International Energy Agency (IEA)

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International Energy Agency (IEA) Background Guide

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The International Energy Agency (IEA) is an international body dedicated to ensuring secure, affordable, and sustainable energy systems by providing authoritative analysis, data, policy recommendations, and real-world solutions to countries. In 1974, the IEA was established to develop a cohesive international response to major disruptions in the supply of oil. The organization expanded its responsibilities in 2015, while still focusing on oil security. In addition to oil security, the IEA's mission includes addressing climate change and decarbonization, energy access and efficiency, and investment and innovation.[1]

The member and association countries of the IEA collectively account for over 80% of global energy consumption, doubling where it was in 2015. Association countries are unique to the IEA, and it was created to include emerging and developing economies. Association countries, such as Brazil, Argentina, and China, can participate and collaborate in IEA meetings and initiatives, but unlike full member countries, they do not have voting rights and are not bound by collective oil stockholding requirements.[2] The organization now has the commitment and membership necessary to enact global collective change in the energy industry. Working with a total of 45 countries in membership and association, the IEA has collected and analyzed energy data from more than 180 countries through its Energy Data Center. Along with data collection and analysis, the IEA is instrumental in taking collective action in response to fluctuations and instability in the global oil market. Despite the IEA's efficacy in these areas, the agency still faces challenges such as global warming, the disparity in hydrocarbon reserves among countries, and the

[1] IEA. "History of the IEA." International Energy Agency, 2026. https://www.iea.org/about/mission/history-of-the-iea.

[2] Hart, David. "Will the International Energy Agency Keep Boosting Clean Energy?" Council on Foreign Relations, March 24, 2025. https://www.cfr.org/articles/will-international-energy-agency-keep-boosting-clean-energy.

controversial issue of peak oil.[3] It is this committee's responsibility to navigate short-term and long-term solutions to augment stability and security of the oil market during conflicts.

I. Managing the Oil Market During Conflict

Statement of the Issue:

Since 1973, between 25% and 50% of all interstate wars have been related to oil. A leading cause of war, oil has historically sparked conflict, creating insecurity and instability. Oil drives conflict in many ways from resource disputes over oil reserves to the externalization of civil wars through petrostates. Petrostates, or states in which oil contributes at least 10% of national income, are 56% more likely to get involved in wars, and they are 94% more likely to initiate wars.[4] The "resource curse" is a collection of political and economic problems common in petrostates that explain the greater likelihood of aggression; these problems include authoritarianism, feeble economic growth, and frequent civil wars. The domestic politics of petrostates enable aggression because oil income can be used by a leader to buy political support. One reason why non-petrostates tend to avoid international conflict is a leader's fear of removal from office, but in petrostates, leaders backed by oil income do not face the same disincentive.[5] Both interstate and civil wars have a profound impact on the oil market and consequently the global economy. During war, particularly when in proximity to oil trade routes, oil prices rise dramatically due to a shorter supply of oil caused by the inability to import and export crude oil.

The IEA is responsible for stabilizing the oil market and greater global economy by increasing the supply or mitigating the effects of a shortage of oil supply. Through collective action, the IEA uses methods such as oil stock releases, demand restraint measures, or fuel switching to bring the oil market back to normalcy. However, these are short-term solutions that may only be effective in immediately countering shortages in oil supply, but they are not preventative of any long-term effects that conflicts may have on the oil market.

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[3] Van de Graaf, Thijs. "Obsolete or Resurgent? The International Energy Agency in a Changing Global Landscape." *Energy Policy* 48 (2012): 233–41. https://doi.org/10.1016/j.enpol.2012.05.012.

[4] Levi, Michael. "Why Are Oil Producing States Prone To War?" Council on Foreign Relations, February 7, 2011. https://www.cfr.org/articles/why-are-oil-producing-states-prone-war.

[5] Prebble, Maria. "Petro-Aggression: When Oil Causes War." New Security Beat, April 25, 2013. https://www.newsecuritybeat.org/2013/04/petro-aggression-oil-war/.

History:

The IEA was originally established in response to the 1973-1974 oil crisis caused by the Arab oil embargo; the embargo pushed prices to historic levels and revealed the dependency countries have on oil imports. Since its origin, the IEA has maintained the collective oil emergency response system mechanism, which regulates and stabilizes the oil markets and global economy during conflict as a collective body.

