



Australian Government



Country Report - Australia

Current status of nuclear-related policies and application of
nuclear science and technology

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Australian Energy Policy

Federal Government



National Radioactive Waste Management Facility



The National Radioactive Waste Management Facility



Kimba, South Australia



Artist's impression of facility



Departmental oversight



Community meeting



Information session

Nuclear Science and Applications

Government support



ANM Mo-99 project



Australian
Synchrotron



Expanded
beamlines (OPAL)



New accelerators
(CAS)



ANSTO Nuclear Medicine Project

TWO PARTS

Mo-99 Facility

ANM

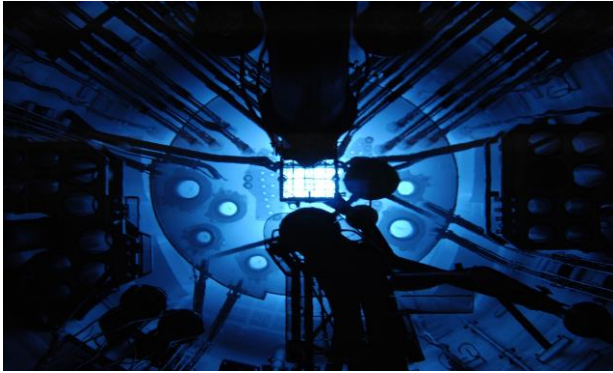


Synroc Waste Plant

SyMo



First part - the Mo-99 Production Process



LEU in reactor for irradiation & Mo-99 from fission process



Mo-99 separated



Waste immobilised in SYNROC process

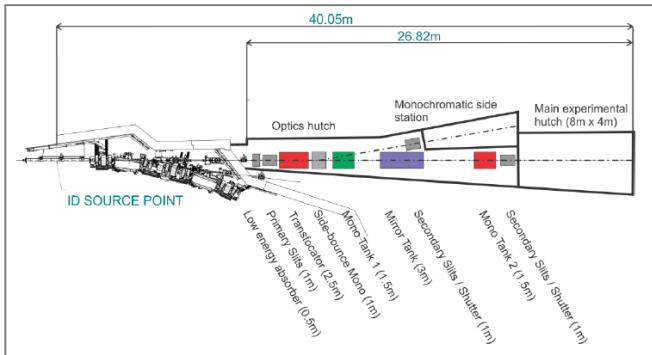


Tc-99m generator to customer or bulk exports

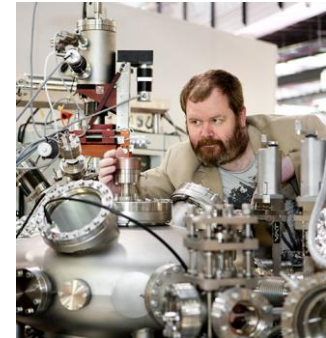
Australian Synchrotron



Australian Synchrotron



Minister for Industry,
Innovation and Science,
Arthur Sinodinos, at launch
of Project BR-GHT



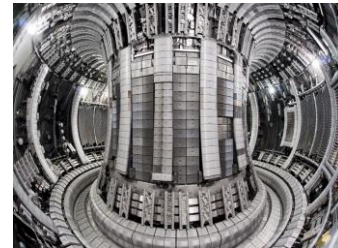
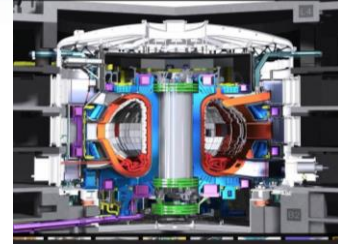
GEN IV International Forum

- 14 Sept 2017 - Australia deposited instrument of accession to the Generation IV International Forum (GIF) Framework Agreement for International Collaboration on Research and Development of Generation IV Nuclear Energy Systems.
- Australia became the 14th member of the GIF when it signed the GIF Charter.
- Allows active engagement in R&D projects related to Generation IV systems, particularly in R&D projects on advanced materials.



