



Looking Forward: *Nuclear Energy Issues and Opportunities*

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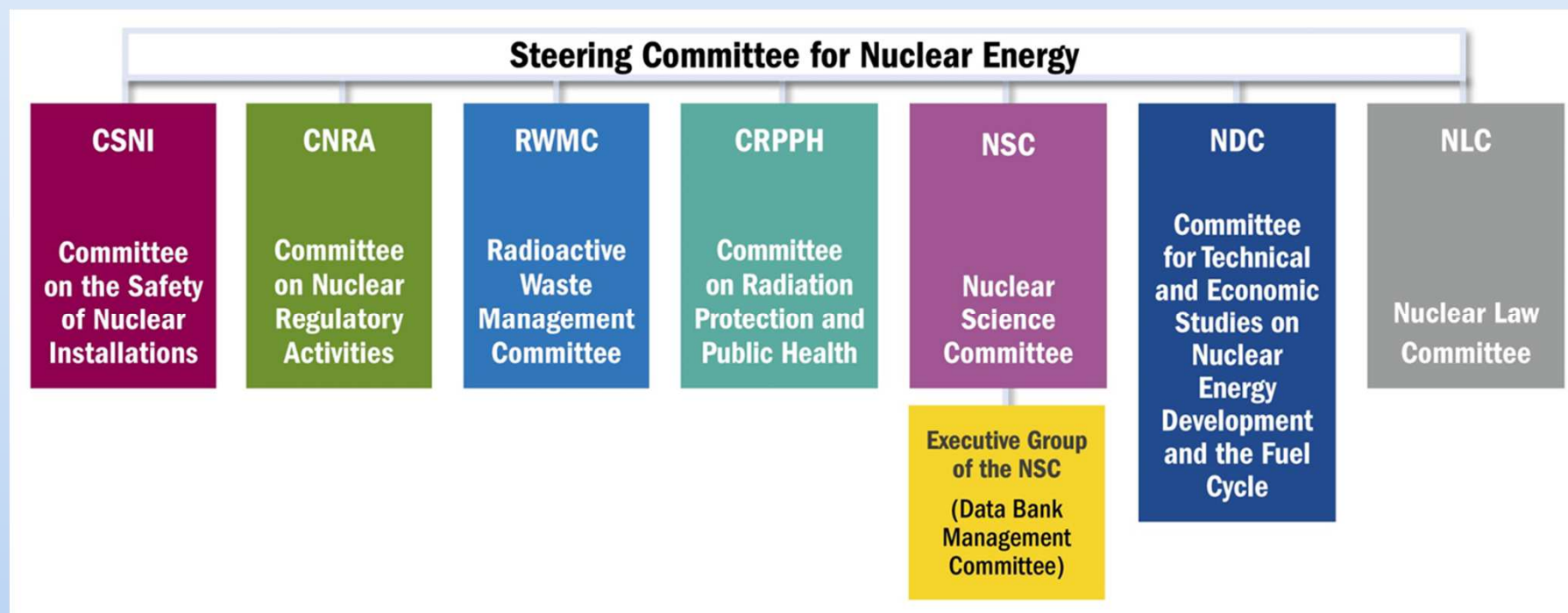
WiN Global Conference
Vienna, 27 August 2015

The NEA: A Forum for Cooperation

- Founded in 1958
- 31 member countries
- 7 standing technical committees
- 75 working parties and expert groups
- 21 international joint projects



NEA Committee Structure



The NEA's committees bring together top governmental officials and technical specialists from NEA member countries and strategic partners to solve difficult problems, establish best practices and to promote international collaboration

Major NEA Separately Funded Activities

Secretariat-Serviced Organisations

- **Generation IV International Forum (GIF)**
with the goal to improve sustainability (including effective fuel utilisation and minimisation of waste), economics, safety and reliability, proliferation resistance and physical protection.
- **Multinational Design Evaluation Programme (MDEP)**
initiative by national safety authorities to leverage their resources and knowledge for new reactor design reviews.
- **International Framework for Nuclear Energy Cooperation (IFNEC)**
forum for international discussion on wide array of nuclear topics involving both developed and emerging economies.

