European Commission

European Human Resources Observatory for the Nuclear Energy Sector

Massimo FLORE

Genesis

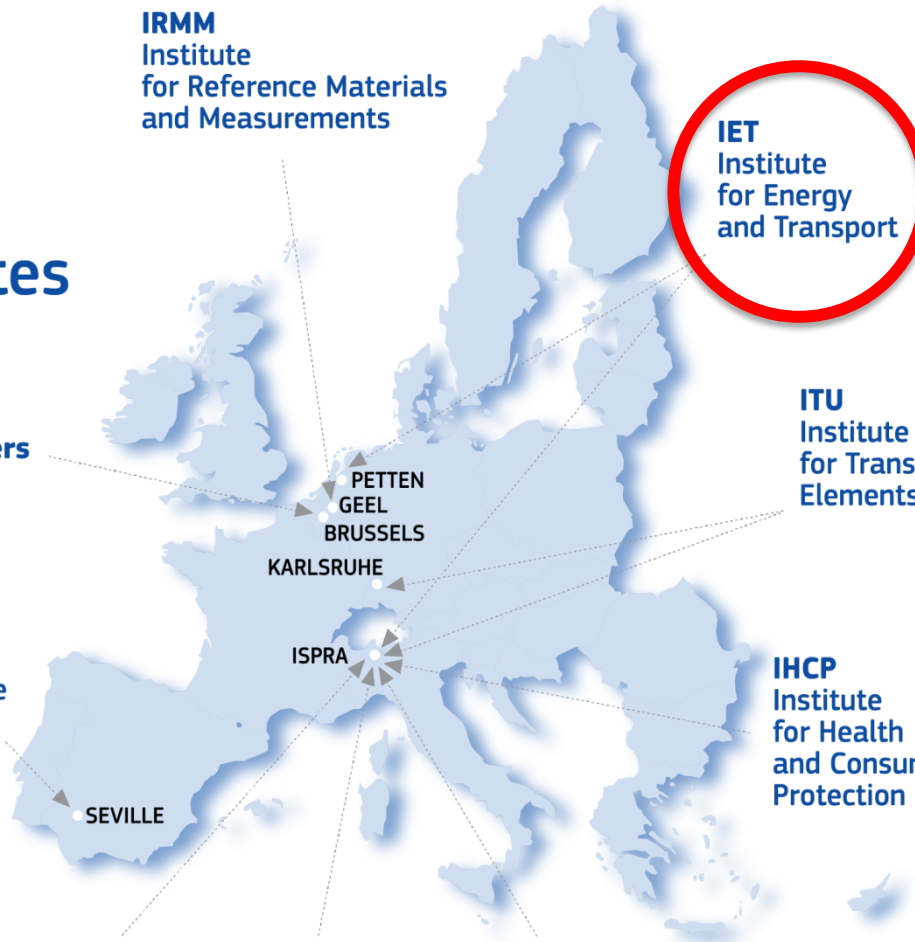
2008 — European Nuclear Energy Forum

2009 — Joint Research Centre (Operating Agent)

2011 — EHRO-N

European Commission

JRC Sites



IRMM
Institute
for Reference Materials
and Measurements

IET
Institute
for Energy
and Transport

Headquarters

ITU
Institute
for Transuranium
Elements

IPTS
Institute
for Prospective
Technological
Studies

IHCP
Institute
for Health
and Consumer
Protection

IPSC
Institute
for the Protection
and Security
of the Citizen

ISM
Ispra
Site
Management

IES
Institute
for Environment
and Sustainability

Established in 1957

7 institutes in 5 countries

2,845 permanent and temporary staff

1,398 scientific publications in 2010

125 instances of support to the EU policy-maker annually

European Commission

Institute for Energy and Transport

provides **support** to **European Union policies** and technology innovation to ensure sustainable, safe, secure and efficient **energy production**, distribution and use and to foster sustainable and **efficient transport** in Europe

Petten (NL)

Ispra (IT)

