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Presentation of the Committee

The IAEA was created **in 1957** in response to the deep fears and expectations generated by the discoveries and diverse uses of nuclear technology. The Agency's genesis was U.S. President Eisenhower's **"Atoms for Peace"** address to the General Assembly of the United Nations on 8 December 1953. The U.S. Ratification of the Statute by President Eisenhower, on 29 July 1957, marks the official birth of the International Atomic Energy Agency.

Eisenhower: "In fact, we did no more than crystallize a hope that was developing in many minds in many places … the splitting of the atom may lead to the unifying of the entire divided world".

The IAEA is strongly **linked to nuclear technology and its controversial applications**, either as a weapon or as a practical and useful tool. From the beginning, it was given the mandate to work with its Member States and multiple partners worldwide to promote safe, secure, and peaceful nuclear technologies.The objectives of the IAEA are to promote the use of nuclear technologies (energy and non-energy use of nuclear, such as radio for example) as a substitute for fossil fuels (coal, gas,…)to organize and direct international nuclear research and to ensure the safety and security of nuclear facilities and uses. This second mission also includes the fact that the IAEA is the organization that oversees all nuclear materials and facilities, to prevent any non-specific use of these technologies. Therefore, one of its main achievements is the NPT, the non-proliferation treaty that the IAEA promotes in each country to develop the peaceful use of nuclear energy. However, the IAEA has no power to pressure the decision of the member states, it can only suggest projects or guide them.

Topic 1 : Should Atomic Energy be One Major Key Used to Fight Climate Change?

In 1954, the Soviets built the first civilian nuclear power station connected to the electricity grid in Obninsk. This event is proof that atomic energy, which until then had only been used for mass destruction weapons, could be a massive energy source for humanity. Today, **nuclear energy represents more than 10% of our worldwide production** distributed among thirty countries. This energy is the heart of the climate change debate because of its low greenhouse gas emissions. It is catching attention as a possible solution for reducing our carbon footprint while meeting our growing electricity needs. However, its role in the worldwide energy transition is highly controversial because it represents a huge technological and economic cost for countries wishing to embark on the nuclear gamble. In addition, this energy products nuclear waste which cannot be recycled or destroyed for the moment and must be stored in an ultra-secure place because of their dangerous nature.

The IAEA can do several things about this topic:

- Lead all UN member countries towards the most sustainable and safe possible use of civil nuclear energy.
- Suggest trade agreements between UN member countries for nuclear reactors in countries that haven't yet one.
- Supporting the development of international innovation projects on atomic energy, and more specifically on the creation of a hydrogen fusion nuclear reactor.

The purpose of this first topic is to reach an international consensus on the potential future mass use of nuclear power in the fight against global warming and the global energy transition. This guideline should help you in your research.

Nuclear Energy's Advantages

Low Greenhouse Gas Emissions Compared to Other Energy Sources

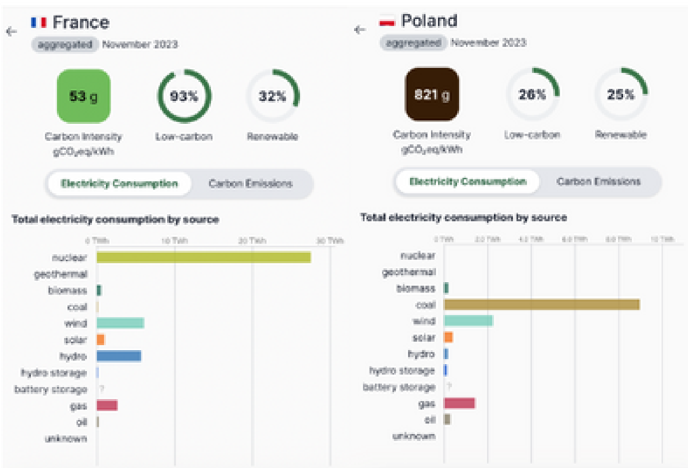
Combustible	Emission de CO2
Centrale à nucléaire	6 gCO2e/kWh (France)*
Eolien (en mer)	9 gCO2e/kWh
Eolien (en terre)	10 gCO2e/kWh
Hydroélectrique	10 gCO2e/kWh
Biomasse (déchets de bois avec turbine à vapeur)	32 gCO2e/kWh
Géothermie	38 gCO2e/kWh
Electricité (chauffage)	210 gCO2e/kWh
Gaz naturel	443 gCO2e/kWh
Pile à combustible	664 gCO2e/kWh
Centrale fioul-vapeur	730 gCO2e/kWh
Pétrole lourd	778 gCO2e/kWh
Centrale à charbon	1 058 gCO2e/kWh

*La moyenne monde se situe à 6 gCO2e/kWh

Source : Bilan GES de l'Ademe, méthode dite « saisonnalisée par usage ».

https://www.economiedenergie.fr/les-emissions-de-co2-par-energie/

Comparison of the French and Polish electricity mix over 2023:



https://app.electricitymaps.com/map

Huge Continuous Production Capacity

Unlike renewable energy sources such as wind and solar, nuclear power can provide stable and continuous electricity generation, making it reliable for meeting basic electricity demand.

Plentiful Energy

Reserves of uranium, the raw material for nuclear power, are relatively abundant, guaranteeing a stable supply over the long term. Thanks to identified reserves of uranium, we can ensure a continuous supply for a century for fission power stations (8,070,400 tons of uranium metal). The **5 countries with the largest uranium reserves in the world are Australia (25.7%), Kazakhstan (11.3%), Canada (10.6%), Russia (8.2%) and Namibia (6.8%).**

More Energy Produced per Hectare

Let's compare EDF's Cordemais thermal power station with the Gravelines nuclear power station. The coal-fired power station has a capacity of **1600 MW for 150 hectares**, while the nuclear power station has a capacity of 5460 MW for the same area. Compared with certain other forms of energy, nuclear power takes up less land, which can be beneficial for the preservation of land and biodiversity.

