation (EC) 1830/2003)
- measurement unit not defined, giving room for different interpretations (industry, control laboratories)
 - mass fraction
 - copy number
 - number of seeds
- King report: “The JRC is recognised as the world leader in the GMO field of setting standards for GMO detection and in GMO certified reference materials which are essential tools for GMO quantification (bio-metrology) in the context of GM labelling of feed and food.”

- Development of new and increasingly complex technologies → need for reliable measurements is growing
- Supporting the implementation and monitoring of legislation becomes increasingly demanding:
 - tendency towards lower thresholds
 - a wish to measure substances or properties that are not yet defined
 - measurement units appear in legislation that are not science- based
 - quality criteria requested in legislation are unspecific and not linked to international standards etc.
- A need for more accurate nuclear data with the revival of nuclear energy

- Enhanced customer interface → EU reference centre in the field of measurements, from inception to implementation
- Focus on solving more complex problems
- Tackle new and emerging areas of research
 - metrology for nanotechnology
 - “-omics” (genomics, proteomics, metabolomics & metabonomics)
 - genetic testing
 - pharmaceuticals development and personalised medicine

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