



World Young Generation in Nuclear Thermometer

Making sure to ask the right questions before trying to find the right answers

1 EXECUTIVE SUMMARY

The International Youth Nuclear Congress (IYNC) is an evolving and growing organization and therefore, must periodically mature adequate plans, financial models and institutional structure towards the future, but also develop indicators allowing to assess the impact of its activities becoming more effective and efficient upon serving the world young nuclear generation and communicating the benefits of nuclear science and applications during the next decades.

Within most countries with a sizeable nuclear industry, there are clear demographic challenges due to aging workforces and a lack of mid-career professionals to mentor incoming engineers and scientists. It is therefore important to understand what the young generation needs and what can organizations like IYNC and the YGNs do to serve their proposes, to enhance their professional growth and empower them to face the challenges of the years to come.

The International Youth Nuclear Congress has to play an important part in this effort by taking a global pulse check of these young professionals' ambitions, worries and observations to build a comprehensive report. In addition, in order for the IYNC to develop a proper institutional strategy allowing the organization to plan and be prepared for the coming decade, it is essential to understand the current global mind-set of young nuclear professionals. Surveying members and potential members is an excellent method to achieve this.

IYNC will develop a series of surveys trying to measure what is important for young people working in the nuclear industry today and what their future intentions are.

This project designs a series of surveys and distributes it through social media, communicational channels, IYNC partners, universities and as many nuclear related institutions as possible. Information will be classified by region, age ranges, profession, etc.

IYNC will publish the data together with a clear description of the methodology implemented and supported by statistical and social theory, and the analysis performed correlating other databases. It is IYNC intention to periodically develop this project, where hopefully more organizations can join, and publish the results delivering a solid analysis showing also the evolution of the indicators along the years, which aims at becoming a reference for the industry.

The present document sets the bases of the project, provides a high level description of the structure implemented and the main framework.





2 PROJECT DESCRIPTION

Project name: World Young Generation in Nuclear Thermometer (WYGNT)

Project Director: MSc. Cristian VEGA, IYNC Vice-President

Vision: Comprehensive data and analysis on the current mind-set of young people in the global nuclear industry.

Mission: To collect information on the YGNs current thinking, fears, expectations, desires and challenges and how IYNC can serve these purposes. Enabling IYNC to develop efficient and effective activities and long-term strategies, and providing a sources of information for different organizations.

2.1 Project scope:

The WYGN Thermometer will develop a set of dynamic surveys that will target two groups: students and young professionals. The surveys aim to provide IYNC with extensive, clear and useful information on what the current YGN is thinking and feeling. The survey participant will only see one set of questions, result of an underlying decision flow diagram based on previous answers (happening behind the interface with the participant).

These surveys will measure what is important for young people working in the nuclear industry and students, and how they feel towards the future. Questions will cover their fears, main pitfalls they can see in their careers, what would they change if they could and how? What is that they believe, that would improve their careers and the industry itself? How can IYNC and related organizations serve any of these purposes?

2.1.1 Out of scope

The following items are out of scope of this project:

1. To collect information on public opinion/acceptance towards nuclear energy or nuclear technology.
2. To estimate the knowledge on nuclear industry amount students and young professionals.

2.2 Project Aims

Following, some high level points expressing the type of information that the surveys should be designed to provide. This is, of course, a work in progress as the team will also bring new ideas.

The project will look to determine:

- The interest of students of communication related and other non-technical careers, in the nuclear industry.
- The reasons behind the interest or no interest of students in nuclear industry.
- The main obstacles in a young professional (YP) career and how IYNC and similar organizations can help.
- What are the fears that YPs have towards the future of the industry?





- What would YPs change if they could and why?
- What the YPs think they need to improve their future and their careers.
- What YPs think that nuclear industry needs now and in the future?
- What YPs believe the nuclear industry should improve?
- What YPs would like to change within their own organizations, do they feel challenged? Do they feel empowered? Do they feel undervalued and what should be different?
- What motivates YPs today and what they consider important and why?
- What YPs expect from an organization like IYNC?

