WELCOME!

Joint ICTP-IAEA Workshop on Radioactive Waste Management - Solutions for Countries without Nuclear Power Programme

2 November - 6 November 2015, Trieste, Italy

We greatly acknowledge ICTP for hosting this Workshop

Countries without Nuclear Power Programme:

Small users:

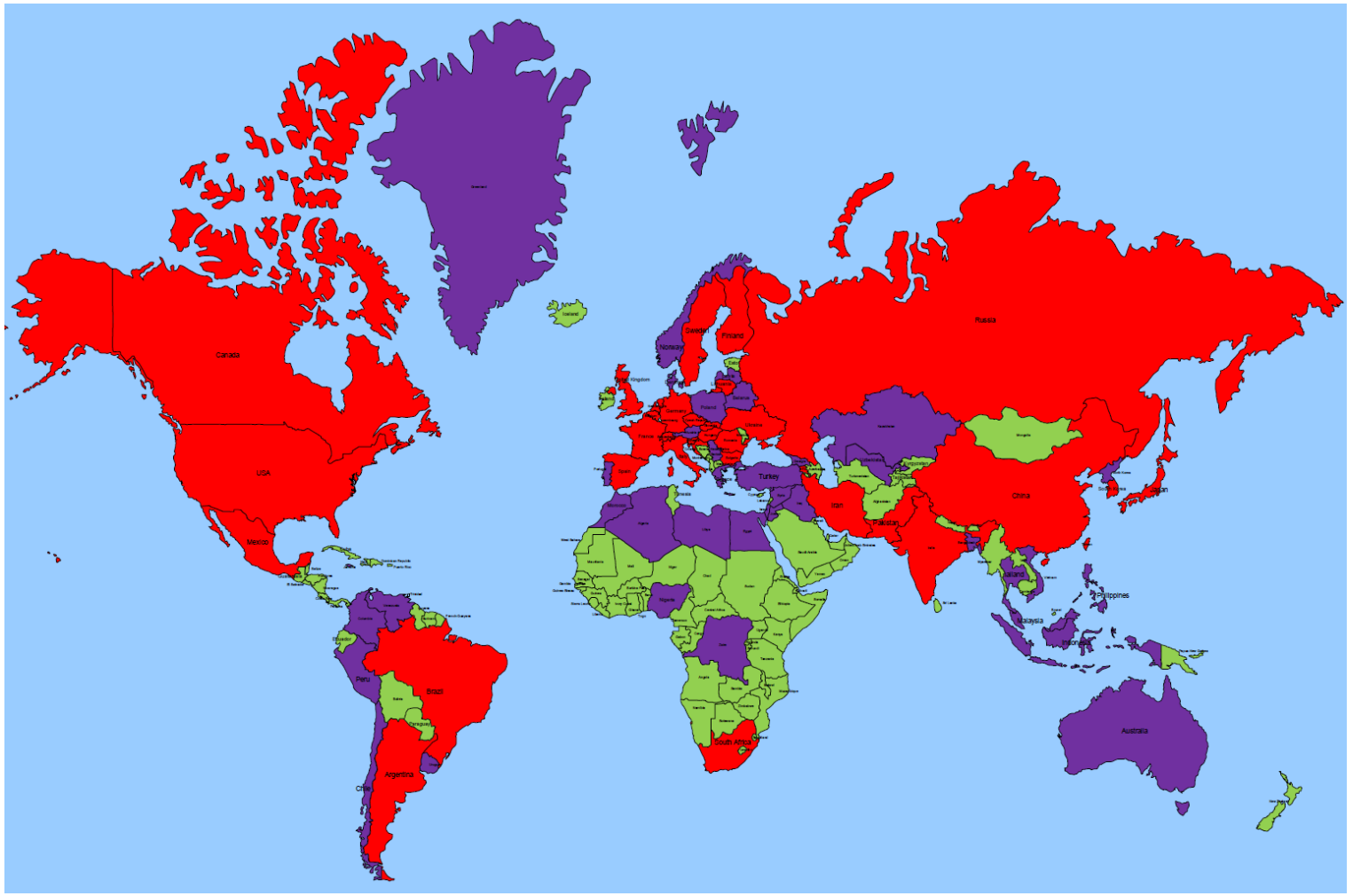
represent probably the largest number of facilities with a wide range of wastes involving a wide range of different radionuclides

or/and

Countries with large volume of naturally occurred materials (NORM)