Nuclear Energy's Disadvantages

Nuclear Waste Management

Nuclear waste includes rubble, tools, protective clothing, spent fuel, and used parts whose radiation can pose a risk to health and the environment. They cannot be reused or recycled. The dangerousness of radioactive waste gradually diminishes over time: this is radioactive decay. This decay can take from a few hours to several hundred thousand years. In France, short-lived waste represents **more than 90% of the total volume of radioactive waste in France, but only 0.03% of total radioactivity**. Long-lived waste represents 10% of the total volume for 99.9% of the total radioactivity. It is very difficult to provide figures on a global scale, as this can sometimes be a matter of state secrets. How to treat this waste?

- **Ocean dumping** was definitively banned by the London Convention on the Prevention of Marine Pollution **in 1993.**
- **Surface storage is a solution** for permanent underground storage in isolated, secure facilities for the benefit of man and the environment. Unfortunately, storage sites have a limited capacity for waste, some of which have been radioactive for several thousand years. There is a risk that these sites could be accidentally reopened for future generations.

Risk of Accident

We all remember the accidents at **Chernobyl (1986) and Fukushima (2011)**, which had serious human and environmental repercussions.

Nuclear Security in the Face of Terrorism

The risk of a terrorist attack on nuclear power plants is a grave concern because of the potentially devastating consequences if successful. Nuclear power plants are potential targets because of their intrinsic radioactivity and stringent security measures are in place to reduce this risk. International cooperation and strict security standards common to all members aim to minimize the vulnerability of nuclear facilities to acts of terrorism by sharing information on potential threats.

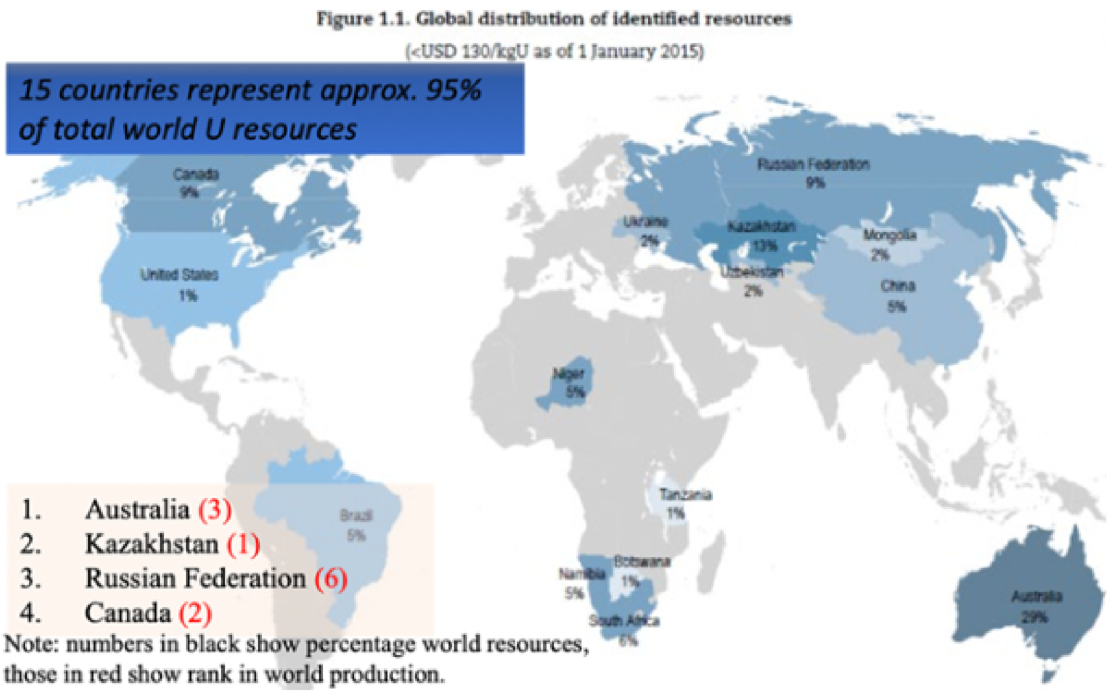
High Construction and Decommissioning Costs for Power Stations

The construction and decommissioning costs of nuclear power plants are among the most significant aspects of the nuclear industry. The construction of a nuclear power plant involves considerable initial expenditure, due to its technological complexity, rigorous safety standards, and long construction times. Recent estimates put the total cost at **$800 million ($1300/kW) or more for 600 MW plants.**

What's more, dismantling a plant at the end of its life also requires major investment to safely dismantle the facilities and manage the radioactive waste. Énergie de France (EDF) estimates that dismantling all 58 of its nuclear reactors would **cost €60 billion**. These high costs are a major challenge for the nuclear industry, but they are essential to guarantee the safety of the facilities throughout their lifecycle, estimated at around 40 years, and to protect the environment. In addition, the construction time of a nuclear station is generally **5 to 10 years**, depending on its size and complexity.

In summary, this energy appears to be accessible to only a very small minority of developed countries. It is hardly conceivable that this "energy of the rich" could develop without international aid in poor or isolated countries.

Dependence on Rare Raw Materials that Are not Available Everywhere



https://www.ifpenergiesnouvelles.com/article/les-terres-rares-transition-energetique-quelles-menaces-les-vitamines-lere-moderne p.14

Some countries with nuclear power plants, or those wishing to build them, have no natural uranium reserves on their territory. The countries that do have such reserves therefore have potential leverage over the others.

