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Agency/Organization: Nuclear
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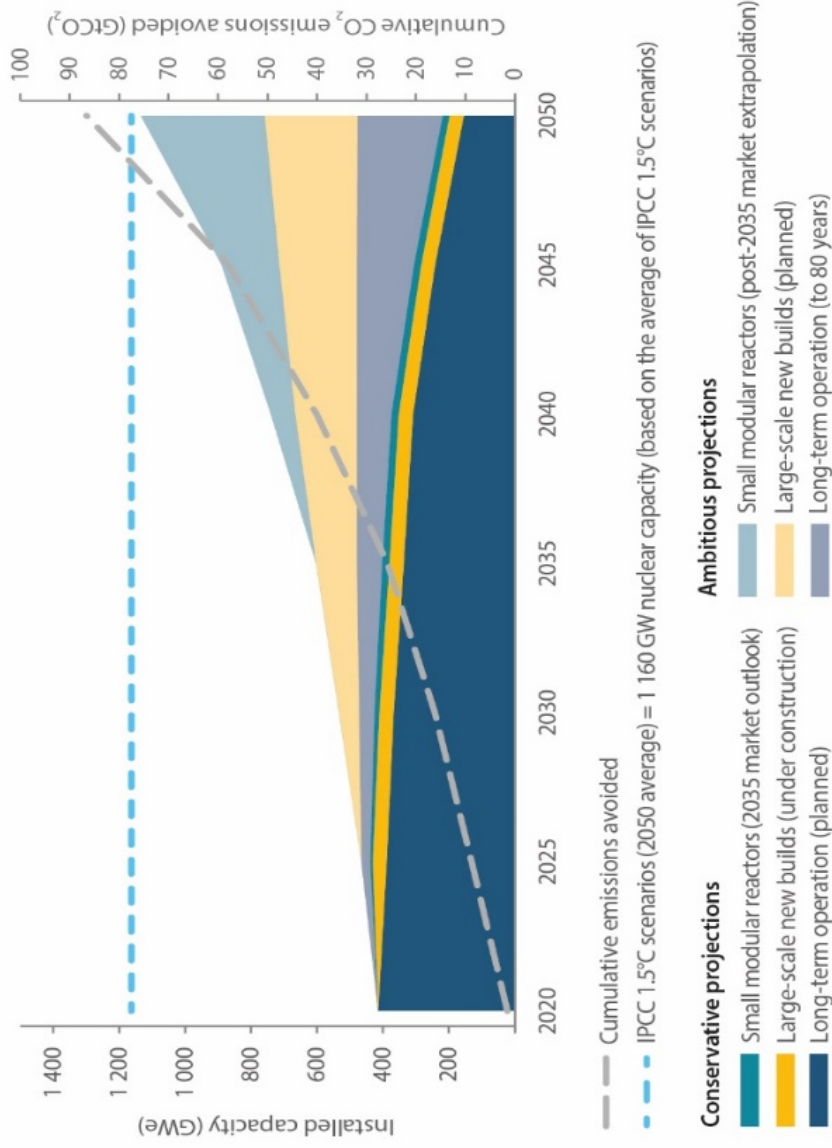
International Insights on Competency Management Strategies

John A. Nakoski,
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Knowledge and Competency Management in the Nuclear Sector

A call to action on a global scale

Potential of nuclear contributions to net-zero



- Acceleration of nuclear energy programmes
- **Building talent is a long-term investment**
- Clear benefits from international cooperation in developing and transferring nuclear knowledge

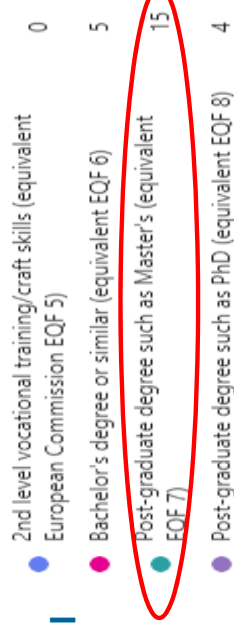
NEA Survey – Developing and Maintaining Effective Competency Management within Regulatory Organizations

- Responses from 18 countries (24 organizations)
- Identify competency-related challenges **nuclear safety regulators will confront**
- 2024 survey:
 - **Setting the scene:**
 - Projections for the national nuclear context
 - Competency needs for Regulators and Technical Support Organizations
 - **Education:** Preparing the pipeline of future talent
 - **Attracting talent:** Competing organisations
 - **Retention:** Strategies for training, career development and transitioning
 - **Collaboration:** Leveraging domestic and international collaboration to prepare the future workforce