ITER – ANSTO Cooperative Agreement

- First time ITER has established a formal scientific and technical collaborative arrangement with a non-ITER member.
- To promote cooperation between ITER and ANSTO (and its partners in the broader Australian fusion research community).
- Framework for substantial cooperation to prove the feasibility of fusion as a large-scale and carbon-free source of energy.



Moss reveals effects of climate change

Problem

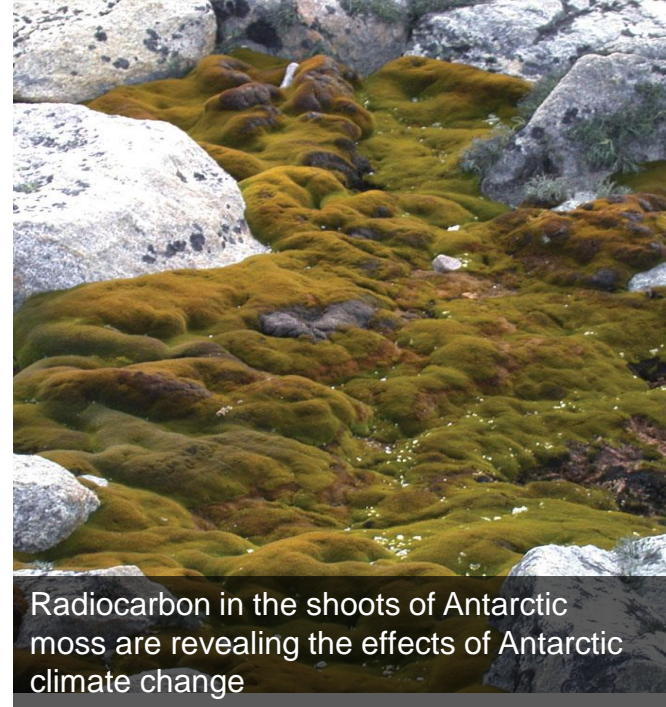
A need to understand how vegetation will respond to future climate change.

Approach

Scientists used radiocarbon dating and measured the depth of Antarctic moss colonies.

Results

Moss growth has declined since the 1980s most likely due to moss beds drying out due to increased wind speeds linked to the Antarctic ozone hole.



Radiocarbon in the shoots of Antarctic moss are revealing the effects of Antarctic climate change