After the surveys have been completed the IYNC will collate and analyse the results and create a report with recommendations for future engagement.

3 PROJECT DELIVERABLES

3.1 Distribution

The survey will be massively distributed through all means possible and participants will complete it anonymously. A distribution plan will be developed, identifying companies, YGNs around the world, as well as nuclear and educational institutions. IYNC partners will also be invited to distribute the survey as well.

3.2 Data processing

This data will provide IYNC with remarkable knowledge and correlations will be developed (not only using the database generated but also other international organizations public data such as access to water/energy/education per region). Information and conclusions will be draw out per gender, country, age range, educations, etc., enabling the development of an effective and efficient strategy together with ideas, programs, new partnership strategy, tools and products useful to young professionals all over the world in the nuclear industry. Each one of these programs and tools can be applied by region or culture based on the data.

3.3 Interfaces

The success of this project is highly linked with the capacity of IYNC to distribute the survey but also insist and ask constantly for people to complete the survey. IYNC networks, teams and committees shall be involved, together with partners organizations.

3.3.1 Assumptions

Developing a survey is not an easy task. It must be developed in such a way that items within it are neither offensive to anyone or vague but also making sure that the information IYNC is interested to obtain will be gathered. This means that questions must be straightforward, avoiding hesitation when answering and reducing the chance that the surveyed person expands the scope of the question.

- i. **Conditions** The success of the project is linked to the support from IYNC network, partners, IYNC members, IYNC social media and communicational channels and IYNC network databases and past conferences databases will be essential.





Budget: The success of the project will depend of the capacity for reaching people and making sure the survey is completed. A set of motivational rewards will be developed to encourage institutions to reach a certain number of people surveyed.

Time: The project shall achieve a minimum number of people surveyed but also with a minimum representative distribution per region, age, etc. (categories and success criteria are defined below). The survey shall be available for participants to complete it, at least during 7 months but no more than half a year before IYNC2022 congress.

II. **Project main objectives :**

Count with representative data on the world YGNs, well analysed results, correlations and conclusion adequately communicated or presented by March 2022.

A- Project benefits towards IYNC mission/vision and society:

All these data will provide IYNC with information to develop an effective and efficient strategy together with ideas, programs, new partnership strategy, tools and products useful to young professionals all over the world in the nuclear industry. In addition, understanding the needs of the world YGN will serve IYNC mission and vision by enhancing the efficiency of IYNC activities and investments. Each one of these programs and tools can be applied by demographics based on the data. Other organizations will certainly benefit of these data and analysis in similar ways but also being able to perform their own analysis and suggestions for future editions of the project.

B- Project success How is the success (or not) of the project identified? :

1. **Success criteria:**

- i. The project shall include at least 90% of the countries members of IYNC.
- ii. For each country, the minimum statistical sample size shall be reach (number of people surveyed) needed to cope with the degree of confidence defined and based on the estimated population of young professional estimated per country. *For instance, out of a total population of 1000 individuals, a sample 375 needs to be surveyed in order to reach the 95% of confidence.*

Thus, the success criteria is defined as: Reach the minimum statistical sample in order to obtain the defined degree of confidence per country for 90% of IYNC country members.

2. **Quality assurance:** Quality is divided in two main columns; quality of the survey and quality of the sample population. The indicators and criteria will be developed further.

C- Time: The project will be developed in 5 phases; Team establishment and YGNs information, Surveys generation, Methodology and Distribution planning, Testing and Execution, Data analysis and Incentives, and Lessons learnt and long-term implementation.





4 PROJECT SCHEDULE

The present section describes the main phases of the project. It is worth to mention that, during the first edition of the project, several documents are being developed. The General Methodology document describes the theoretical bases and acceptable alternatives. Each one of the phases counts with a guidance document defending the main tasks, steps and aspects to think about within each team. In addition, the adaptation of the general methodology to each region and the justification for each decision is documented as well. All this documentation, being generated during the implementation of the project, will set the bases for the next edition and start a documented enhancement process along time.