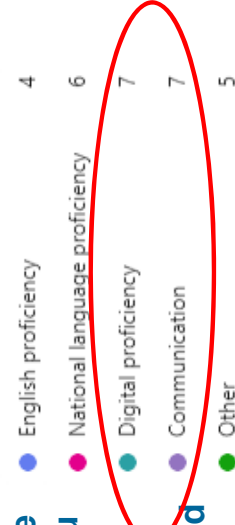
Country	organizations
Belgium	2
Bulgaria	1
Canada	1
China	1
Czechia	2
Finland	2
France	2
Germany	1
Hungary	1
Italy	3
Japan	1
Korea	1
Poland	1
Slovakia	1
Slovenia	1
Switzerland	1
Sweden	1
USA	1

NEA Survey – Anticipated Needs

Which levels of formal education will your organisation require most?



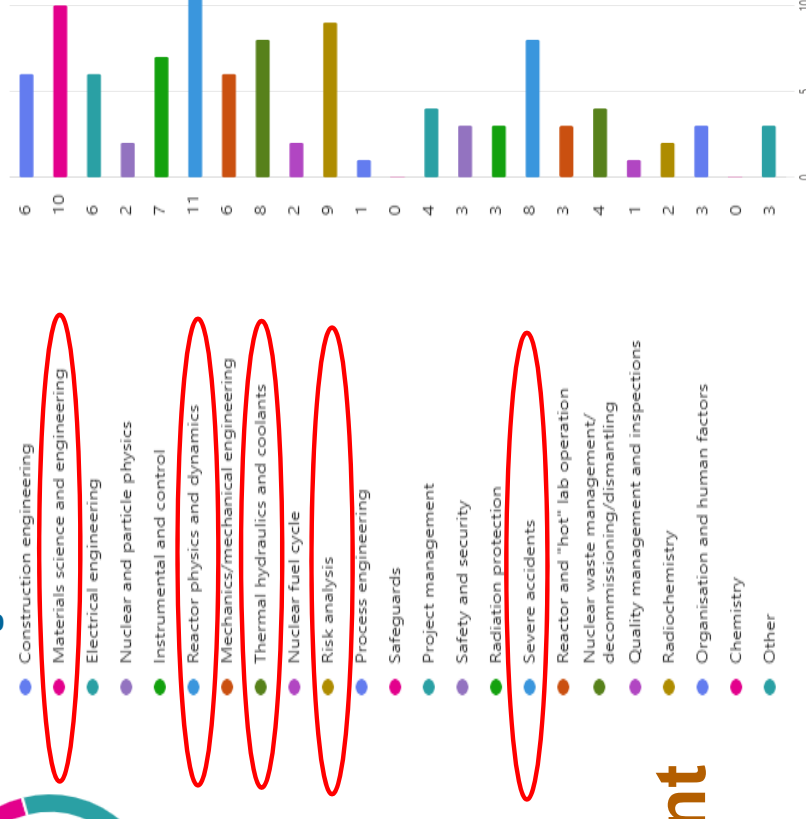
Which post-graduate general skills do you foresee as being most difficult to attract and retain?



What are the areas or challenges for Disruptive, Innovative, and Emerging Technologies?

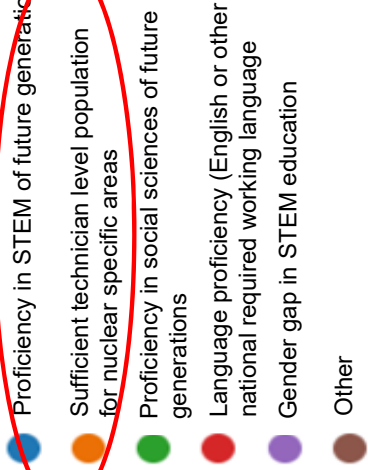
Fast spectrum **AI** management
 digital competencies
 information technologies
 reactor technologies
 competency assessment
 technology experts
 advanced nuclear
 competency requirements
 key competencies

Which post-graduate core nuclear areas of competencies do you foresee as being most difficult to attract and retain?

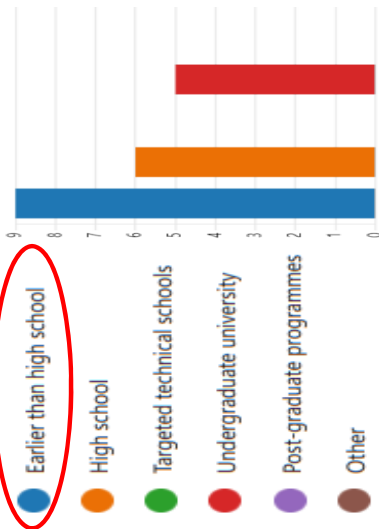


NEA Survey – Challenges, Outreach, Collaboration

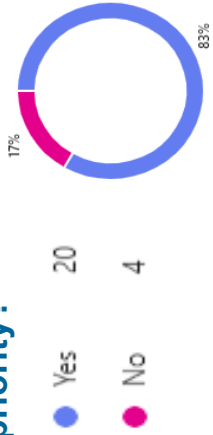
What challenges do you anticipate your country will face in providing the necessary educated population?