Collaborator

Wollongong University

Fine Particle Aerosol Sampling Program - ASP

Source fingerprinting

Soil

Al

Si

Ca

Ti

Fe

Sea spray

Na

Mg

S

Cl

Br

Coal burning

H

C

S

As

Se



LOW

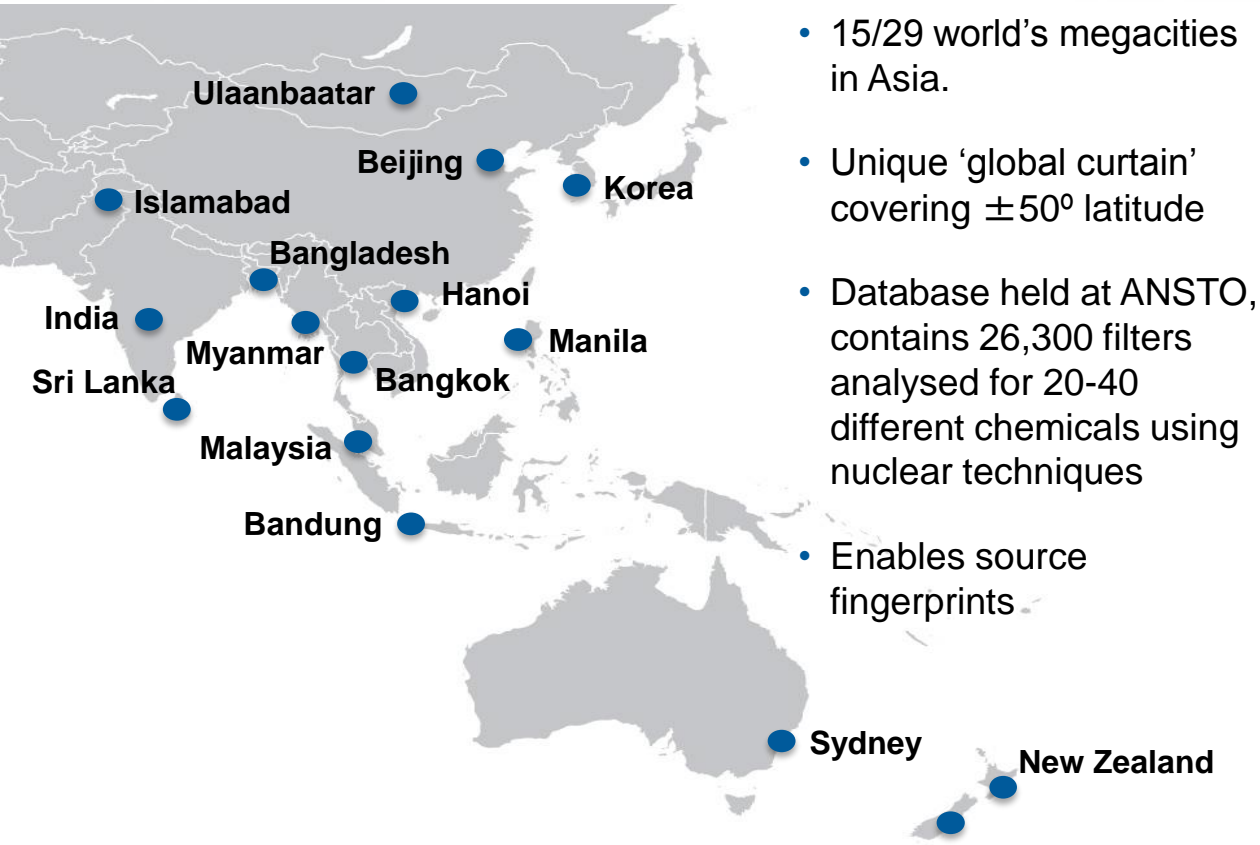


HIGH

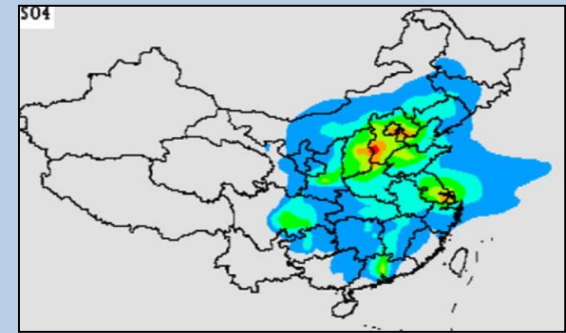
ASPO6

POLLUTION INDEX

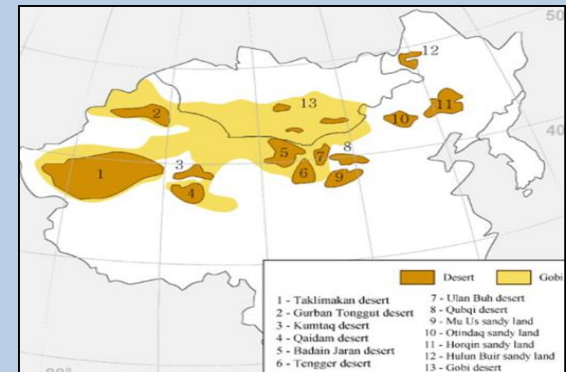
15 IAEA regional sampling sites



- 15/29 world's megacities in Asia.
- Unique 'global curtain' covering $\pm 50^\circ$ latitude
- Database held at ANSTO, contains 26,300 filters analysed for 20-40 different chemicals using nuclear techniques
- Enables source fingerprints



Sulphate – coal burning



Wind-blown desert soils

New climate change science project

- *Aim* - to better understand the mechanisms and processes of past climate variability through nuclear and isotopic based techniques and analysis with the goal of interpreting the drivers of the Earth's climate system.
- Sponsored by Australia (ANSTO).
- Participating countries – AUL, BGD, CPR, INS, JPN, KAZ, MAL, MON, PHI, THA, VIE.
- First project workshop – ANSTO, Sydney, 24-27 Oct, 2017



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Thank you