21 Major Joint Projects

(Involving countries from within and beyond NEA membership)

- **Nuclear safety research** and experimental data (thermal-hydraulics, fuel behaviour, severe accidents).
- **Nuclear safety databases** (fire, common-cause failures).
- **Nuclear science** (thermodynamics of advanced fuels).
- **Radioactive waste management** (thermochemical database).
- **Radiological protection** (occupational exposure).

Fukushima Daiichi: *Moving Forward*

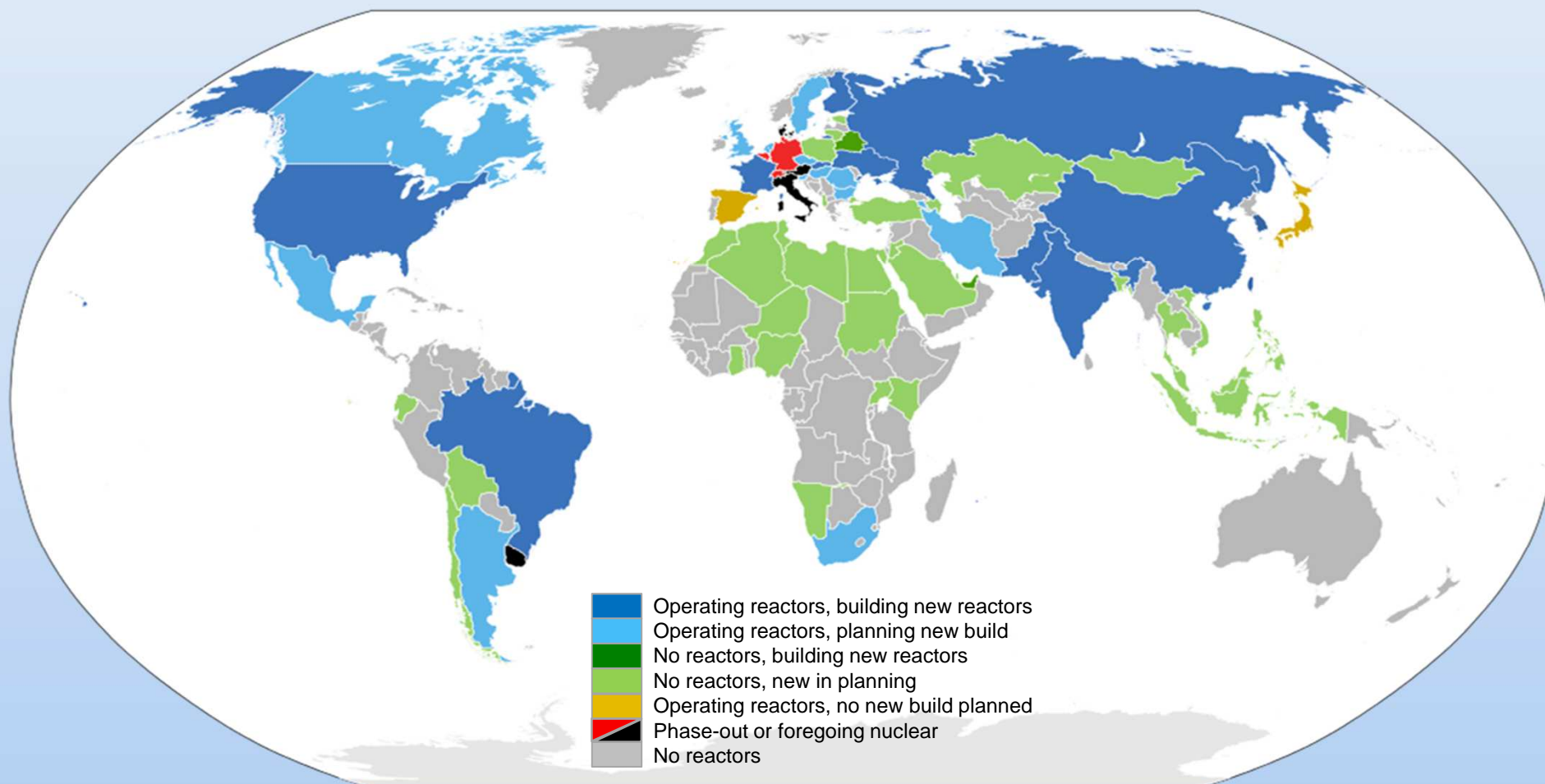


Public Views of Nuclear Waste





Global View of Nuclear Power Today

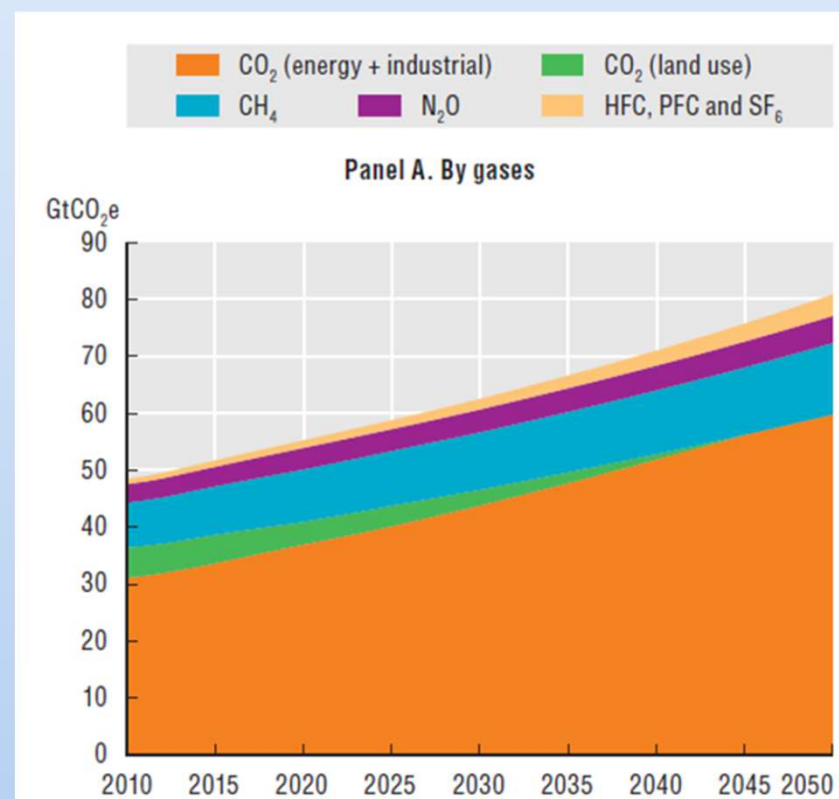