Non-Proliferation Issues

The use of nuclear energy to generate electricity can be diverted to military purposes, raising concerns about the proliferation of nuclear weapons. To combat this, the IAEA can urge states to sign nuclear non-proliferation decrees and carry out inspections to determine whether these rules are being complied with. For example, the **Joint Global Action Plan signed by Iran and the IAEA on 16 January 2016 requires Iran to reduce by 2-thirds its uranium enrichment centrifuges and not to enrich this same uranium by 3.67%.** More generally, Iran accepts controls on peaceful nuclear use by the IAEA on declared and unreported nuclear facilities. This country must abide by the principle of transparency.

Local Environmental Impact

Of course, the construction of a nuclear station can lead to the disappearance of local biodiversity. In addition, most nuclear power plants use water to cool reactors. This can lead to problems with the release of heat into surrounding streams, affecting local flora and fauna. Hot water discharges can disrupt aquatic ecosystems. For example, a species of fish that is very affected by rising temperatures in rivers and streams due to human activity is salmon. Salmon is a species that depends on specific water temperatures for various life stages, including reproduction. Increases in water temperature due to climate change and thermal pollution from human sources can disrupt these thermal requirements, compromising the survival of salmon eggs and juveniles, and migration of the species to breeding areas. This can have a significant impact on salmon populations in rivers and streams.

Are Trade Agreements for the Development of Nuclear Power in Non-equipped Countries Conceivable?

Trade agreements for the development of nuclear energy in non-equipped countries are possible, but they can be complex and involve many considerations, including nuclear security, non-proliferation, major financial investments, technology transfers, and environmental concerns.

Here are some points to consider :

Nuclear Security

Trade agreements must ensure that nuclear facilities are designed, built, and operated safely, by international standards set by the IAEA. This condition could disincentivize some countries that value the sovereignty of their proposed nuclear facilities as international control will be required to enforce IAEA standards.

In addition, countries experiencing internal or external political turmoil may not be able to incorporate such an agreement. If power plants were built in these countries, they would be too exposed to ongoing conflicts. You can use the example of the **Zaporija power station in Ukraine**, which is still dangerously exposed to armed conflict between Russians and Ukrainians. Since the beginning of the conflict, the plant has suffered 8 power cuts that can each destabilize the nuclear fuel and create an uncontrolled chain reaction. **The last general power outage was on December 2, 2023.**

Non-Proliferation

These agreements must include international control over the use of exchanged atomic technologies to avoid any attempt to use these technologies militarily. This could still pose a problem for states wishing to retain their sovereignty rather than developing international cooperation. However, such monitoring could limit member states in their potential plans for nuclear militarization and thus reduce the risk of large-scale atomic conflict.

In its natural state, a uranium fissile fuel is composed of **an average of 0.9% uranium 235** (the atom necessary for nuclear fission). For it to be used in nuclear power plants, the fuel must be enriched to **reach 3 to 5% uranium** thanks to ultracentrifugation technology. Finally, to be used in the military field, the fuel must reach **80 to 99% uranium**. The potential agreement will have to control this enrichment to ensure that uranium is not enriched to the "military" quality. The IAEA controls related to the NPT partly fulfill this objective but are still too insufficient.

Technology Transfer

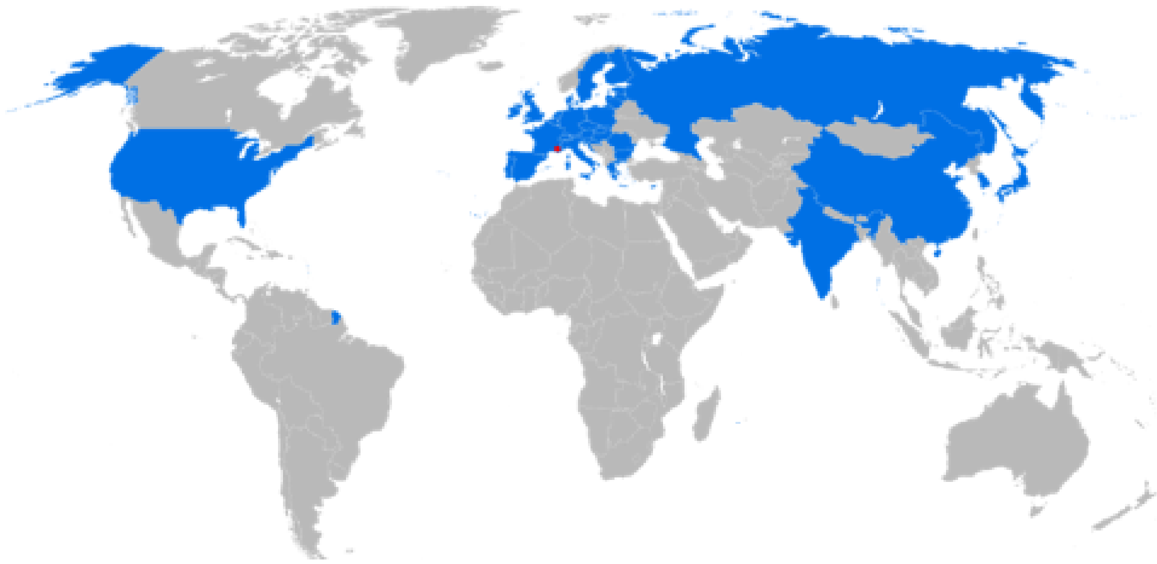
Countries with advanced nuclear technology may be reluctant to share this knowledge because this loss of technological monopoly means a great economic loss. Moreover, if this exchange is envisaged, the counterparties requested by these states could be too high for the states wishing to acquire them.