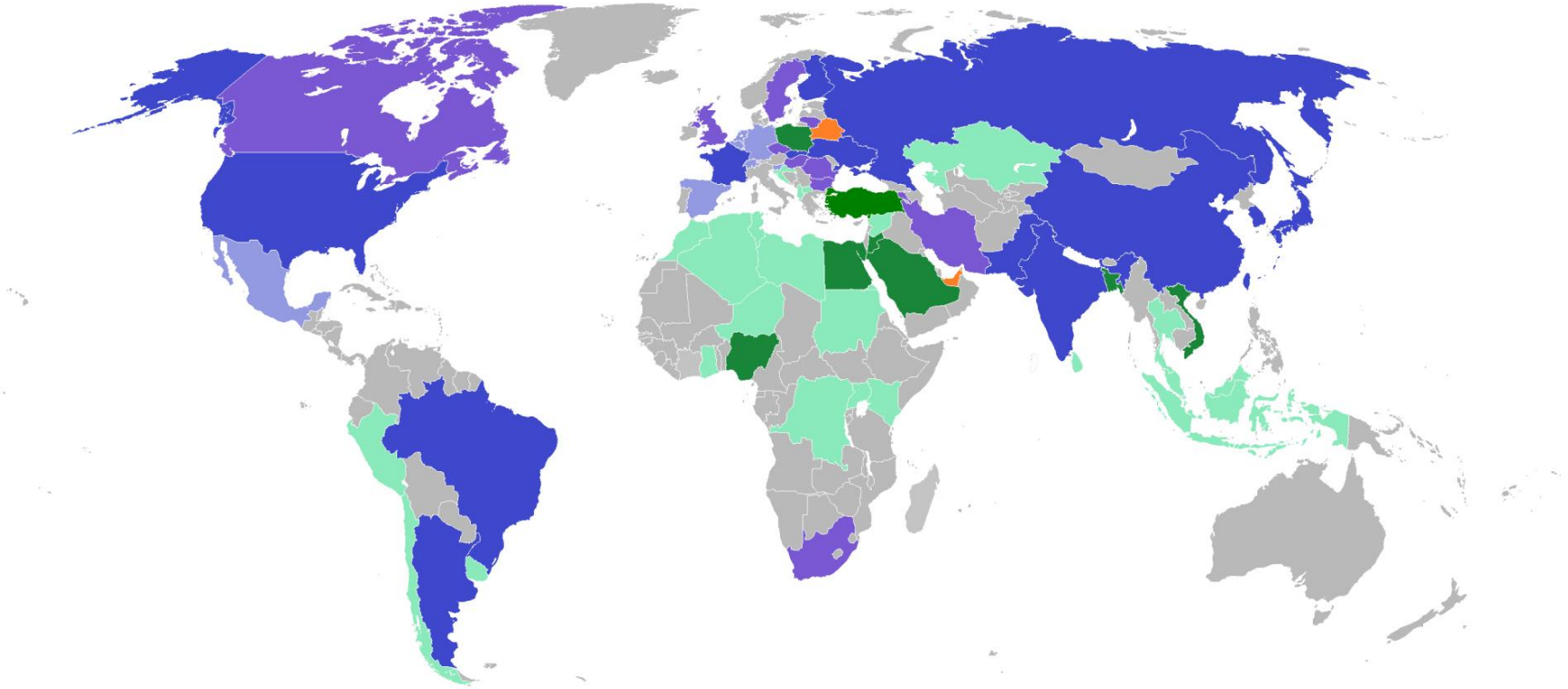
RW inventory predominantly from peaceful NT use of:

purple: RR
red: NPP
green: SRS



Global use of / plans to introduce nuclear power

Status: Q2-2014



- Operating
- Operating and Constructing
- Operating with plans to expand
- 1st NPP Under Construction
- Considering nuclear power introduction
- Decided to introduce nuclear power