4.1 PHASE I: TEAM ESTABLISHMENT AND YGNs INFORMATION COLLECTION

Duration: 3 months.

Team establishment: The project will put together a team that will work in 4 main aspects: developing the surveys, distribution plan, and communication to stakeholders and data analysis. The team includes representatives from each BRIC country, Europe, Africa, South –America, Asia, Middle-East & North-Africa and North-America. These representatives should have knowledge on their respective regional nuclear industry, and preferably, skills and experience on data analysis and surveys (as far as possible).

Each one of these regional leaders will put together a team for the region. In addition, volunteer experts in the field will be incorporated as consultants.

YGNs information collection: In order to determine adequate indicators and success criteria, the team needs to develop criteria, collect information per country and sample groups. For instance, find the way to obtain a representative number of YPs in the nuclear industry in Brazil and students in technical and communicational careers (following some criteria). IYNC network will be of paramount importance in the process of estimating the size of the population to survey.

4.2 PHASE II: SURVEYS GENERATION, METHODOLOGY AND DISTRIBUTION PLANNING

Duration: 3 months.

Surveys generation: This is the most difficult task within the project. Survey must be clear, short and not difficult to answer but at the same time it needs to address all questions needed. The survey will be developed in English, Spanish and each BRIC's languages (India will be evaluated with locals). In addition, the tool/s (some regions may require a different tool) for surveying will be chosen.

Methodology: The general methodology will be developed taking into account statistical and social science recommendations. A diverse group of professionals will integrate the team to ensure a solid methodology. Nevertheless, the methodology will be adapted to each region to account for cultural, political and socio-economical aspects.





Distribution planning: The team will develop a survey distribution plan that will include tools, interfaces, stakeholders, schedule, and different phases with own indicators and milestones, communication plan and responsible persons. The surveys will be developed in English but translated to each BRICs languages at the least. Participants will complete it anonymously to increase participation.

4.3 PHASE III: TESTING AND EXECUTION

Duration: 7 months.

Testing: Once the survey is developed it is important to go through a testing phase assessing the effectiveness of the survey. (i.e. checking if the questions drive the participant to provide the information that is intended to be gathered). The testing phase will include a small but diverse group of participants. This procedure could be repeated, generating several versions of the survey, until the team decides it is effective and efficient enough.

Execution: The execution will be according to the distribution plan. Results will be stored in a database.

Incentives: The project shall deliver incentives intended to motivate YGNs and IYNC partners to reach certain targets on survey participants. The incentives should be carefully selected to avoid introducing a bias to the survey.

4.4 PHASE IV: DATA ANALYSIS

Duration: 3 months.

Data analysis: Processing the data, developing smart correlations and conclusions (not only using the database generated but also other international organizations public data such as access to water/energy/education per region). Adequate tools shall be selected and expertise within the team employed in order to deliver a professional analysis.

Report: The IYNC shall produce a report based on the analysis of the data. This report shall include a clear description of the methodology, areas to improve and lessons learnt together with breakdowns of the results by age, country, gender, education and role. The report will provide recommendations to the IYNC BoD/Executive Committee for future engagement with both IYNC members and non-members.

4.5 PHASE V: LESSONS LEARNT AND LONG-TERM IMPLEMENTATION

Duration: 1 months.

Lessons learnt: The main lessons learnt during the development of the first WYGNT and its implementation must be captured and documented. In addition,





recommendation for improvements per region on the methodology or data analysis that may not have been incorporated (due to the lack of knowledge, time, tools, etc.) must be reported internally so they can be considered in future editions of the project.

Long-term implementation: The IYNC aims at implementing the WYGNT periodically, so that, IYNC, the YGNs around the globe and other related organizations can assess the impact of their policies along the years. This project aims to become a reference in the industry. The frequency and other details of the long-term implementation will be discussed and recommendations will be reported.