International cooperation around atomic fusion: the project ITER for the future

Presentation

Nuclear fusion is a target for nuclear science today, as it could be a potential source of energy that produces more energy than it consumes. The research today on this topic is embodied by **the international ITER project.**

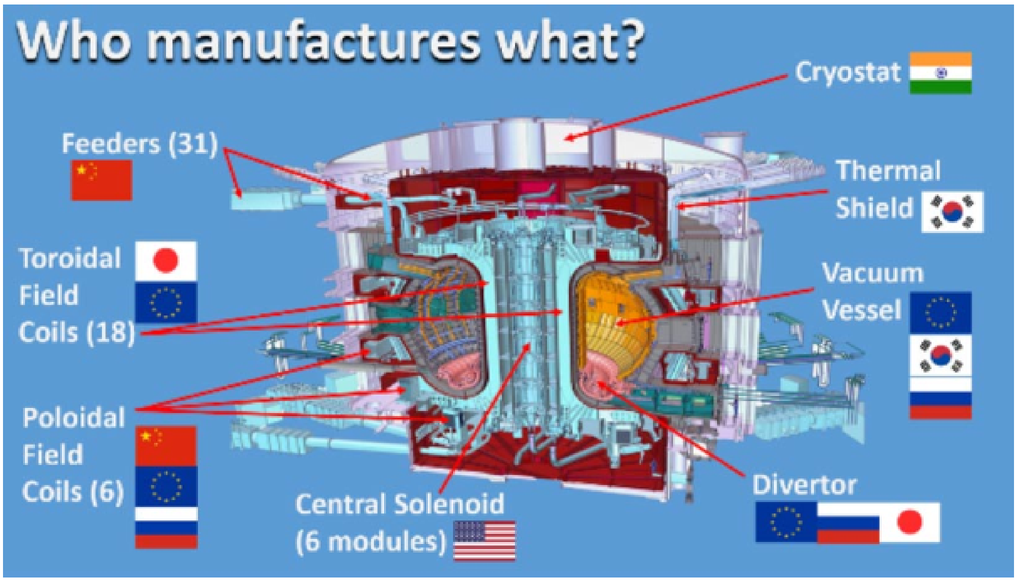
Located in France, this project is followed by numerous countries like Russia, China, the EU, the USA, and Japan. The purpose is to create a reactor with nuclear fusion, which could be able to generate an energy source that does not emit any CO_2 and does not create any nuclear waste.



https://fr.wikipedia.org/wiki/ITER

This map represents all the countries that participate in this initiative.

Develop International Cooperation Around a Very Innovative Project



The previous illustration gives you a concrete repartition of the project

ITER is the first nuclear project with that level of international cooperation, engaging state investments. The difficulty in having that level of international cooperation is due to the strategic aspect of nuclear energy: as the countries developed their process to exploit the nuclear energy from the resources to the infrastructures, they also developed their nuclear research sector. Nuclear research also goes along with the question of nuclear safety, as every country establishes its norms and procedures, although the IAEA already gives an international frame on nuclear safety.

How is Nuclear Fusion a Great Hope for the Global Energy Mix?

It is difficult to give exact figures, but nuclear fusion can release thousands or even millions of times more energy than nuclear fission.

For now, the **ITER project is only looking to produce 500MW** of electricity over short periods to prove that a power plant for commercial purposes is possible. This technology could become one of the main sources of power for humanity thanks to its fuel present in massive quantities on Earth: hydrogen.

In addition, this type of plant is not expected to emit any greenhouse gases except during its construction and refueling. Nuclear fusion, as envisaged for energy production, generates waste, but this waste differs considerably from that produced by nuclear fission. In the nuclear fusion process, the main reagents are often light hydrogen isotopes, such as deuterium and tritium. When these light isotopes undergo nuclear fusion, they mainly produce helium and neutrons. Helium is an inert, non-radioactive gas, while neutrons can interact with the reactor walls, making them slightly radioactive. These reactor walls may become radioactive waste requiring appropriate management. However, compared to nuclear fission, nuclear fusion waste is generally less radioactive and has a shorter half-life (the time it takes for half of the radioactive atoms in that fuel to disintegrate. This is a measure used to describe the radioactive stability of a material. The half-life varies depending on the type of radioactive material used as a nuclear fuel). Moreover, the amount of waste produced is lower than that generated by nuclear fission.

What is the Complexity of such Energy?

- **Extremely High Temperatures**: For fusion to occur effectively, extremely high temperatures of the order of millions of degrees Celsius are required. These conditions are necessary to overcome electrostatic repulsion between positively charged nuclei, thus allowing their fusion.

Maintaining these temperatures while avoiding the destruction of the containment of the reaction is a major challenge.

- M**agnetic or Inertial Confinement:** There are two main approaches to confine the plasma to these high temperatures: magnetic confinement and implosion laser confinement. Each of these approaches presents considerable technological and engineering challenges.
- P**lasma management:** Fusion reactions occur in a state of matter called plasma, which is an ionized gas. Managing and controlling plasma at such high temperatures is a tricky task. Disturbances in the plasma can cause the fusion process to stop or even damage the reactor.
- **The energy required to start the process**: Initiating fusion requires a significant amount of energy, and the challenge is to ensure that the amount of energy produced by fusion is much greater than that required to start it. This is often called "the purpose of ignition".
- C**ontainment materials:** The materials used to build the reactor must withstand extreme conditions including intense irradiation, high temperatures, and fast neutrons. Finding materials that can withstand these conditions for long periods without suffering excessive degradation is a major challenge.
- T**echnological development:** Nuclear fusion for energy production is still in the research and development stage. The technologies needed to implement large-scale fusion have not yet been fully developed, and this requires significant investment in research and innovation.

