



BratMUN 2019 Study Guide

International Atomic Energy Agency

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FOREWORD FROM THE CHAIRS

Distinguished delegates,

First and foremost, we are excited you decided to choose the IAEA committee and hope you will have an enriching and educational experience. We are delighted to be the chairpersons of this committee, as we believe it is dealing with a topic of utmost importance. We look forward to the discussion held in the committee and hope that the final resolution will be effective and satisfactory to all member states.

Managing the meetings of this committee will be two chairpersons, first of which is Joachim Strzelecki. Joachim is in his senior year at LEAF Academy. He has taken part in many model conferences and debate competitions, starting with, the Winter Holidays Open 2018 in Zagreb or the Model European Parliament Slovakia 2019. Moreover, he was one of the main organizers of the Bratislava Schools Debate Competition 2019. He was also the Vice President of the General Assembly during AproMUN 2019 and chaired the United Nations Environment Programme committee during the same conference. His first experience with the IAEA was during BratMUN 2018 when he got recognized as the Outstanding Delegate in that committee. The topic of energy production and its impact on our lives is of great interest to him and he is looking forward to exploring this topic from a new perspective with the delegates in the IAEA committee.

The second chairperson of the committee will be Rebeka Jirsáková. Rebeka is in the senior year of International Baccalaureate program at Gymnázium Jura Hronca. She was the underchair of the ECOFIN committee at the 2018 BratMUN conference. This experience gave her insight into the procedure of MUN conferences and made her eager to attend more such conferences in the future. Rebeka is very excited about the topic of atomic energy and its production. She is expanding her knowledge in this field by attending symposia and lectures on the topic of atomic energy, and by following the news on this topic. She is also looking forward to hearing the opinions of all the delegates and hopes for a helpful and reasonable resolution.

The study guide you are about to read is an instrumental part of your preparation for the committee sessions. It contains a general introduction to the topic, as well as important data and statistics to back up your claims. We encourage you to take part in the additional reading section as well and do your own research, to expand your knowledge on your topic even further. Do not forget to read the Rules of procedure, to make sure you are prepared for the intense discussions ahead of us. Keep in mind that the purpose of the conference is also for you to learn how to work towards common goals and experience what diplomacy is and what it is not.

Finally, we wish you good luck with your preparation. We are looking forward to our committee sessions and hope for their successful outcome and a friendly atmosphere.

We look forward to seeing you!

Best Regards,

Joachim Strzelecki & Rebeka Jirsáková

Chairpersons of the IAEA Committee

ABOUT THE COMMITTEE

The International Atomic Energy Agency is an international organization promoting the peaceful use of nuclear energy and inhibiting its use for military purposes (such as developing nuclear weapons). IAEA also aims for scientific and technical cooperation in the nuclear field. By promoting the safe and peaceful use of nuclear energy, the IAEA contributes to international security and peace and to the United Nations' Sustainable Development Goals. Though it was established as an autonomous organization through its own treaty (the IAEA Statute), the IAEA retains close relations with both the General Assembly and the Security Council. It reports to both of them if needed (but is not controlled by them directly).

The IAEA supports the use of nuclear technology and science to meet the Sustainable Development Goals set out in the UN 2030 Agenda for Sustainable Development. This includes the use of nuclear power to contribute to food production, human health, water management, and others.

Main aims

The main mission of the IAEA is to pursue safe, secure and peaceful uses of nuclear sciences and technology. The IAEA executes this mission with three main functions:

- the inspection of existing nuclear facilities to ensure their peaceful use (Safeguards and Verification)
- providing information and developing standards to ensure the safety and security of nuclear facilities (Safety and Security)
- a hub for the various fields of science involved in the peaceful applications of nuclear technology (Science and Technology).

Structure

The IAEA consists of three main bodies:

- **The Board of Governors** – one of IAEA's two policy-making bodies. The Board makes recommendations to the General Conference on IAEA activities and budget, is responsible for publishing IAEA standards and appoints the Director-General subject to General Conference approval.
- **The General Conference** – its function is similar to the UN General Assembly. It approves the actions and the budgets proposed by the Board of Governors, and it serves as a forum for debate on current issues and policies.
- **The Secretariat** – the professional and general service staff of the IAEA. The Director-General (the head of the Secretariat) is responsible for enforcement of the actions passed by the Board of Governors and the General Conference.