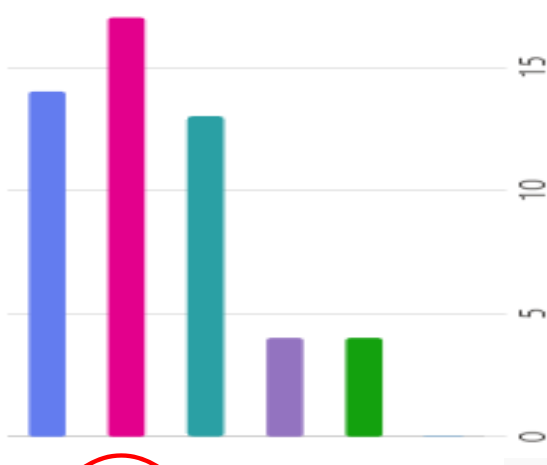
When do you think nuclear energy targeted outreach should start?



Do you believe international initiatives and collaboration could be strengthened to help meet the future demands for necessary nuclear competencies? If so, what type of initiatives seem to be a priority?



- International collaboration on development of common safety reviews for advanced reactor designs (including SMRs), advanced fuel technologies, or for the adoption of disruptive and innovative technologies
- Knowledge sharing through targeted international collaboration such as sharing of best practices through working groups, international conference and workshops, or joint research efforts
- Professional training such as international topical summer schools, trainings or professional exchange programmes
- Higher education initiatives such as international graduate level summer schools
- Providing information to stakeholders and the public with regular updates of the state of nuclear competency, expected challenges and ongoing efforts using instruments such as reports, survey findings or monitoring of metrics, data and indicators
- Other



What does it look like 50 years from now?

From what we believe we know today:

- **Target competency needed for Regulators and support organizations:**
 - Traditional nuclear safety competencies will remain crucial
 - Competencies that support adapting to a fast-changing, highly interconnected environment are needed
 - Communication and language proficiency skills are enablers that need to be further developed
 - AI awareness and general digital proficiency is key

NEA strategies for competency management

Expanding Portfolio



Open access to technical information and infrastructure

Transfer tacit and explicit knowledge

Retain

Specific issue for regulators to analyze

Train

Academia, industry and regulators

Attract

Building a community of nuclear professionals



Data and technical reports

Transfer Thermal-Hydraulic and Severe Accident Knowledge gained through NEA Activities (THICKET Seminars)

Systematic involvement of master and PhD students in NEA joint projects

Nuclear Education, Skills and Technology (NEST) Framework

Training the next generation of nuclear simulation specialists (SINUS)

International Safety Assessment School (a work in progress)

International Radiological Protection School (IRPS)

Risk communication training course

International Mentoring Workshops in Science and Engineering

International School of Nuclear Law (ISNL)

International Nuclear Law Essentials (INLE)

Global Forum on Nuclear Education, Science, Technology and Policy

NEA Ambitions for Nuclear Education and Workforce Development

Looking ahead



Source: NEA

- Leveraging benefits from NEA activities and in-house expertise for practical materials, seminars, joint projects, and training for academia and young professionals
- Expanding hands-on training for students and young professionals
- Enabling long-term dialogue among academic institutions, policymakers and key stakeholders in the nuclear sector
- Continuing dialog with regulators to focus on specific needs raised in the NEA survey on competency management
- Building the STEM pipeline by engaging with secondary schools, students and teachers
- Leveraging competencies regardless of demographics in the sector by supporting merit-based career development



Train with the NEA: https://www.oecd-nea.org/cms/pl_89748/train-with-the-nea

International School of Nuclear Law

International Nuclear Law Essentials

Fundamentals of International Nuclear Law

International Radiological Protection School

Nuclear Risk Communication Training Course

International School on Simulation of Nuclear Reactor System (SINUS)

NEA Data Bank Computer Program Service

International Mentoring Workshops

Nuclear Educations, Skills and Technology (NEST) Framework

NEA Global Forum on Nuclear Education, Science, Technology and Policy

NEA Global Forum on Rising Stars Programme

Thank you for your attention

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