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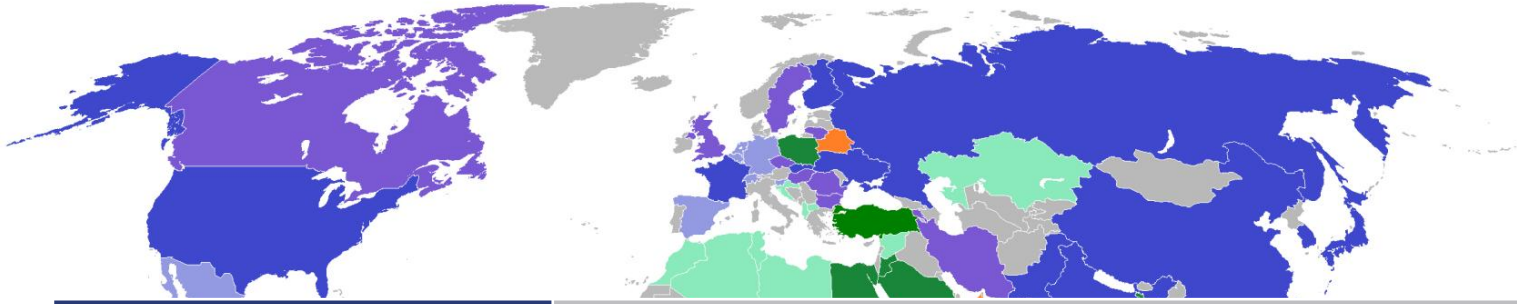


First nuclear power plant ordered	**Belarus, Turkey, UAE**
Decided and started preparing infrastructure	Bangladesh, Vietnam, Egypt, Jordan, Nigeria, Poland
Active preparation with no final decision	Chile, Indonesia, Malaysia, Morocco, Thailand, Saudi Arabia
Considering nuclear power programme	Albania, Algeria, Croatia, Estonia, Ghana, Kazakhstan , Kenya, Libya, Mongolia, Niger, Syria, Sudan, Tunisia, Uruguay
Not planning, but expressed interest in considering issues	Benin, Cameroon, Congo, Laos, Malawi, Namibia, Oman, Qatar Philippines, Singapore, Sri Lanka, Tanzania, Uganda

Operating

Operating and Constructing

Operating with plans to expand

1st NPP Under Construction

Considering nuclear power introduction

Decided to introduce nuclear power

Sources of Radioactive Waste

Modern life is filled with technology whose production or use may generate radioactive waste.

This waste is an **unavoidable by-product** when radioactive material is used for electricity production and in nuclear technology for **beneficial practices** in medicine, agriculture, research and industry.

Medical applications

- in vitro radioassay and research
- in vivo use of radiopharmaceuticals
- radiotherapy using sealed sources for brachitherapy or teletherapy

Application in Research and Education

- calibration
- development of radio-labelled compounds
- study of metabolic, toxicological or environmental pathways
- clinical processes and applications
- basic research (physics, chemistry, engineering)

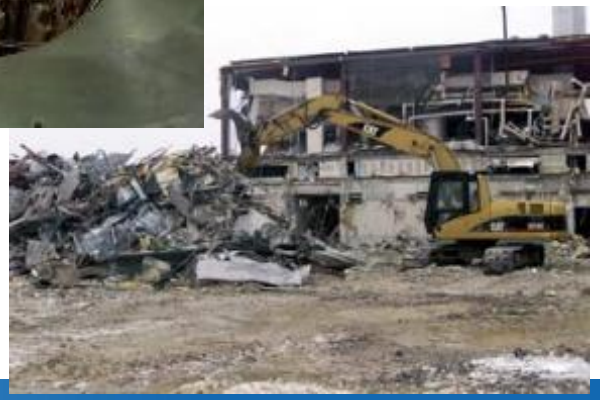
Industrial, agricultural and other applications

- production and labelling of compounds
- manufacture of radioactive sealed sources
- use of radioactive material for scientific measurements/ calibration
- oil exploration and well logging
- process and plant control
- non- destructive testing and QC
- water treatment
- sterilization
- food irradiation