- Organization
- Bottom-up Approach
- Top-down Approach

European Commission

Institute for Energy and Transport

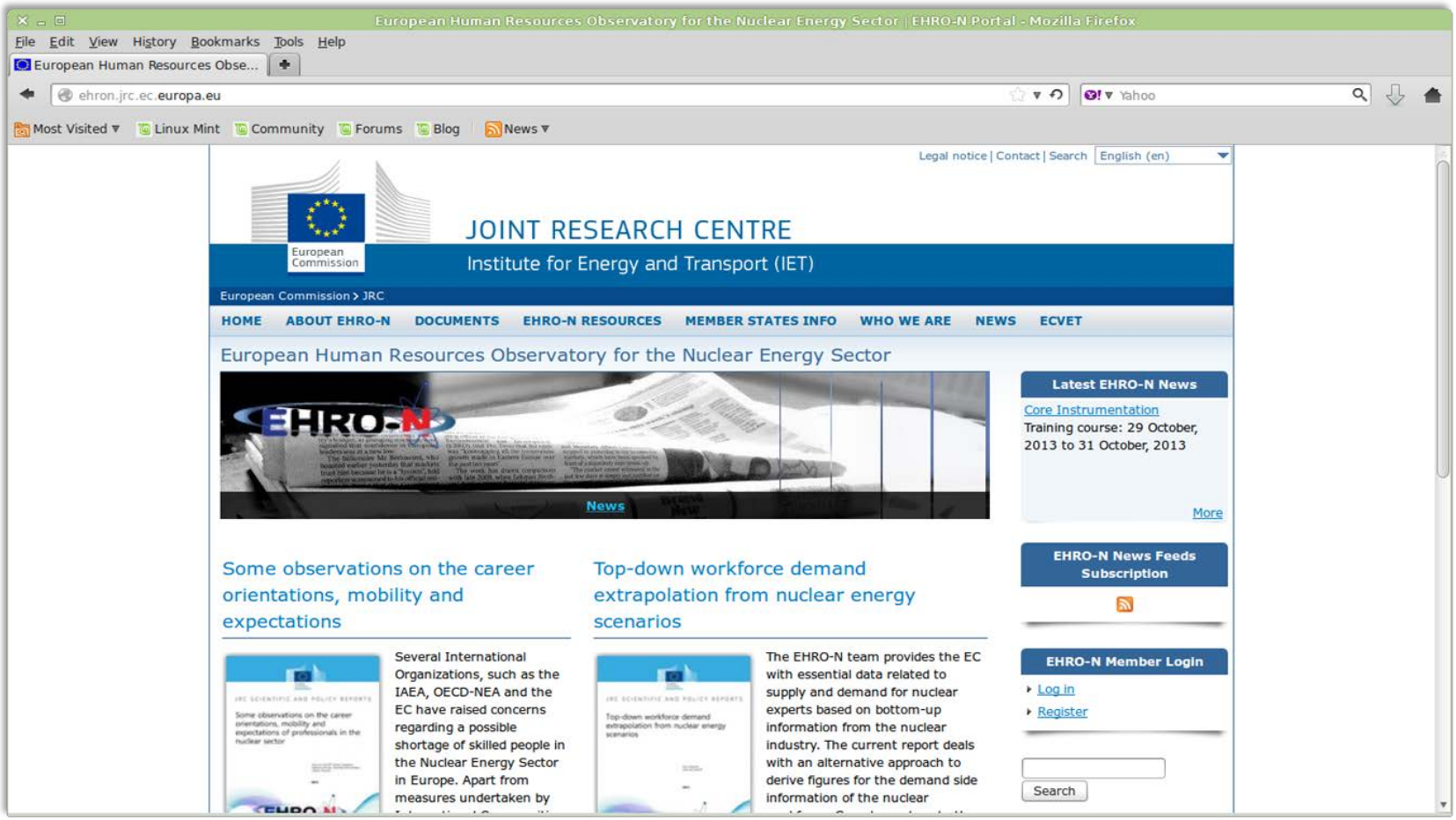
Operating Agent

Senior Advisory Group

European Commission

Senior Advisory Group Members

Website



ehron.jrc.ec.europa.eu

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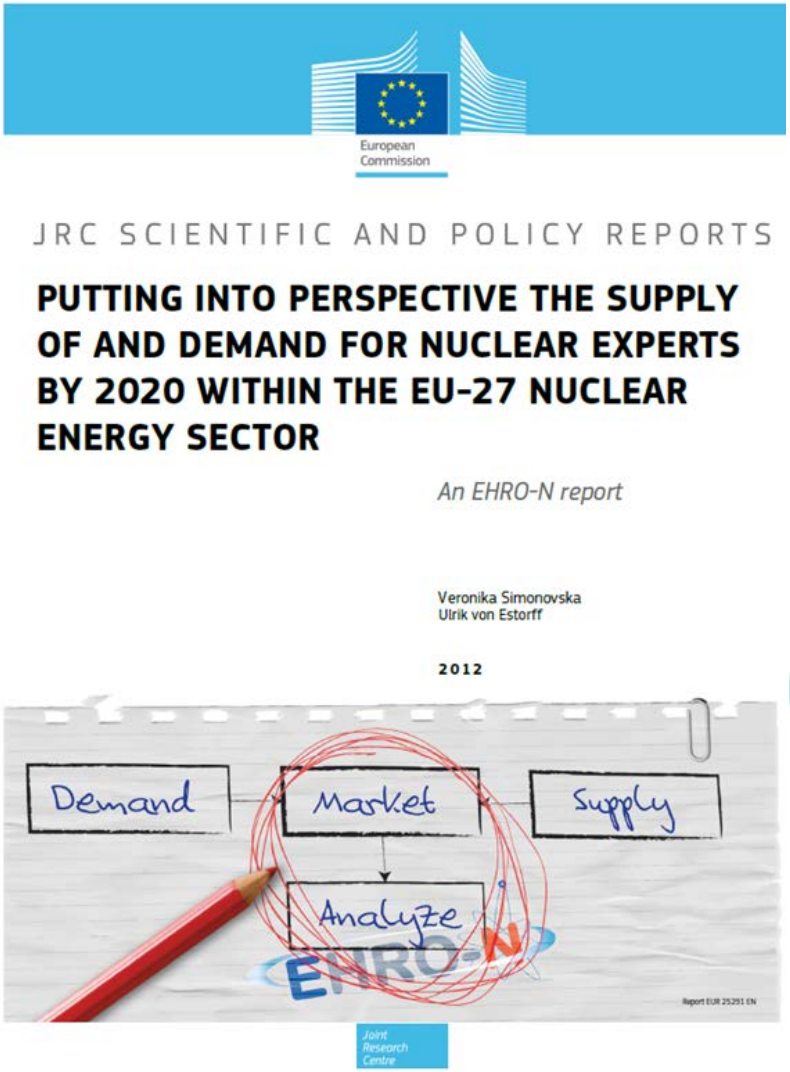
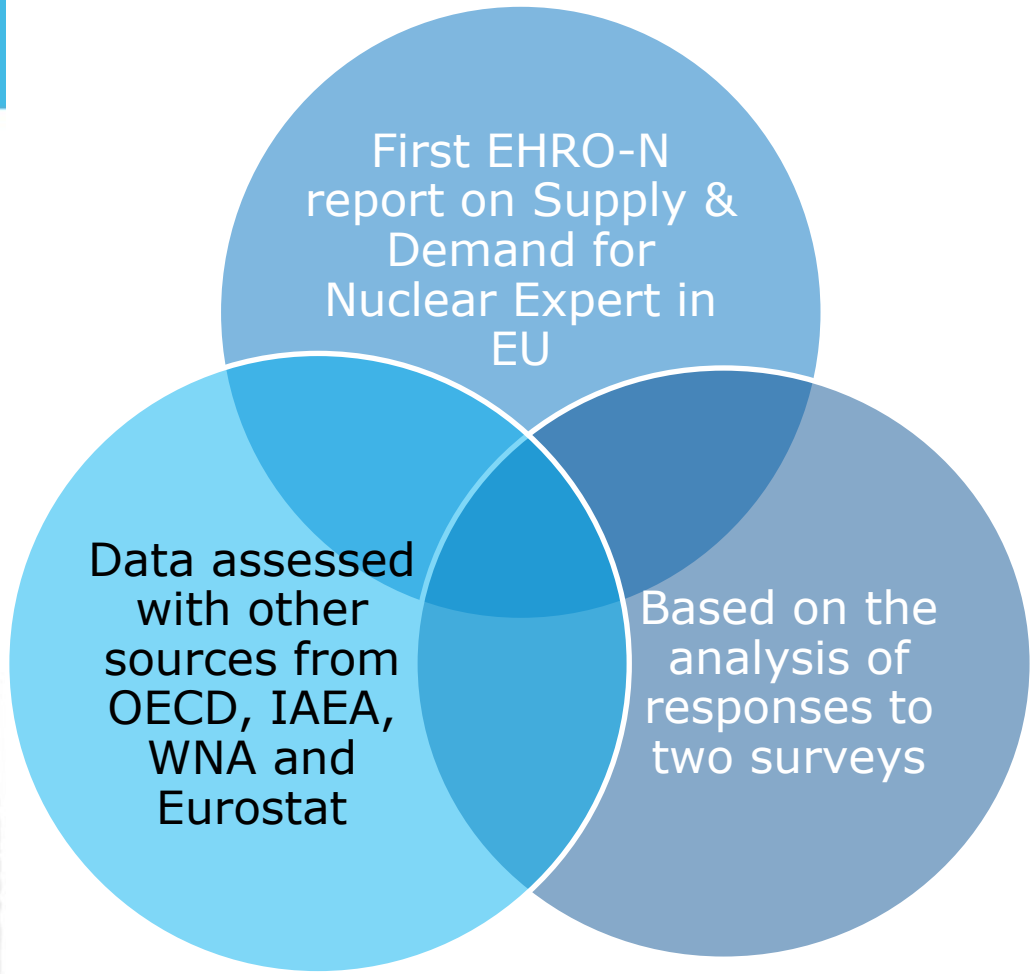
EHRO-N