Key Questions

- What is my country's policy on this subject?
- In general, does my country support the use of nuclear power?
- Has my country signed international agreements on the nuclear issue?
- Is my country part of the ITER project and if so, what does it bring to the project?

Bibliography

- Very detailed presentation of nuclear fusion.
  https://en.wikipedia.org/wiki/Nuclear_fusion
- Very detailed presentation of nuclear fission.
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- Very detailed presentation and documentary focused on the ITER project. https://www.iter.org/fr/accueil
  https://www.youtube.com/watch?v=V3BafEiqSFg
- Official website of the IAEA
  https://www.iaea.org/
- Official site of the French government exposing the French nuclear policy (it is up to you to search for the specific policy of the country that has been assigned to you).
  https://www.ecologie.gouv.fr/acteurs-et-gouvernance-du-nucleaire
- Accurate information on nuclear fission reactors around the world
  https://pris.iaea.org/PRIS/home.aspx/PRIS_poster_2021.pdf A

Topic 2 : Negotiating a Reduction of Atomic Weapons Stocks and a Tightening of Possession Criteria

Since the discovery of nuclear fission by Otto Hahn, Fritz Strassmann, and Lise Meitner in 1938, the world has never been the same. Indeed, this moment is the starting point of the development of nuclear weapons but also the use of nuclear energy in civil applications. The destructive impact of these weapons was revealed on August 6 and 9, 1945 during the American bombing of Hiroshima and Nagasaki.

However, the anti-nuclear movement really came to the fore after the American Castel Bravo test in 1954. The power of this test was 3 times stronger than expected and the environmental and health impacts were terrible. Some of the atoll islands are still uninhabitable because of radioactive contamination. In addition, the rise of tensions between the West and East blocs during the Cold War nearly tipped the world into nuclear war. The Cuban missile crisis of 1962 is the best example.

The development of an international treaty on the non-proliferation of nuclear weapons quickly became necessary to relieve humanity of this threat. Thus, in 1968, the non-proliferation treaty was signed and, even today, 188 countries are signatories. Its objective is to prevent the spread of nuclear weapons around the world. This first state followed suit with other treaties such as the 1991 Start Strategic Arms Reduction Treaties between the United States and the USSR. All international efforts have reduced the number of nuclear weapons from 65,000 to 10,000 between 1962 and 2023.

However, the threat of nuclear war is still present with various conflicts raging around the globe.

We can cite the tensions between China and Taiwan between the two major nuclear powers, the United States and China. The war in Ukraine also increased this threat with **President Putin's February 2022 motion**, at the beginning of the invasion of Ukraine, of a potential use of atomic weapons in case of threat to Russia's integrity. This weapon, which is supposed to play a deterrent role, can at any time revive the horror of the bombing of Hiroshima and Nagasaki on the world. So, what can the IAEA do?

The committee obviously has no decision-making power on the arming policy of UN member states according to the principle of national sovereignty. The committee obviously has no decision-making power on the arming policy of UN member states according to the principle of national sovereignty. But it can:

- Express an opinion on the various decisions to use nuclear power militarily.
- Bring together member states to encourage them to sign nuclear non-proliferation treaties or nuclear warhead reduction treaties.

This guideline aims to guide you through the various measures already applied to address this problem, to expose the negative points but also the advantages of these weapons, and finally to offer you avenues for reflection on the solutions that can still be made to this problem.

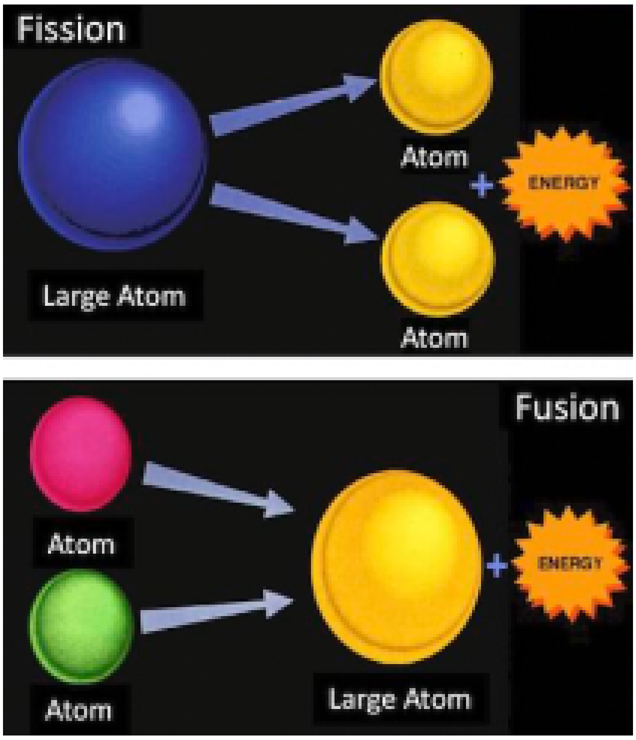
The Different Nuclear Weapons

There are in the world 2 main types of atom bombs: bomb A and bomb H. These two bombs differ mainly in their mode of operation, fuel, and power.

Mechanism and Operation

Bomb A was the first bomb developed and used by the United States. It operates using a process called nuclear fission. The core of the bomb contains uranium-235 or plutonium-239 isotopes. When the bomb is detonated, explosive charges strongly compress the fissile material, creating necessary conditions for fission. Uranium or plutonium nuclei split into two smaller parts, releasing a massive amount of energy in the form of heat, light, and radiation. The effect of nuclear fission causes a chain reaction, where each nucleus division triggers other divisions, exponentially increasing the release of energy and creating a super-powerful explosion.