The IAEA is authorised to encourage and assist in the research, development and practical application of atomic energy for peaceful uses throughout the whole world. It can also foster the exchange of both scientific and technical information as well as materials and equipment between members of the Agency. In case of need, the IAEA can provide materials, services, facilities and equipment for research and practical application of atomic energy in the under-developed areas of the world.

The IAEA reports on its activities annually to the General Assembly of the United Nations, and to the Security Council if appropriate. The Agency also reports to the Economic and Social Council and other organs of the United Nations on matters that are within the competence of these organs. The IAEA cannot assist the members subject to any political, economic or military conditions incompatible with the provisions of the Statute of the IAEA.

INTRODUCTION TO THE TOPIC

Securing the process of production of nuclear energy

In the last decade, there has been a lot of discussion regarding nuclear energy. The most frequently asked questions were: Are they still profitable? Aren't renewable energy sources better? Are they safe?. This committee will discuss closely all potential issues that might arise when producing nuclear energy. From mining Uranium ore, up until managing the radioactive waste.

There have been two major catastrophes connected to nuclear power plants. The first one in Chernobyl in 1986, exposed millions of people to potentially dangerous nuclear radiation. The other one was in 2011 in Fukushima, where a natural disaster showed just how fragile the protection of reactors was. Although the death rate associated with the production of nuclear energy is the smallest of all forms of energy production (0,07 deaths per 1TWh produced as compared to 32,72 deaths for brown coal), the public conscience remains the driving factor of all anti-nuclear movements. This committee wants to ensure that events like this are less likely to happen, but even if they do, the world is prepared for such an occasion.

The final outcome of the 2019 BratMUN IAEA council would be to find ways and suggest measures that will help the world prepare for the future to come and decide how exactly will the future of production of nuclear energy look like.

KEY ACTORS

Kazakhstan

During the 20th century, Kazakhstan was the hotspot of the USSR in both nuclear energy production and Uranium mining. The world's leading Uranium producer doesn't want any additional measures regarding the production of nuclear energy as they would have a negative impact on the sales of Uranium.

Finland

In the last few years, Finland has been gaining prominence in all the sectors connected to nuclear energy. Finland is so far the only country in the world with actual long-lasting plans of radioactive waste management. It wants to ensure that the waste they produce will be safely stored.

Germany

Germany is in league with Finland but instead of finding ways to dispose of nuclear waste, Germany strongly opposes the production of nuclear power overall. They pledged to phase out all of their reactors by 2022. They would strongly push that the safest way to produce nuclear energy is not to produce it at all.

Japan

As the country that witnessed the power of nuclear energy not only during WW2 but also in the last decade during the Fukushima disaster, Japan is strongly in favor of ensuring that the production of nuclear energy will be safe. They are also in favor of increasing the amount of nuclear energy that they produce. In 2014 Japan updated their energy plan, stating nuclear energy as a key part of Japan's steps to combat climate change.

China

The most populated country in the world has to be able to afford cheap sources of energy, nuclear energy is one of them. China would oppose any foreign intervention in its energy sector. They would also oppose increasing the security measures as it would probably drive up the costs of production. China aims to be fully self-sufficient in terms of its supply chain of nuclear fuel.

A BRIEF HISTORY

The Chernobyl disaster

The Chernobyl Nuclear Power Plant is a nuclear power plant located near the Ukrainian city of Pripjat. The power plant consisted of four completed RBMK-1000 reactors (graphite-moderated nuclear power reactors) - reactors 1 and 2 were completed between 1970 and 1977, and reactors 3 and 4 were completed in 1983. There were two more reactors under construction.

The power plant produced 10% of Ukraine's electricity.