Source data: World Nuclear Association
Update 2015

COP 21 is Around the Corner

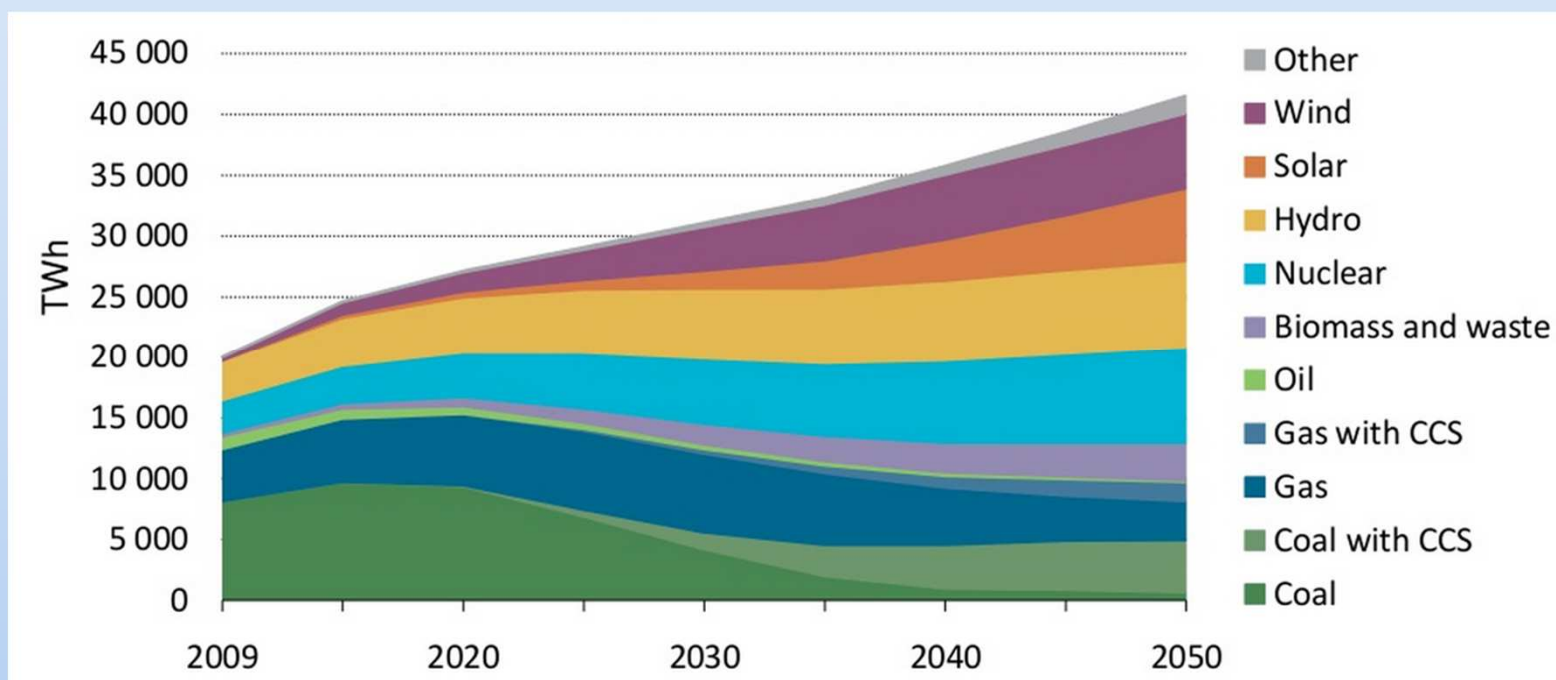
- UN-sponsored meeting begins November 2015 in Paris. 40,000 attendees are expected.
- Countries plan to negotiate an agreement intended to limit global warming to below 2°C by reducing global CO₂ emissions by 50% from 1990 levels.
- Ensuring nuclear is viewed as a part of the overall solution is important for all of us.

GHG emissions – baseline scenario:



Source: OECD Environmental Outlook 2050

IEA 2°C Scenario: Nuclear is Required to Provide the Largest Contribution to Global Electricity in 2050



2015 NEA/IEA Technology Roadmap



Key Roadmap Recommendations

- Governments should recognize the value of low-carbon capacity.
- R&D is needed to support long-term operation.
- Industry needs to optimise constructability of Gen III designs.
- Accelerate development of SMRs.
- Support development of one or two Gen IV reactors.
- Demonstrate nuclear desalination or hydrogen production.
- Invest in environmentally sustainable uranium mining.
- Continue cooperation and discussions on international fuel services.
- Establish policies and sites for long-term storage and disposal.