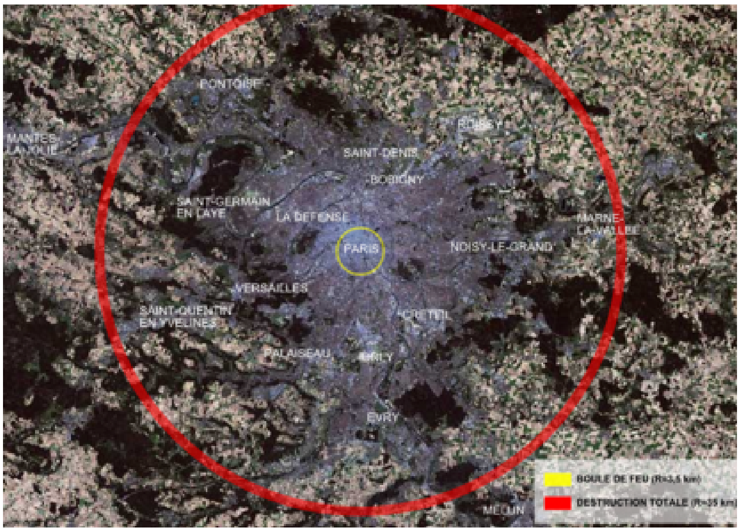
The H-bomb has a more **complex working principle in 2 stages**. The first is to trigger a nuclear fission explosion to create the ideal conditions for a nuclear fusion reaction. The goal is to recreate the same reactions as in the heart of our Sun. The heat and pressure created by the first explosion will force the hydrogen atoms to be released which releases an amount of energy thousands of times more powerful.



https://www6.lehigh.edu/~eus204/lab/PCL_fusion.php

Destruction Capacity

Nuclear bombs are so powerful that their explosions are measured in tons of TNT. Most A-bomb tests have not exceeded 100,000 tons of TNT (100 Kiloton) while most H-bombs exceed 5,000,000 tons of TNT (5 megatons). The most powerful bomb ever tested is the 50-megaton TNT Tsar Bomba, which created **a 4.6-kilometre-long fireball in its test**. For comparison, the weapon called Fat Man that exploded over Nagasaki created a 200-meter-long fireball. Obviously, the blast effect of these devices extends well beyond these distances. Here is a photographic presentation of the destruction ray if a Tsar Bomba exploded above the center of Paris:



https://fr.m.wikipedia.org/wiki/Fichier:Tsar_Bomba_Paris.png

Nuclear Weapons: the Perfect Deterrent

Nuclear deterrence is based on fear on both sides of each other's use of nuclear weapons and the doctrine of mutual vulnerability. More specifically, it consists of preventing an act of international aggression by persuading the actor concerned that the costs of such action exceed its benefits. The fact that two opponents thus deter themselves depends above all on the ability of the assaulted to retain the means of a nuclear strike against the aggressor after having undergone a first atomic strike.

A very concrete example of nuclear deterrence is that of the Cold War, where the United States and the USSR did not trigger a large-scale conflict between them given the risks of mass destruction of such a conflict. In the 1970s, alliances between the East and West blocs and technological advances that increased the range of missiles helped maintain the balance between the two great powers. Deterrence is based on the principle of retaliation: if a state launches a nuclear attack on another state, the latter must be able to launch its attack as quickly as possible. One of the big two couldn't destroy the other’s ability to respond, which guaranteed some stability. A new example of nuclear deterrence is the tensions around the Kashmir region between India and Pakistan. The two states have developed their nuclear program at about the same time which has all disincentives to launch an attack.

However, this approach should be put into perspective because the arms race in the second half of the 20th century nearly plunged the world into nuclear war several times. The two great superpowers were very close to a direct conflict during the Cuban missile crisis, culminating in tensions during the Cold War. Moreover, there is no guarantee that states possessing atomic weapons will never use them for an offensive purpose. We can quote once again the speech of Vladimir Putin **in February 2022** not excluding the use of nuclear weapons against Ukraine as part of his military intervention.

Thus, the main critics of nuclear deterrence argue that it is only a theory and that if it fails, the consequences will be terrible for humanity. Another of their arguments is to explain that the unconditional surrender of Japan in 1945 after the bombing of Hiroshima and Nagasaki is not entirely due to these bombings but rather to the threats of Russian and American landings on the national territory.

It is important to note that these weapons were used for propaganda purposes by all the states that owned them. General De Gaulle declared on September 11, 1966, after having triggered a nuclear test in French Polynesia: "We are realizing a modern power". This extract from the speech clearly shows the will of the nuclear powers to give the atomic weapon an image of divine power.

The Immense Economic, Human, and Environmental Cost of Nuclear Military Research

Economic Costs

As we can expect, the economic cost of a nuclear program is very high. The Manhattan Project, which developed the first atomic bombs in history in the United States, cost the US government $2 billion, which corresponds to the current $33 billion.

Obviously, the maintenance of a nuclear arsenal also has a significant cost which was **$83 billion in 2022 for the 9 countries and the weapons**. In comparison, in 2015, the UN estimated the cost of ending famine worldwide by 2030 at $267 billion. With 4 to 5 years of this funding to maintain the atomic arsenals we could eradicate hunger in the world which leaves a great reflection on the legitimacy of the policies of nuclear deterrence of the states.

Human and Environmental Costs

Of course, the bombing of Japan in 1945 killed about 200,000 people with only two bombs. But the human costs go beyond these bombings and appear during the nuclear tests.

It is difficult to establish a precise number of victims affected by nuclear tests, but we can mention the civilians and military affected by the radioactive fallout of these tests. For example, the radioactive fallout from the first French nuclear test on **13 February 1960** affected the Spanish, Moroccan, Nigerien, and Algerian populations.