On 25 April, prior to a routine shutdown, the reactor crew at reactor No. 4 began preparing for a systems test simulating a power outage. A series of operator actions, including the disabling of automatic shutdown mechanisms, preceded the attempted test early on 26 April. By the time that the operator moved to shut down the reactor, the reactor was in an extremely unstable condition. A peculiarity of the design of the control rods caused a dramatic power surge as they were inserted into the reactor. This massive power increase led to several explosions in the reactor's core, which released fission products to the atmosphere and caused a number of fires, causing the main release of radioactivity into the environment.

The accident was the result of a flawed reactor design that was operated with inadequately trained workers. It resulted in 237 people suffering from acute radiation sickness, of whom 31 died within the first three months.

The Fukushima Daiichi nuclear disaster

The Fukushima Daiichi Nuclear Power Plant is a disabled power plant located in the Tohoku region. The power plant consists of six boiling water reactors, which are a type of light water reactors, and was first commissioned in 1971. The power plant was one of the 15 largest nuclear power plants in the world.

Immediately after the Tohoku earthquake and the following tsunami on 11 March 2011, the active reactors (1, 2 and 3) automatically shut down their fission reactions. However, the tsunami flooded the emergency generators that were providing power to the pumps that cooled reactors. The coolant loss led to nuclear meltdowns, hydrogen-air explosions, and the release of radioactive material in reactors 1, 2 and 3 between 12 and 13 March.

The Fukushima disaster was the most significant nuclear incident since the Chernobyl disaster.

KEY PAST ACTIONS

The Chernobyl accident had a profound impact on the nuclear industry, leading to increased cooperation on safety and the adoption of new legal instruments. Most crucially, it focused global attention on safety and the importance of human and organizational factors in achieving it. As a result, the term “safety culture” was coined.

The IAEA has provided support to Ukraine, Belarus and Russia in environmental remediation, decommissioning and management of radioactive waste and strengthening the safety levels at the Chernobyl nuclear power plant – in several instances in cooperation with other United Nations organizations.

In the months following the Chernobyl accident, two global agreements related to nuclear safety were adopted and came into force: the Convention on Early Notification of a Nuclear Accident and the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency, which includes sharing official

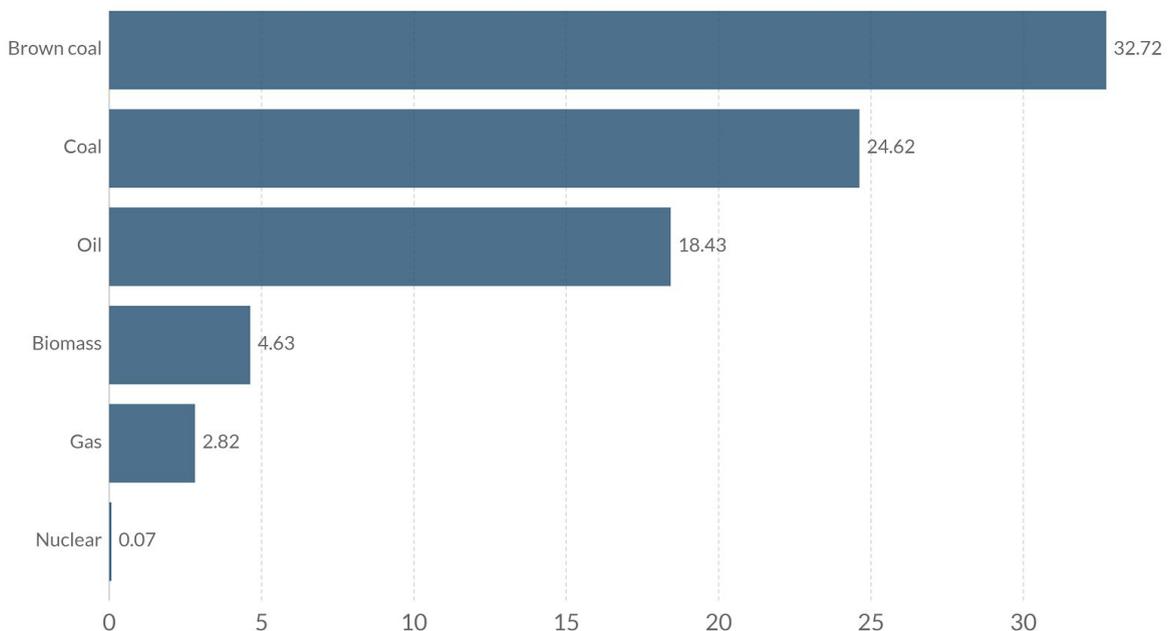
information among Member States and providing assistance to affected countries. Both conventions have significantly strengthened the global nuclear safety regime. Ten years later, in 1996, the Convention on Nuclear Safety came into force, further strengthening nuclear safety. Its signatories operating nuclear power plants have committed to maintaining a high level of safety through the use of international benchmarks based largely on IAEA Safety Standards.