Technology

Nuclear Energy

2015 edition

Key Actions for the Next 10 Years

- **Ensure global nuclear safety.** Enhance peer oversight and cooperation of both regulators and operators.
- Establish a **level playing field for all low-carbon technologies** — favouring one technology over another distorts the market and impacts overall grid reliability.
- **New plant projects** in OECD countries must show success in completing projects on time and to budget.
- Enhance **standardisation**, harmonise and update codes and standards.
- Gain **political and public consensus** for long-term radioactive waste management strategies.c

NEA Activities, Cont.

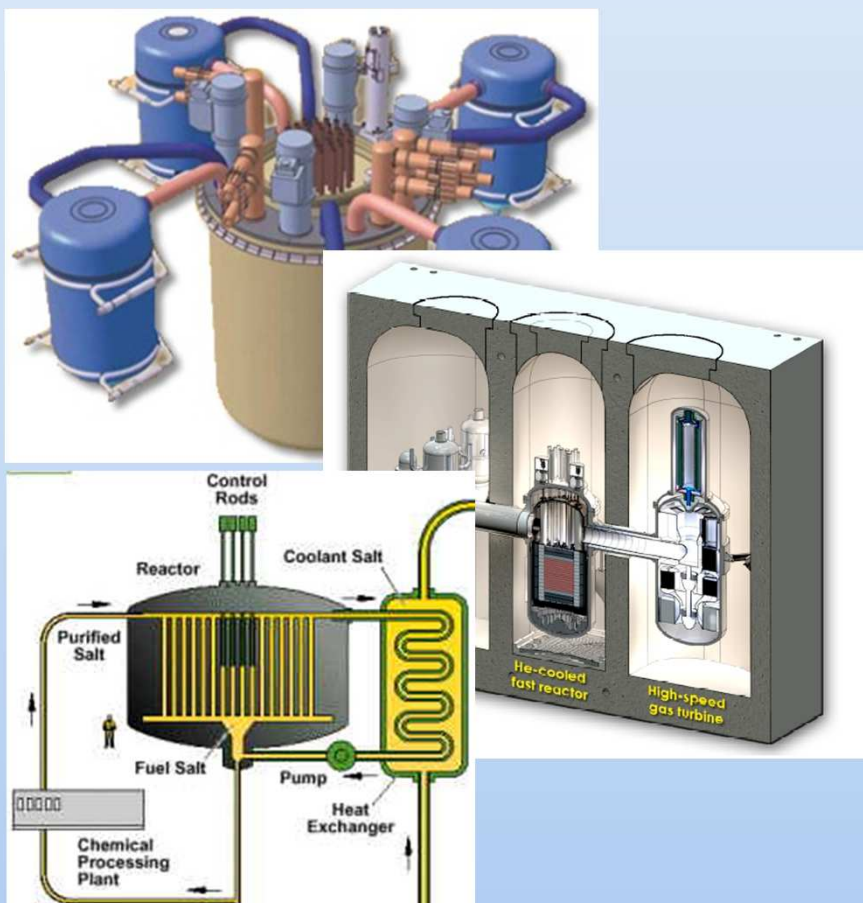
- **New Reports:** *Five Years after Fukushima Daiichi Accident, and Nuclear Innovation 2050*
- **New Division:** *Human Aspects of Nuclear Safety (HANS)*
- **Increased Focus:** *Waste Management and Decommissioning*

Questions for Member Countries

Can Nuclear Technologists Address:

- **The need for long-term sustainability?**
- **Enduring concerns about safety?**
- **The challenge of nuclear waste disposition?**
- **The long-term role of nuclear fission energy?**
- **The future of light water reactor technology?**
- **The future of the nuclear fuel cycle?**

For the Longer Term Future: *Nuclear Innovation 2050*



- What technologies will be needed in 10 years? 30 years? 50 years?
- What research and development is needed to make these technologies available?
- Is the global community doing the R&D needed to prepare for the future?