Another example is that some of the islands around the test site of **Operation Castle in 1954** became uninhabitable due to radioactive contamination of water, food, wildlife, and flora. Their population had to be evacuated and even today, some of these islands are still uninhabitable. Cancers, birth defects, and mental health problems are human tragedies because of these activities. This tragedy is the result of a bomb design error. Indeed, US army scientists had estimated the power of the bomb at 5 megatons, but it turned out to be 3 times more powerful than expected. This explains the catastrophic health and environmental damage suffered by spectators, locals, and the region. To top it all off, the crew of a Japanese fishing vessel named **"Lucky Dragon 5"** was severely contaminated by the radioactive fallout from this test. Japanese public opinion was particularly affected by this event because Japan is still the only country to have suffered a nuclear attack.

These islands and all other atomic test sites in the world have suffered one or more explosions ravaging the surrounding environment. Sites such as the Semipalatinsk Polygon in Kazakhstan and the Pacific Test Site have experienced widespread radioactive contamination, affecting local ecosystems and biodiversity. Coral reefs have been severely damaged, and marine species have been exposed to dangerous levels of radioactivity. Moreover, the dispersion of radioactive particles in the atmosphere has had global consequences, contributing to radioactive pollution on a global scale.

We can still observe today the huge crater formed by the fireball of the bomb of Operation Castle on the atoll of Bikini.

Cratère de Bikini — *Le polygone nucléaire de Semipalatinsk*

https://ostfront.forumpro.fr/t4125-castle-bravo-1954 and https://fr.m.wikipedia.org/wiki/Fichier:Crater_-_Flickr_-_The_Official_CTBTO_Photostream.jpg

Mistakes Happen and Risk 0 Doesn't Exist:

You probably don't know this, but some countries like the United States have already suffered a major nuclear disaster because of accidents or human errors related to nuclear weapons. This link will take you to a video (in French exceptionally) that will explain in detail the moments when humanity passed by accident:

https://www.youtube.com/watch?v=4TuraVb0rtM

The Progressive Global Awareness of the Dangers of these Weapons and the International Measures Established.

As we have already seen, the anti-nuclear movement really developed after the uncontrolled American nuclear test of Operation Castle in 1954 and especially after the Cuban missile crisis in 1962. The violence and inhumanity of these weapons ended up horrifying much of the world's public opinion.

This section will present the chronology of international treaties that came into force to limit the proliferation and stockpiling of atomic weapons:

- **August 5, 1963:** Moscow Treaty prohibiting testing in the atmosphere, outer space, and underwater - underground testing is not limited. It is signed by the first three nuclear powers.
- **January 27, 1967:** Signing of the Treaty on Outer Space, which prohibits placing nuclear weapons or weapons of mass destruction in outer space.
- **February 14, 1967:** Signing of the Treaty of Tlatelolco (Treaty on the Prohibition of Nuclear Weapons in Latin America). It is the first international instrument to establish a nuclear-weapon-free zone in a densely populated part of the world.
- **July 1, 1968:** NPT signed in London, Moscow and Washington. It is based on three pillars: non-proliferation, disarmament, and the peaceful use of nuclear energy. It prohibits the five nuclear-weapon states that detonated a nuclear device before January 1, 1967—the United States, the USSR, the United Kingdom, China, and France—from delivering material or information to other, non-nuclear-weapon states. The latter agree not to manufacture nuclear weapons and not to try to obtain them. The International Atomic Energy Agency (IAEA) verifies that States that are signatories to the treaty are living up to their commitments.
- **February 11, 1971:** Signing of the Treaty on the Seabed, which prohibits the implantation and placing of nuclear weapons or other weapons of mass destruction on the seabed and in their subsoil.
- **1971:** Creation of the Zangger Committee whose objective is to ensure that nuclear technologies exported to non-nuclear weapon states that have not joined the NPT are not diverted for military purposes.

In 1974, this committee will also apply to the countries that signed the NPT.

- **May 26, 1972:** Two treaties are signed between the United States and the USSR.

The ABM Treaty, concluded for an unlimited period, restricted to two sites (then one from 1974) the deployment of antimissile systems in each country.

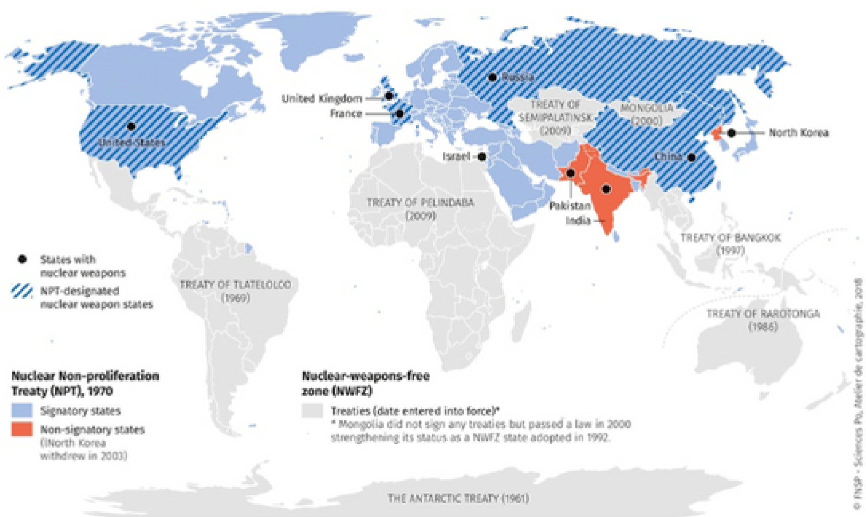
The SALT I agreement, valid for five years, on the limitation of strategic offensive weapons which freeze the arsenals at their level at the time. The Soviets get a quantitative advantage because they do not have the technology of «mirvage» (equip a missile with several nuclear or conventional warheads that each follow its trajectory when they enter the atmosphere).