Consumer products

- smoke detectors
- luminous devices
- lightening rods

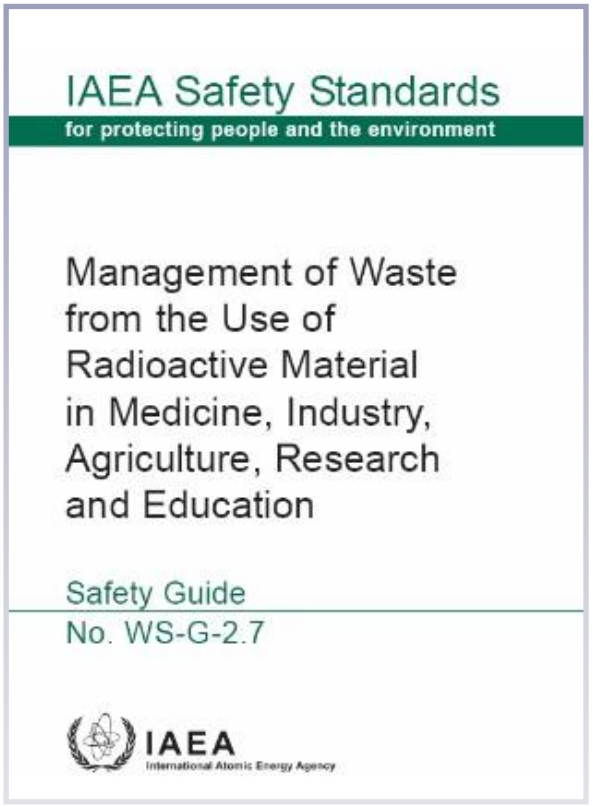
Radioactive waste to be safely managed



International Atomic Energy Agency

All nations are responsible for the safe & secure management of their national inventory.

Radioactive waste management may be carried out **locally** (on the site of origin, waste generator), at a **national** and/or **regional** waste management facility, or a combination of both.



There are requirements, guides and technical reports for all facilities irrespective of size and complexity.

Purpose:

The workshop aims to advise countries having small amount of radioactive waste from different applications on how to effectively create infrastructure for safe management their radioactive waste, including spent fuel from research reactors, NORM and disused sealed sources.

Focus:

To **create awareness** of the technical inputs and waste characteristics necessary for establishing or upgrading national infrastructure for **safe and efficient management** of radioactive waste.

Participants will be informed about the **approaches** and **recent trends** in waste management, typical waste characteristics and their interpretation for **assessing technological waste management options**, their incorporation in a national waste management system.

Topics:

- Waste management principles
- Policy and strategies
- Waste characterisation relevant to technology selection
- Technologies to be considered for processing particular waste streams and types
- Storage and disposal options
- Waste management facility development procedures

Modus operandi:

Presentations by the invited lecturers:

Ian Crossland (Crossland Consulting, UK)

Peter Ivanov (National Physical Laboratory, UK)

Eric Howell (Facilia Projects, Austria)

Presentations by the IAEA lecturers:

Michael Ojovan

Peter Ormai

National presentations

Points to be highlighted in the national briefings

- Main sources of radioactive waste (DSRS, NORM, RR SF)
- National waste inventory (current and future)
- National policy / national plan for managing RW
- Availability of resources (human, technical and financial)
- Institutional framework for managing RW (regulator, operator, TSO)
- Management options considered for DSRS, NORM, LLW, RR SF, other
- Disposal plan (if any)
- Topics worth discussing at the meeting

Work-shop

Workshop is composed of two words:

Work: we are here to work together and to have an exchange of ideas and thoughts (brainstorming) on the subject, and,

Shop: the workshop gives everyone of us the opportunity to share (or shop) the available/gathered information, without having to pay for it.

How to get the most out of a workshop?

This workshop belongs to you and its success rests largely with you!

Say what you think !

Enter into the discussion, enthusiastically!

Dont be shy asking questions!

Ask for clarification or more explanation!

Make comments!

Be open to reveal concerns, problems, challenges in your country!

You can challenge the lecturers!

Be patient with other members!

Appreciate others point of view !

Avoid private conversation while someone else is speaking!

Switch your mobile phone to silent mode !

Have a good meeting!