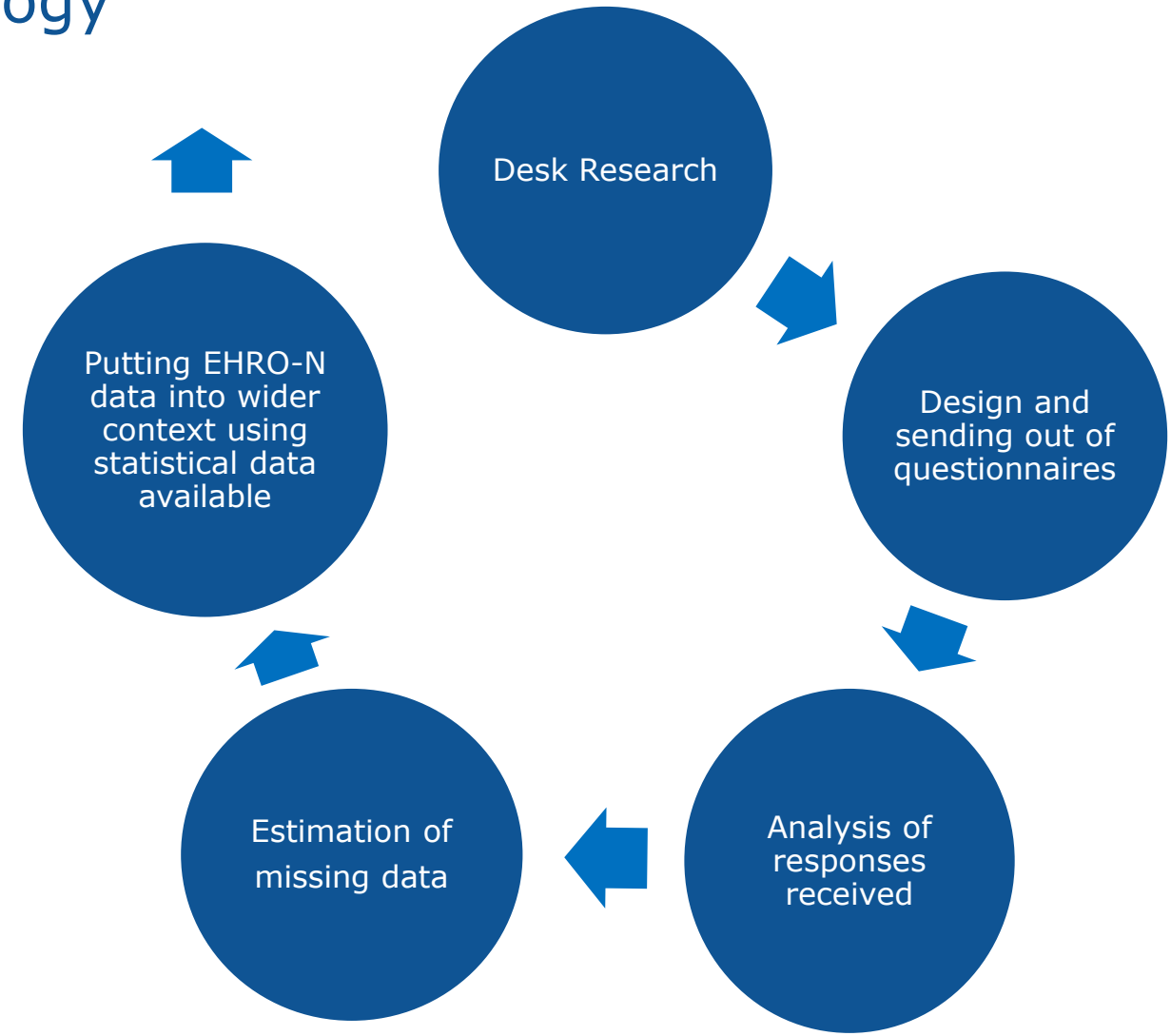
- Organization
- Bottom-up Approach
- Top-down Approach

European Commission

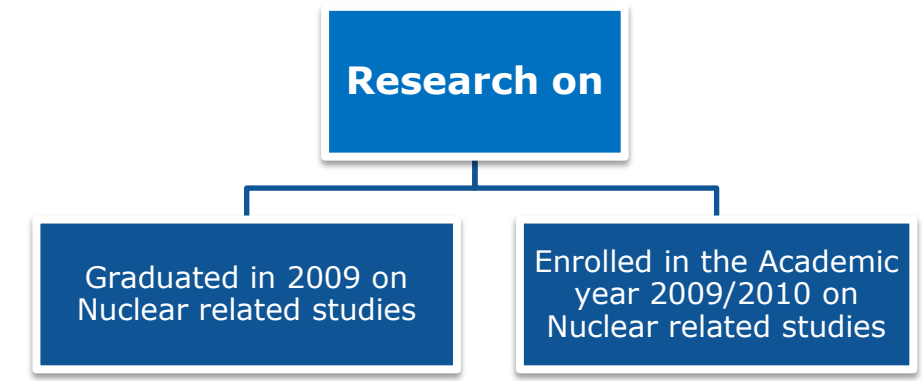




Methodology



Supply Side



Results

- High Response Rate
- Above 2800 graduated in Nuclear related field
- Around 2300 Students enrolled in Nuclear Related studies