- **September 21, 1977:** 15 countries supplying nuclear technology meet in the London Club» and adopted in 1978 the London Directives which provide for a list of nuclear materials and equipment, they can only be exported to countries that agree to subject them to IAEA control.
- **August 6, 1985:** Signing of the Rarotonga Treaty, which creates a nuclear weapons. Free zone in the South Pacific. This treaty entered into force in December 1986. Since 1996, France has been a party to the relevant protocols of this treaty.
- **December 8, 1987:** Washington Treaty between the United States and the USSR which provides for the elimination of the FNI (or «Euromissiles»).
- **31 July 1991:** Signature in Moscow of the START I treaty and limits the arsenals of the United States and the USSR to 1600 vectors and 6000 nuclear warheads.

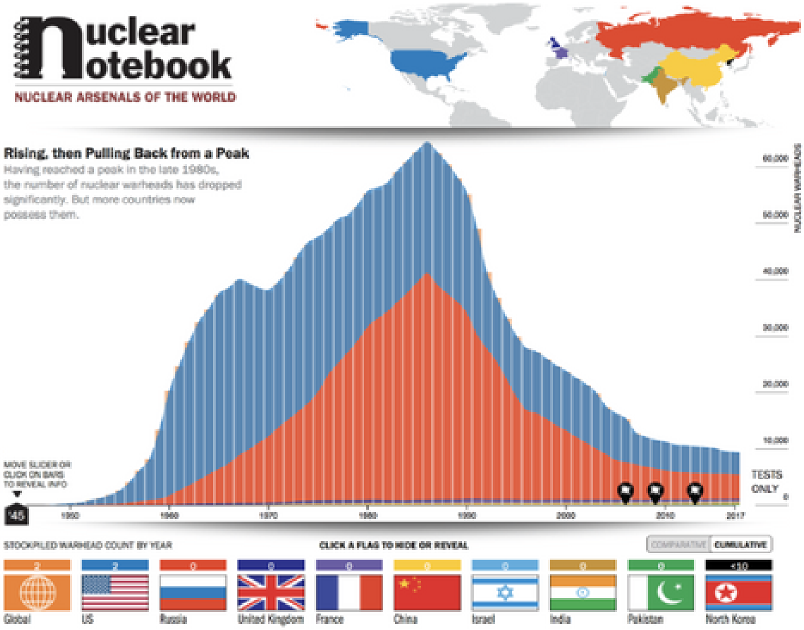
- **December 15, 1995:** Signature of the Bangkok Treaty which creates a nuclear weapons-free zone in Southeast Asia.
- **11 April 1996:** Signature of the Pelindaba Treaty, which creates a nuclear-weapon-free zone in Africa. France ratified this Treaty in 1996.
- **27 June 2002:** At the Kananaskis Summit, G8 leaders launch the Global Partnership Against WMD Proliferation in CIS States. In this context, the G8 countries have pledged up to $20 billion to promote non-proliferation, disarmament, counterterrorism, and nuclear safety in the years 2002-2012; It is currently the main major non-proliferation program. All these dates allow you to understand the complexity and importance of international treaties around nuclear weapons. Thanks to them we now live in a world that is much safer but still needs to evolve to achieve even greater security.

Where Are we Today in Terms of the Nuclear Threat?

Today, the various treaties we have just seen are still mostly in force, which largely ensures that humanity does not suffer the consequences of a large-scale atomic conflict. In addition, warhead stocks have never been lower since the early 1960s.



https://espace-mondial-atlas.sciencespo.fr/fr/rubrique-(in)securites/carte-4C26-proliferation-et-desarmement-nucleaire-2018andnbsp.html



https://thebulletin.org/2015/01/counting-nuclear-warheads-in-the-public-interest/

An Ever-present Threat

We simply recall what we mentioned earlier about the risk of Russia using nuclear weapons in its intervention in Ukraine. **Since 27 February 2022, Russian nuclear weapons have been put on alert**.

Moreover, tensions still exist in the world around areas disputed by countries possessing nuclear weapons. For example, Israel, which has the weapon unofficially, is plunged into a violent war in the Gaza Strip. There are also tensions between China and the United States over the sovereignty of the island of Taiwan. We can also recall the tensions around the Kashmir region between Pakistan and India which both conducted nuclear tests until 1998.

However, the biggest threat to global nuclear security right now is North Korea. Its nuclear development began in the 1980s and culminated in a first test in 2006, an unconfirmed test of an H-bomb in 2016, and its most recent test in 2018.

The threatening character of the Kim Jong Un dictatorship is based not only on the development of this atomic program but also on the development of its missiles with a very wide range. Through launches such as the two missiles of **23 July 2023** to the Sea of Japan, the international community notes that North Korea is gradually increasing the range of these weapons and is even able to reach certain American bases in the Pacific today. By analyzing some recent weapons presentations like the Hwasong-17 missile unveiled in October 2020, North Korea could potentially launch a nuclear attack on the west coast of the United States.

https://fr.wikipedia.org/wiki/Crise_des_missiles_nord-coréens_de_2013

Thus, the efforts of the IAEA committee must not slow down to continue to guarantee strong security to humanity against the threat of atomic war.

Key Questions

- Is my country a signatory of the NPT?
- Is my country a nuclear power?
- Which disarmament agreement has my country signed?
- What is my country's point of view on the efficiency of nuclear disarmament policies?
- How is your country providing nuclear resources?
- Has my country ever suffered the adverse consequences of a nuclear test or accident?
- Has my country ever tried to or is tempted to develop a nuclear weapons program?

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