In the same year, the Comprehensive Nuclear-Test-Ban Treaty produced by the UN Conference on Disarmament was adopted. This treaty bans nuclear explosions by everyone everywhere; whether it's on the Earth's surface, in the atmosphere, underground or underwater.

DATA AND PRIMARY SOURCES

Death rates from energy production per TWh

Death rates from air pollution and accidents related to energy production, measured in deaths per terawatt hours (TWh)

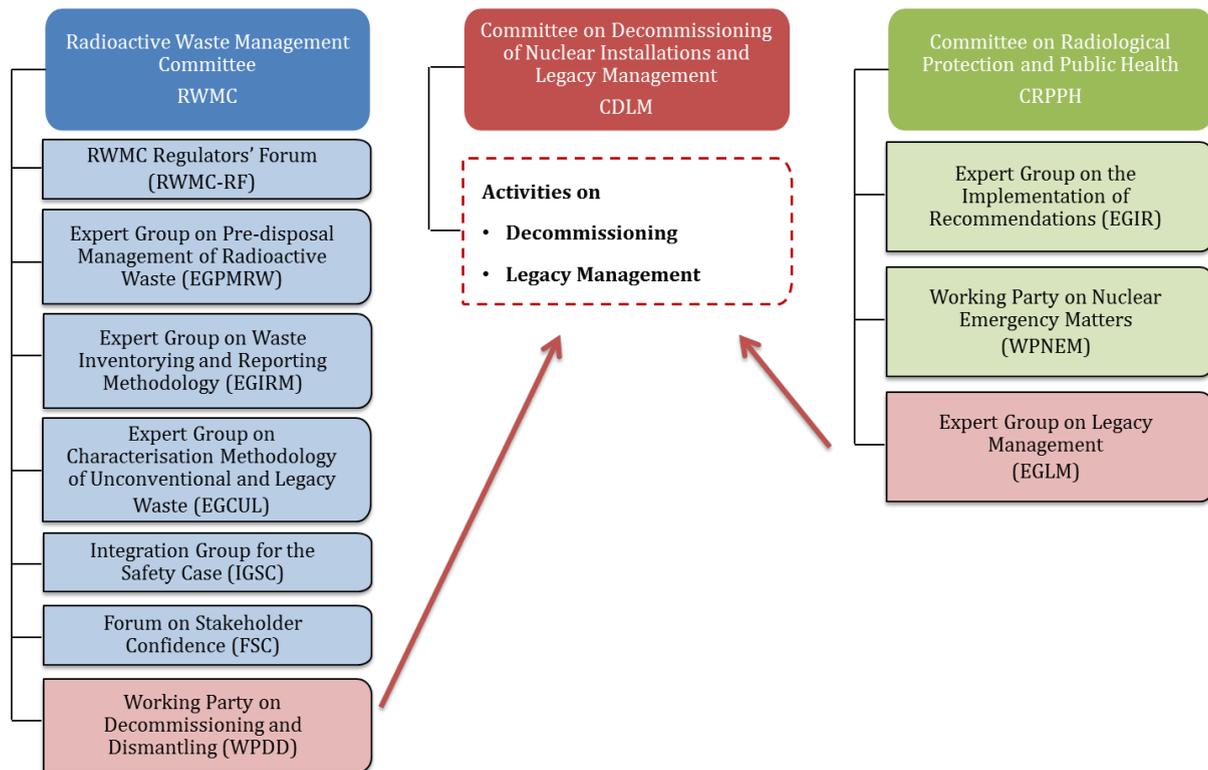


Source: Markandya and Wilkinson (2007)

OurWorldInData.org/energy-production-and-changing-energy-sources/ • CC BY

Note: Figures include deaths resulting from accidents in energy production and deaths related to air pollution impacts. Deaths related to air pollution are dominant, typically accounting for greater than 99% of the total.