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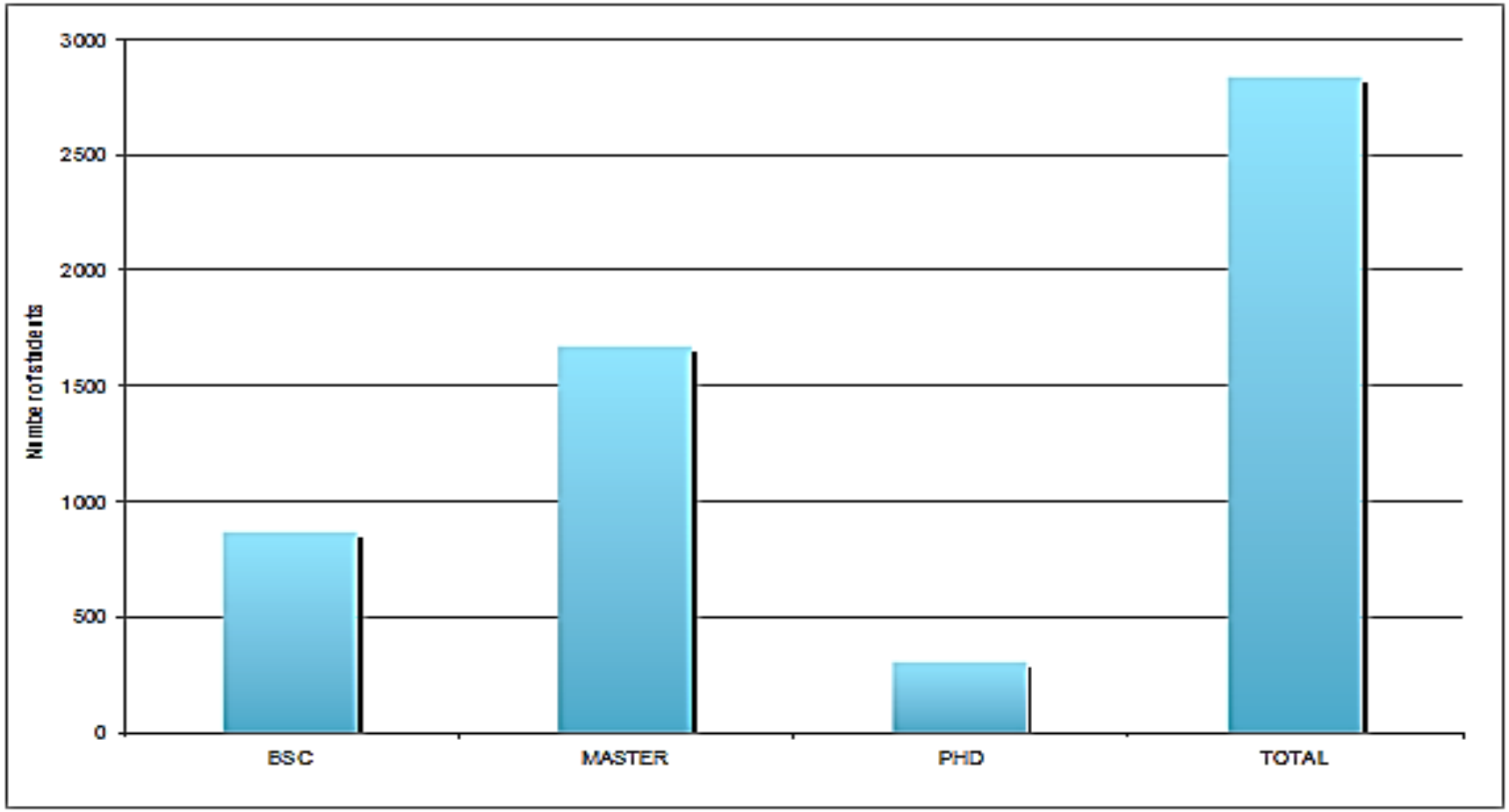
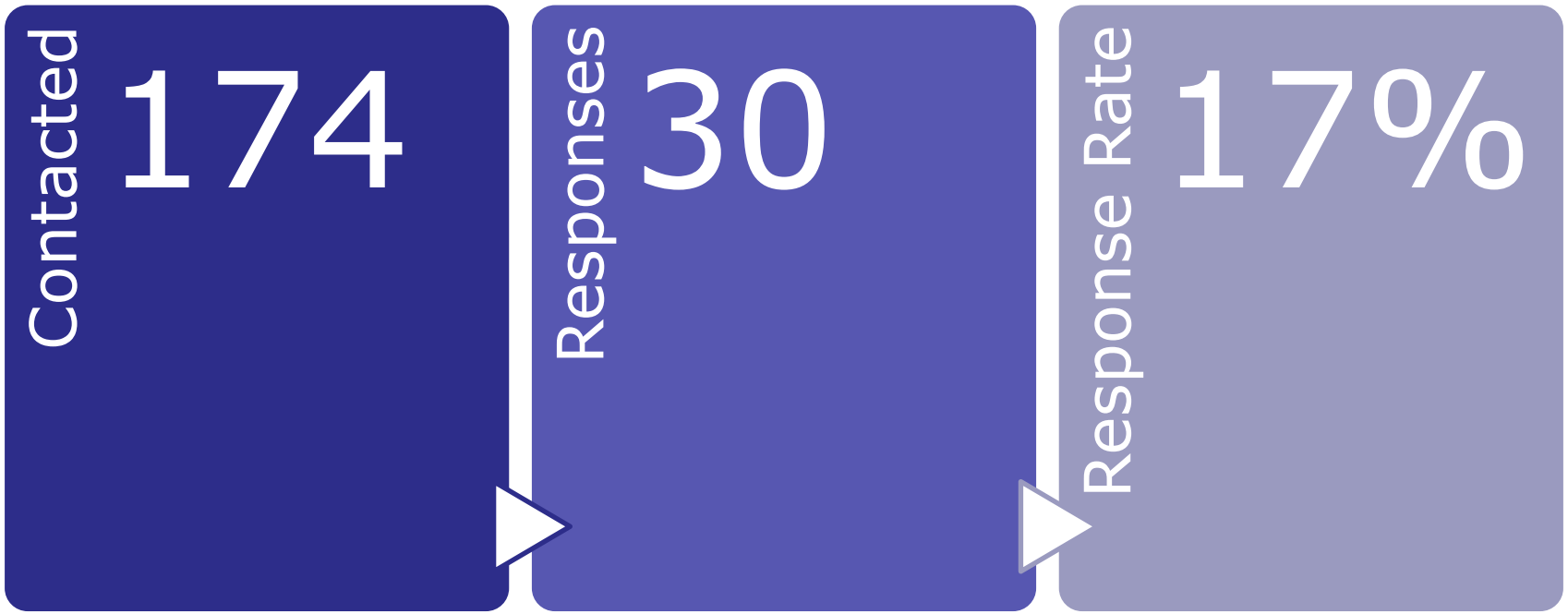
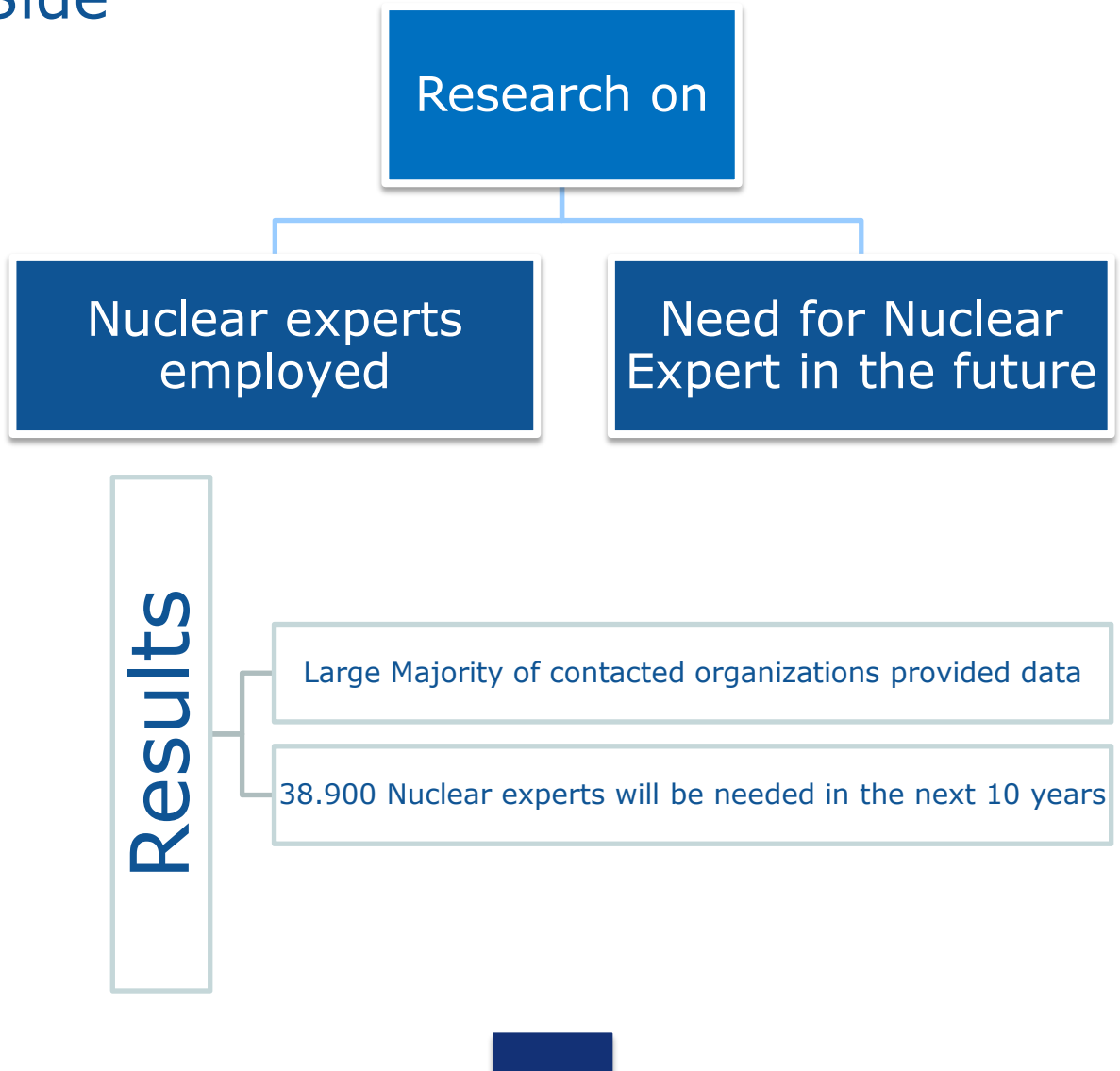
Number of BSc, MSc, PhD graduated in 2009 on nuclear related subjects