Improving the Representation of Women in Nuclear

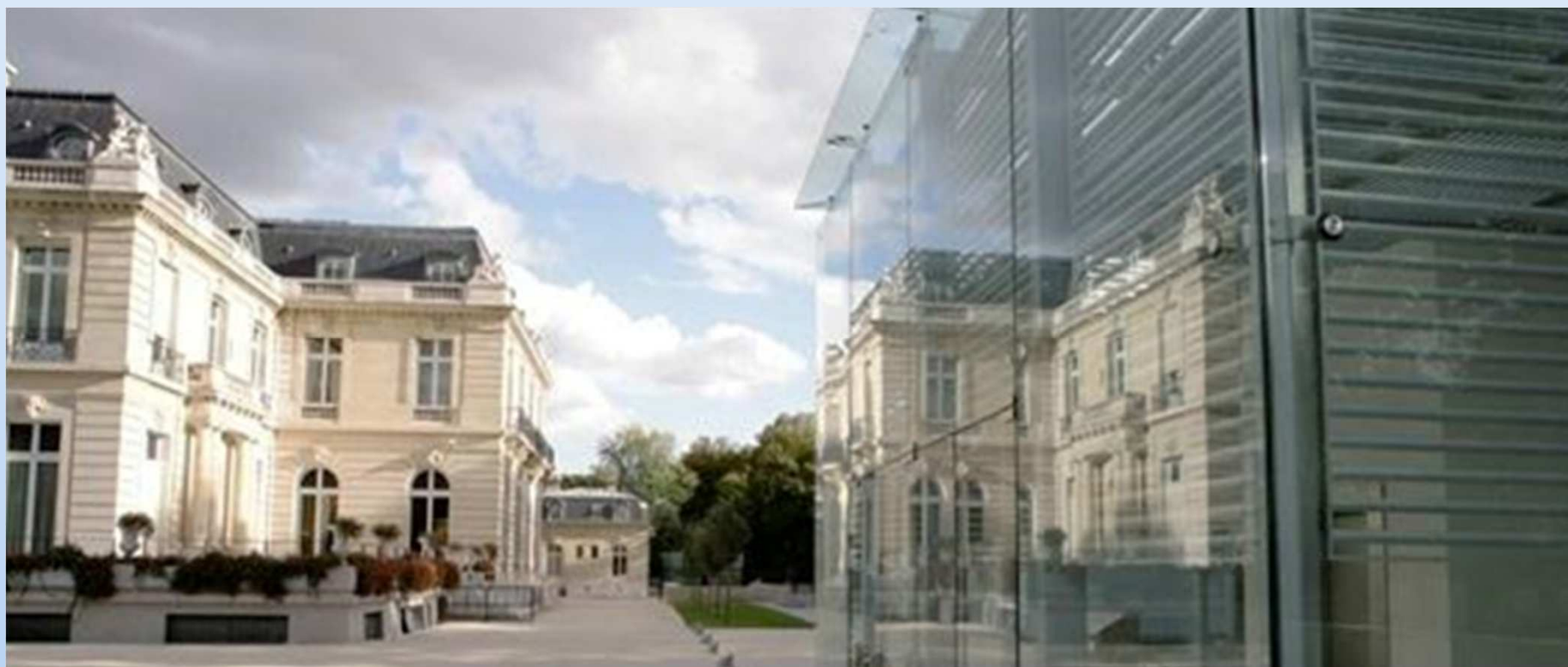


Improving the Representation of Women in Nuclear

- New focus on encouraging women at the NEA itself — currently 49% female; but only 25% administrators
- Exploring ways to work with other OECD organizations to propose strategies to enhance:
 - Providing **tools and role models** for women and girls at every stage of their nuclear education and careers
 - **Approaches to recruiting and retaining** women in nuclear
 - **Understanding of the support** needed to enhance the numbers of women working in and leading nuclear activities



Thanks for your attention!



More information @ www.oecd-nea.org

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