<https://www.oecd-nea.org/rwm/cdlm/background.html>



Recommended Reading

Basic knowledge regarding nuclear energy:

https://en.wikipedia.org/wiki/Nuclear_energy_policy_by_country?fbclid=IwAR2UqeFGiYwDA-uYk9DFm5CXyKpXVOuLmp2_RvJ_ul_wolkTUDwYWglbo0

https://www.youtube.com/watch?v=zZUMoEfTr7w&fbclid=IwAR32F6qrr0QI_JWtCaPOM-7VylyurfGWmoYPIMU955Irl3vTBcrGM0Kwqo

<https://www.forbes.com/sites/jamesconca/2012/06/10/energys-deathprint-a-price-always-paid/#752f4d63709b>

<https://www.vox.com/energy-and-environment/2018/4/5/17196676/nuclear-power-plants-climate-change-renewables>

Specific further reading more closely related to the subject:

https://www-pub.iaea.org/MTCD/Publications/PDF/PUB1789_web.pdf

<https://www.youtube.com/watch?v=YgVyPwhkoJs>

https://www.youtube.com/watch?v=uU3kLBo_ruo

<https://www.youtube.com/watch?v=poPLSgbS06k>

<https://ourworldindata.org/what-is-the-safest-form-of-energy>

<https://www.iaea.org/newscenter/multimedia/photoessays/nuclear-security-in-big-cities>

<https://www.iaea.org/topics/emergency-preparedness-and-response-epr>

<https://www.theguardian.com/science/blog/2016/apr/11/time-dispel-myths-about-nuclear-power-chernobyl-fukushima>

https://www-pub.iaea.org/MTCD/Publications/PDF/P_1708_web.pdf

https://www-pub.iaea.org/MTCD/Publications/PDF/Pub1273_web.pdf

QUESTIONS TO CONSIDER

- How to fix the problem of disposing of radioactive waste?
- As the closing of nuclear power plants is very costly and time-consuming, how do we ensure that no catastrophes arise during decommission?
- Should there be a regulatory body that would regulate the number of nuclear power plants/reactors in IAEA countries?
- Should an international body responsible for securing nuclear power plants in case of natural/nuclear disasters or should the full responsibility be left to the countries themselves?
- How can countries mitigate the dangers and disadvantages of nuclear energy?
- How do we secure nuclear power plants against natural disasters?

CLOSING REMARKS

This study guide provides a brief overview of the topic. You should go through the recommended reading section, conduct further research into your country's policy and start brainstorming possible answers to the questions to consider and solutions to the discussed issue. The chairpersons are aware that this is not an easy task, however, your performance in the committee will reflect your preparation and research. This will also ensure that all of us have the best time possible at BratMUN 2019.

In addition, you are expected to send a position paper approximately in the length of one page no later than 25.10.2019 to the email address bratmun.iaea@gmail.com

The position paper should contain four sections: Background of Topic, Past International Actions, Country Policy, and Possible Solutions. It should be accompanied with your name, surname, the country you are a delegate of, the topic, name of the committee and the name of the school you are attending.

We are looking forward to seeing you and cooperating with you at the conference and wish you the best of luck with your preparation.

In case of any questions about the topic, position paper, Rules of Procedure or anything else, do not hesitate to contact us to the following email addresses:

Joachim Strzelecki joachim.strzelecki@student.leaf.academy

Rebeka Jirsáková rebeka.jirsakova@gmail.com

Best regards,

Joachim Strzelecki and Rebeka Jirsáková

Chairpersons of the International Atomic Energy Agency