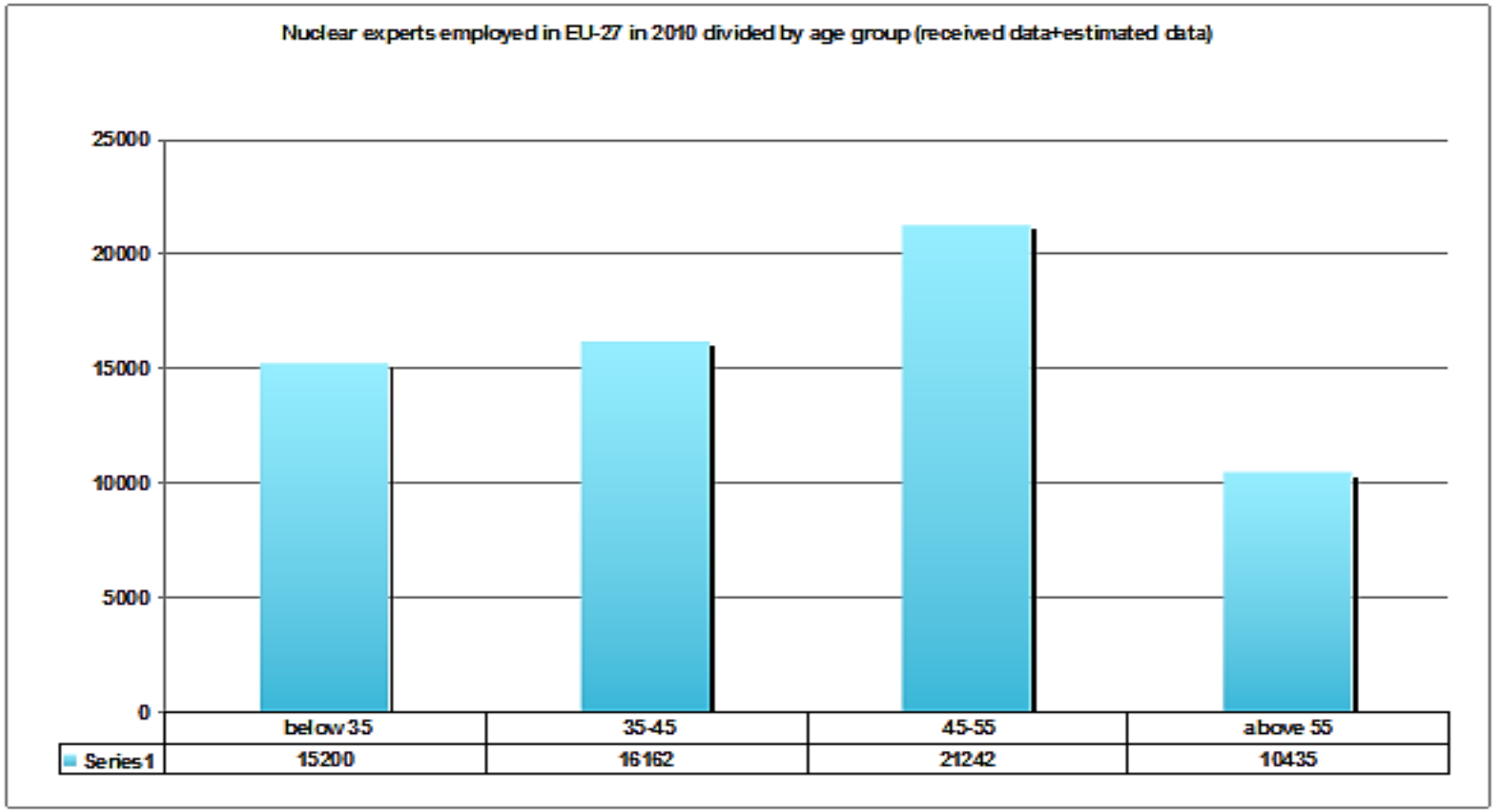
Status Demand Side Survey 2014
(Universities)



Demand Side


Research on
Nuclear experts employed
Need for Nuclear Expert in the future
Results
Large Majority of contacted organizations provided data
38.900 Nuclear experts will be needed in the next 10 years

Total number of nuclear experts employed in in 2010



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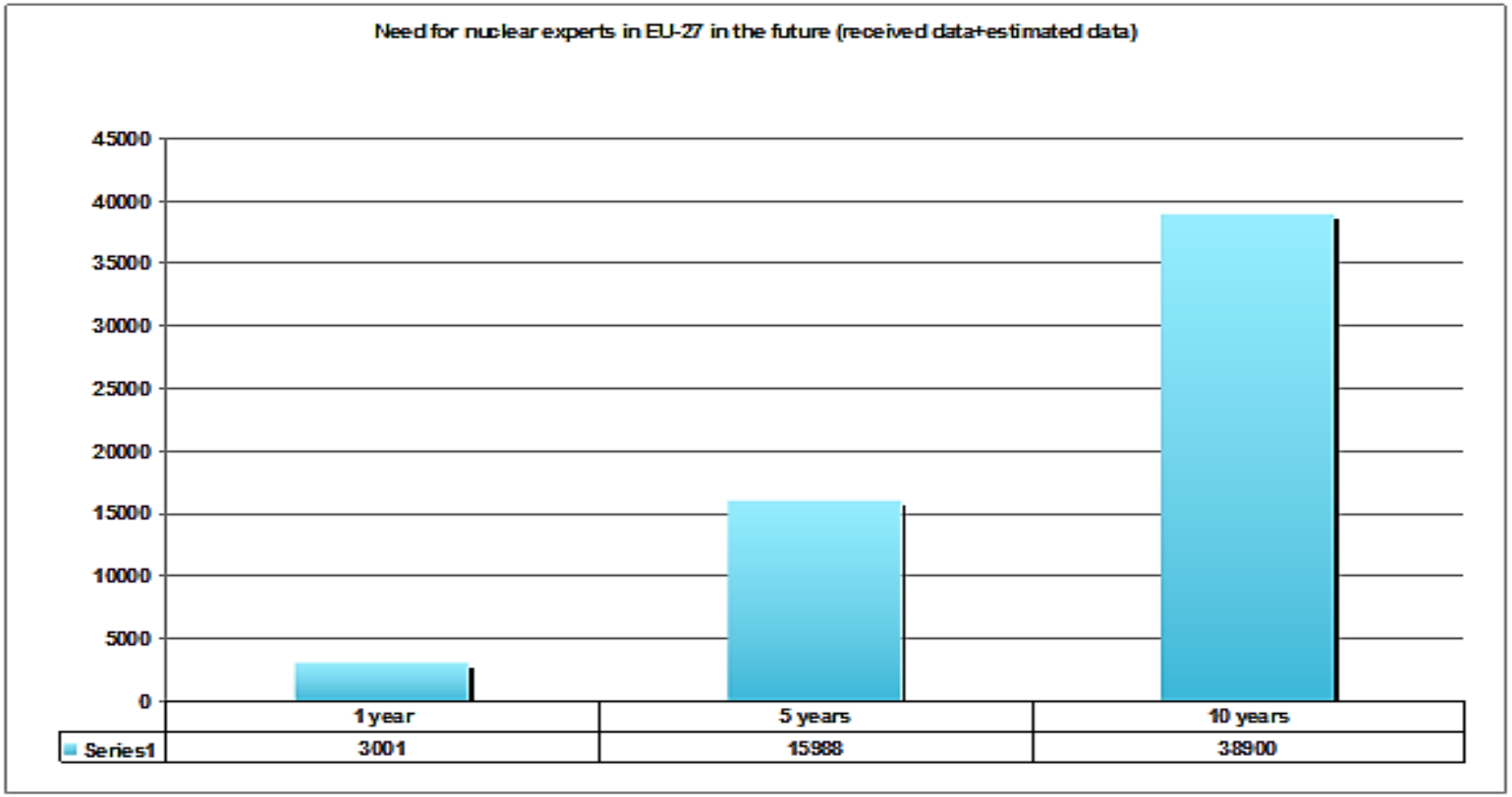
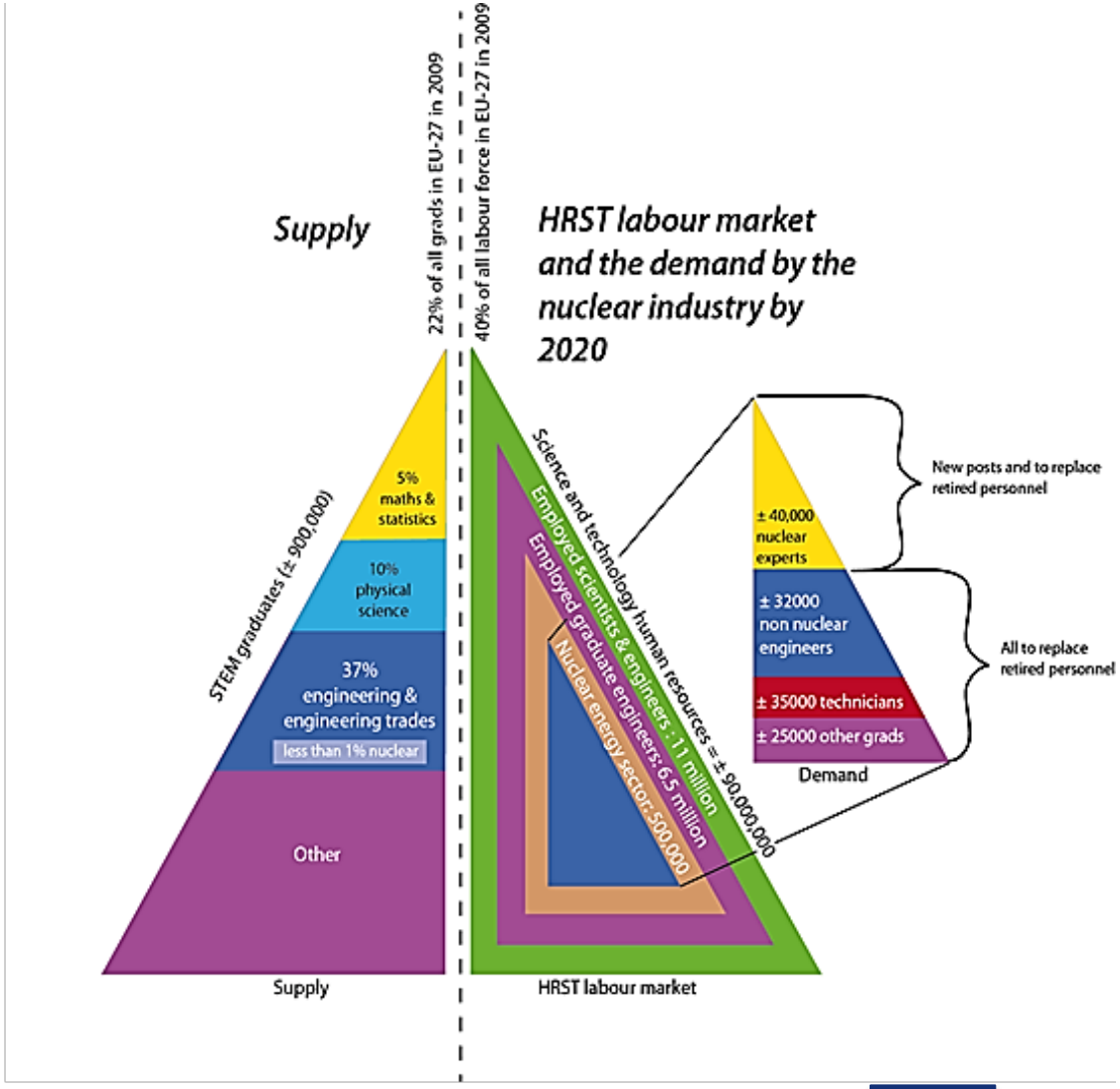
Need for nuclear experts in the future

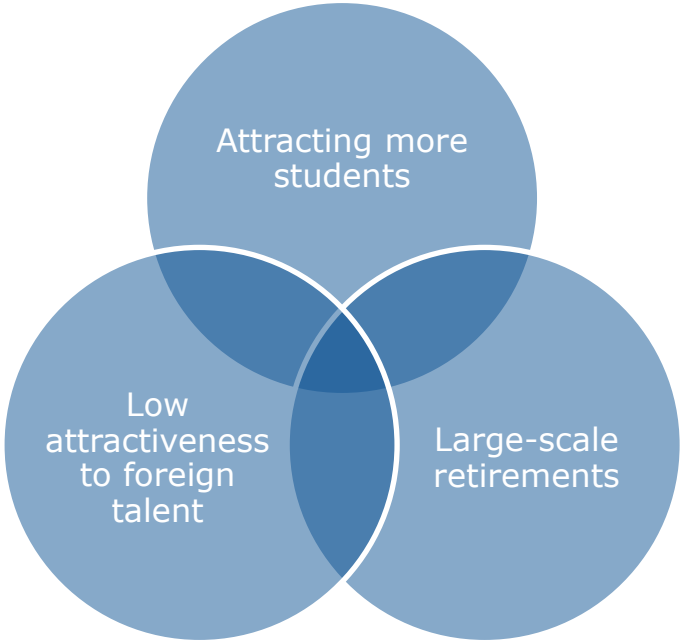


Status Supply Side Survey 2014

	Contacted	Responses	Response rate
Utilities	36	9	25%
Vendors & Suppliers	16	5	31%
Fuel providers	13	3	23%
RWM & Decommissioning	41	11	27%
Design	72	12	17%
Consultancies	27	8	30%
Regulators	26	8	31%
R&D	57	22	39%
Total	288	78	27%



Main Challenges

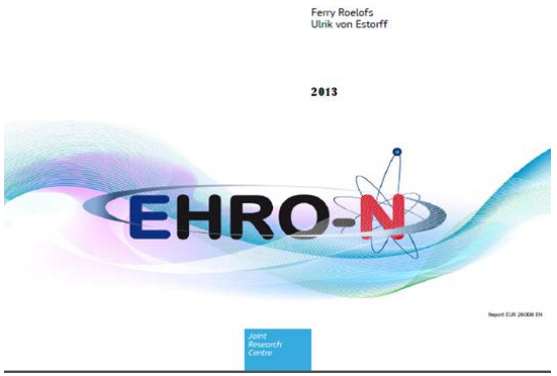


- Organization
- Bottom-up Approach
- Top-down Approach

European Commission
Energy Roadmap 2050

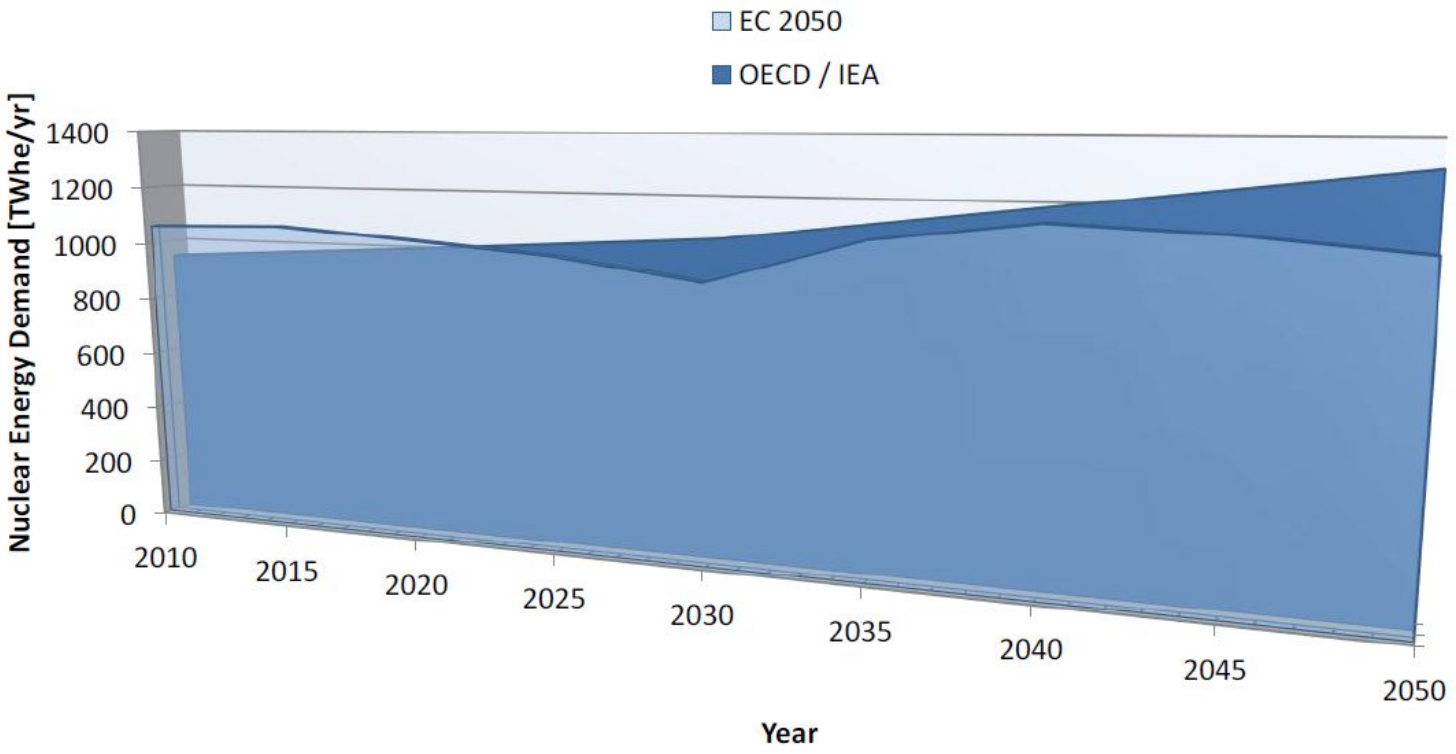
OECD/IEA
Technology Roadmap
Nuclear Energy

Top-down workforce demand extrapolation from nuclear energy scenarios



European Commission

The EC Energy Roadmap 2050 and the OECD/IEA Technology Roadmap based nuclear energy demand scenarios

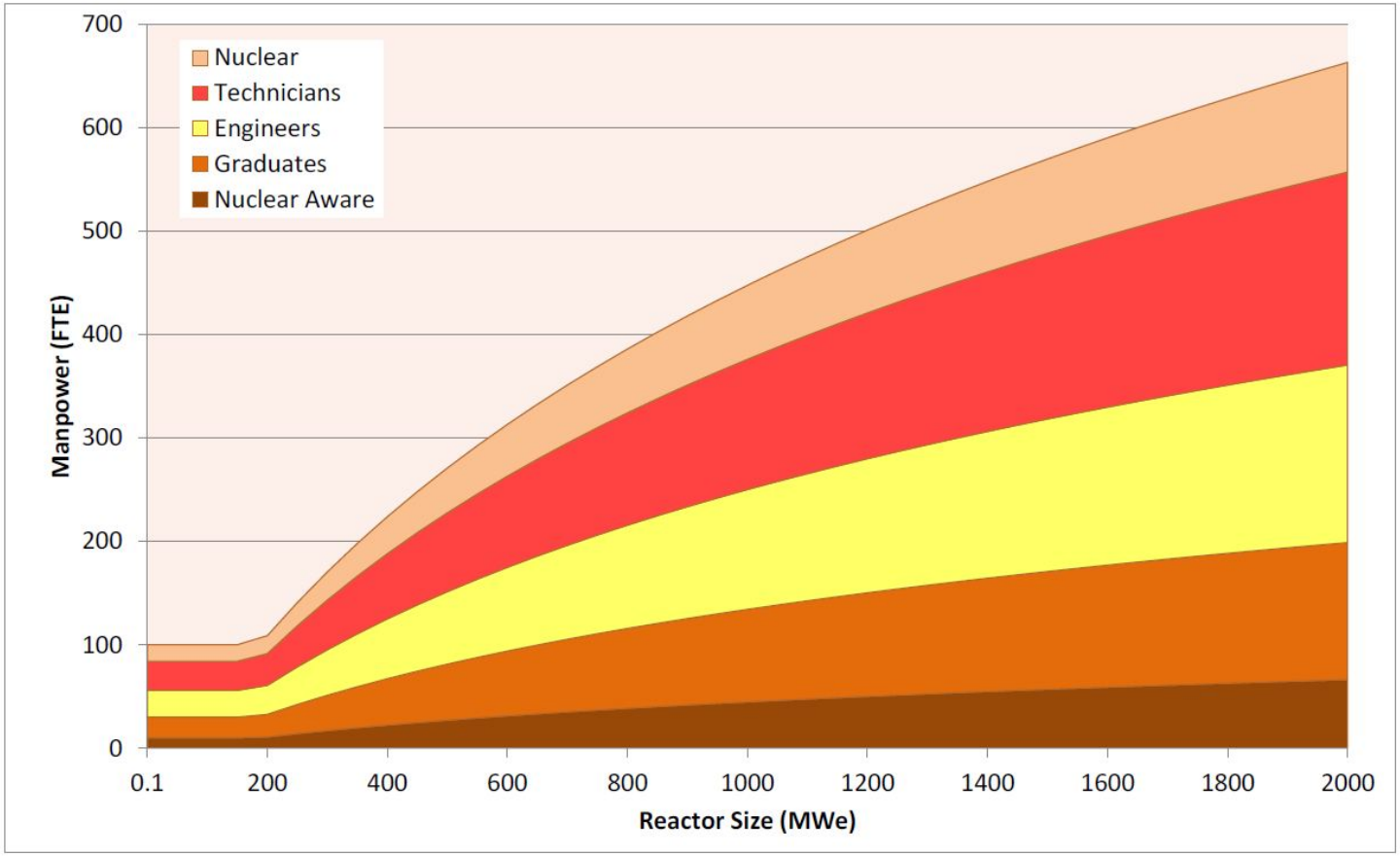


Building New Reactors

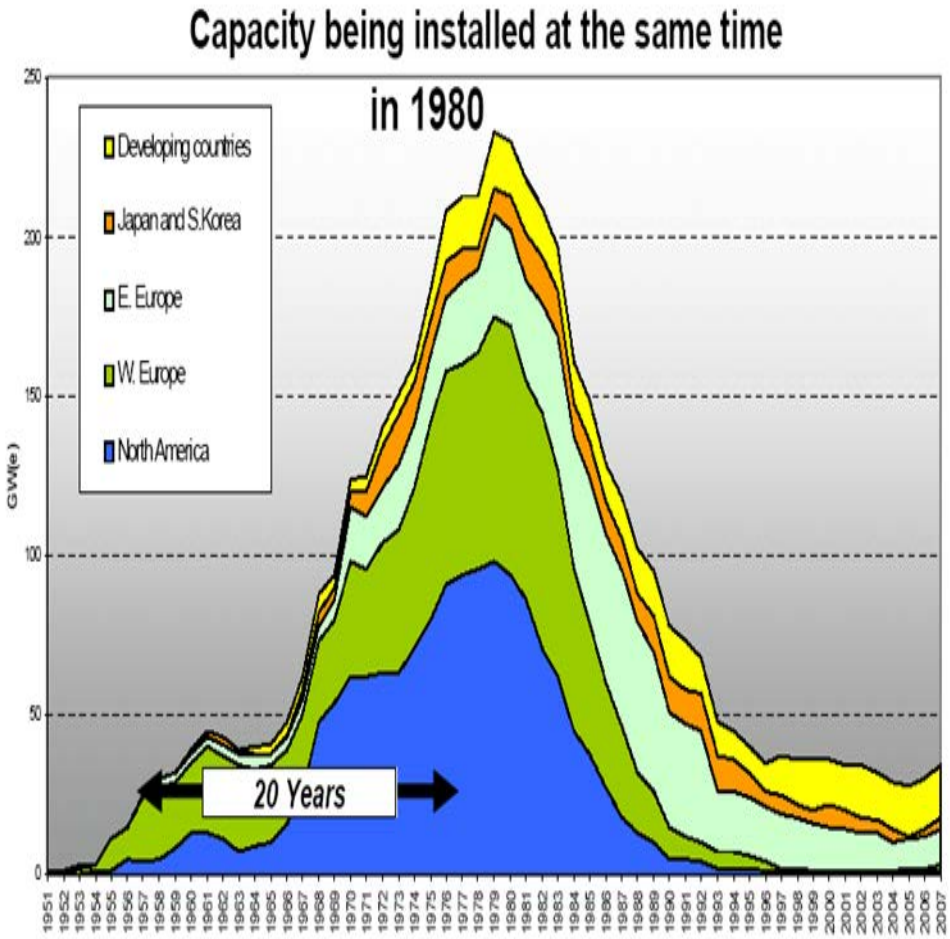
Two different generic third generation nuclear reactors are assumed to be constructed in order to fulfil the energy demand

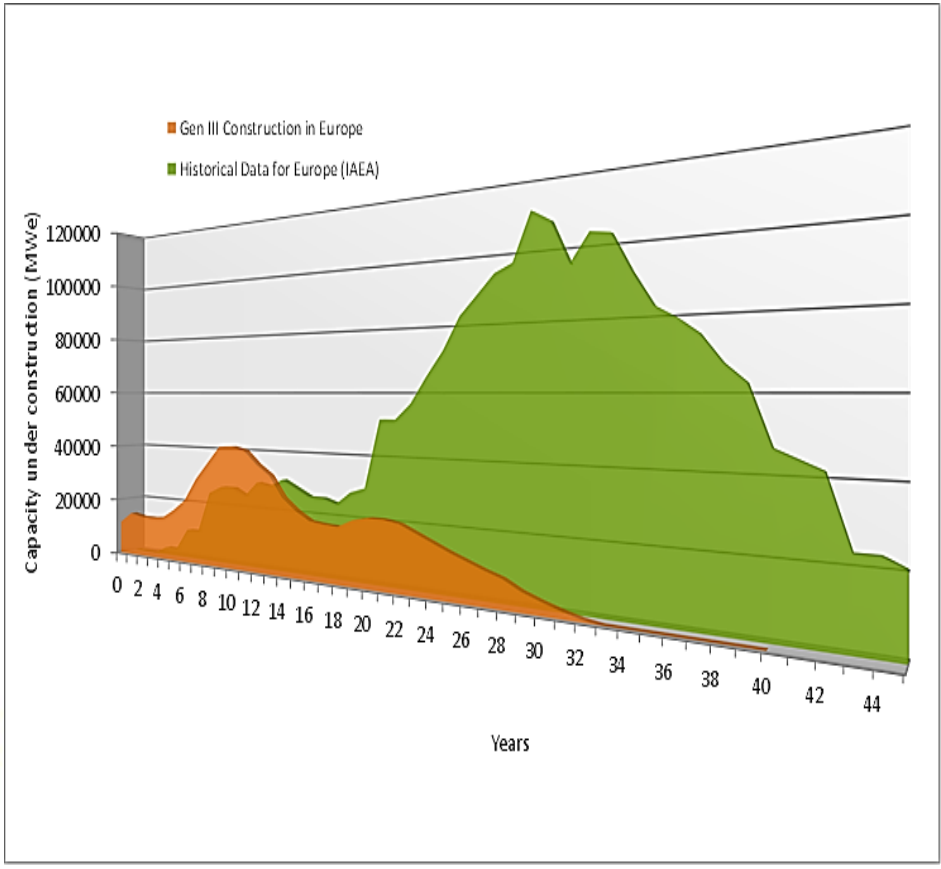
Reactor	Power [MWe]	Efficiency [%]	Load Factor [%]	Lifetime [Years]
Gen III LWR	1400	36	80	60
Gen III LWR	1000	36	80	60

Graphical representation of the manpower required for different sizes of nuclear reactors

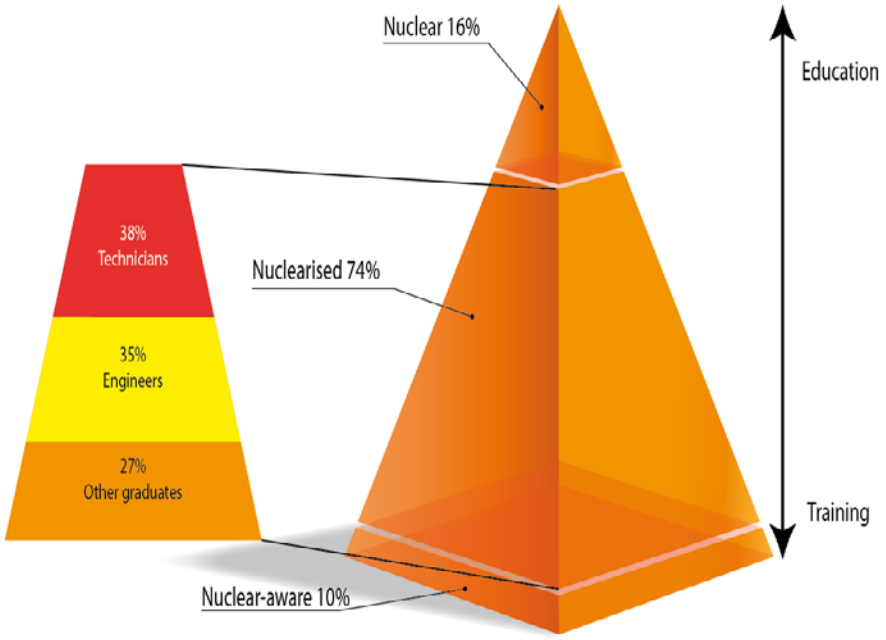


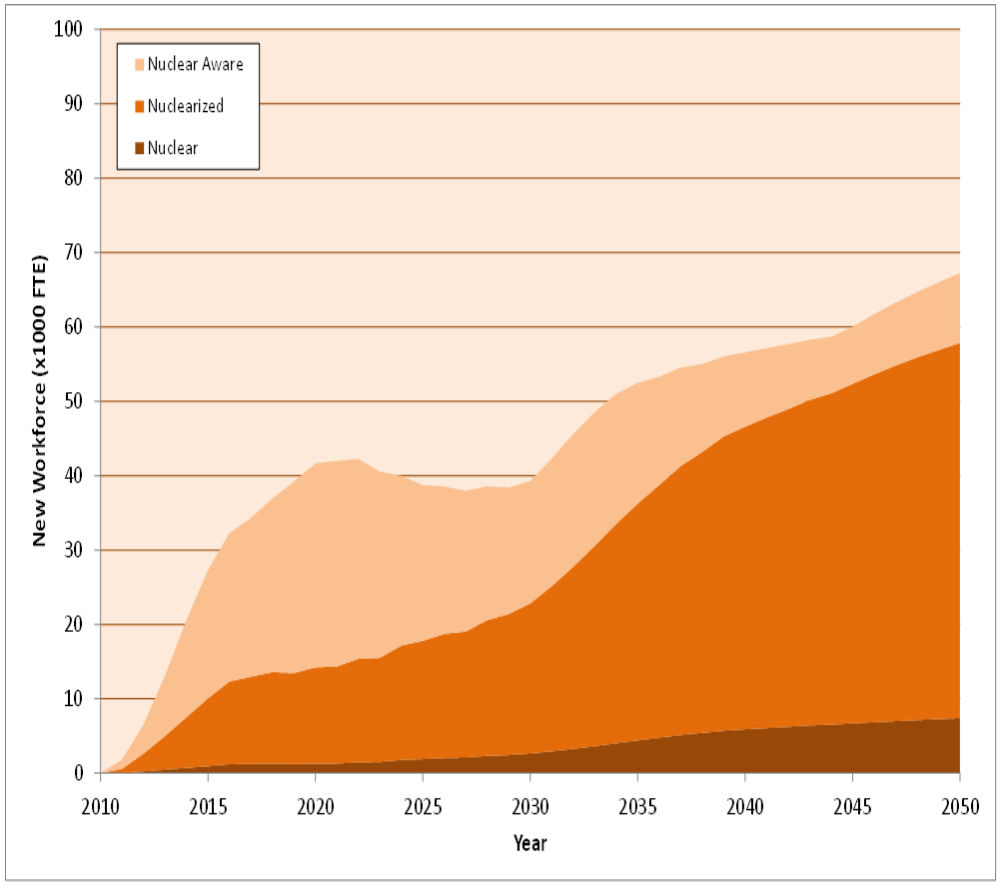
Comparison with past experience





Nuclear Energy Sector Skills





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Thank you!