In 1991, during the First Gulf War, the IEA took its first collective action. Iraq invaded Kuwait largely for economic reasons related to oil supply. Since the 1990s, oil has accounted for over 90% of Iraq's export revenues and consistently over 40% of Iraq's GDP since the invasion.[6] The triggering event for Iraq's invasion of Kuwait was Kuwait's oil production exceeding the output quota set by the Organization of the Petroleum Exporting Countries (OPEC); exceeding the quota allowed Kuwait to set oil prices lower, harming Iraq's oil industry. Iraq benefited from setting higher prices in the short run to accommodate a larger population and to pay off war debts while at war with Iran—a war which was especially draining on Iraq's economy. Additionally, Iraq accused Kuwait of slant drilling, which is drilling at a slanted angle to reach underground contents that cannot be otherwise reached from directly above, into the Rumaila field on the shared border between the two countries.[7] Sparked by Iraq's invasion, oil prices rose by 90% between August and October. The IEA, hesitant to intervene at first, finally acted in January of 1991, addressing the dramatic escalation in oil prices with a contingency plan of releasing two-million barrels of oil per day while saving half a million barrels per day to maintain oil supply. Techniques such as demand restraint—restrictions to ration fuel—and fuel-switching—-substituting natural gas for oil—were used to ration oil.[8]

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[6] World Bank Group. "Oil Rents (% of GDP) – Iraq." World Bank Group Data. Accessed June 3, 2026. https://data.worldbank.org/indicator/NY.GDP.PETR.RT.ZS?locations=IQ.

[7] Aarts, Paul and Michael Renner. "Oil and the Gulf War." MERIP, July 11, 1991. https://www.merip.org/1991/07/oil-and-the-gulf-war/.

[8] IEA. "Response to the Oil Supply Disruption Caused by the Persian Gulf Crisis." US General Accounting Office. Accessed June 3, 2026. https://www.gao.gov/assets/nsiad-92-93.pdf.

The second time the IEA took collective action was in 2005, after Hurricanes Katrina and Rita damaged oil infrastructure in the Gulf of Mexico. Instead of an interstate conflict like the Gulf War, the hurricanes were the cause of oil supply disruption, preventing oil and gas production. During Hurricane Rita, 100% of daily oil production and 80% of daily gas production in the Gulf of Mexico was suspended or intentionally capped below the possible output.[9] In response, IEA member countries agreed to make sixty million barrels of crude and refined oil available to global markets largely through the use of stock and increased indigenous production.[10]

In 2011, the IEA acted collectively in response to the oil supply crisis during the Libyan Crisis. During the First Libyan Civil War, Libya's monthly crude oil production fell from roughly 1.7 million barrels per day to zero between 2011 and 2012.[11] To address the sudden lack of Libyan crude oil production, like their action in 2005, the IEA again released sixty million barrels of crude and refined oil over thirty days.[12] More recently, the IEA took collective action twice after the Russian invasion of Ukraine in February of 2022. Initially, IEA member states agreed to release 62.7 million barrels of emergency oil stocks, and one month later, the IEA extended this to an additional 120 million barrels from emergency reserves.[13]

The sixth and final time the IEA took collective action was in March 2026 in response to the closing of the Strait of Hormuz after the United States and Israel waged strikes on Iran. Resorting to more drastic measures than in the five previous collection actions, the IEA agreed in March to release a record 400 million barrels of oil from strategic stockpiles. The extent to which the US-Israeli war on Iran disrupted the oil market is evident in these 400 million barrels making up for only twenty days of global oil production.[14] This conflict is much more damaging to the

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[9] Norton, Gale. "Hurricane Recovery Efforts Related to Energy and Energy Policy." US Department of the Interior, October 27, 2005. https://www.doi.gov/ocl/hurricane-recoveryefforts#:~:text=At%20Rita's%20peak%20on%20September,of%20natural%20gas%20per%20day.

[10] IEA. "Conclusion of IEA Collective Action." International Energy Agency, December 25, 2005. https://www.iea.org/news/conclusion-of-iea-collective-action.

[11] EIA. "Conflict in Libya Since 2011 Civil War Has Resulted in Inconsistent Crude Oil Production." US Energy Information Administration, August 12, 2022. https://www.eia.gov/todayinenergy/detail.php?id=53419.

[12] "IEA Flags an End to Libya Crisis." Argus Media, September 15, 2011. https://www.argusmedia.com/en/news-and-insights/latest-market-news/766674-iea-flags-an-end-to-libya-crisis.

[13] IEA. "Russia's War on Ukraine: Analyzing the impacts on energy markets and energy security." International Energy Agency. Accessed June 3, 2026. https://www.iea.org/topics/russias-war-on-ukraine.

[14] Hernandez, America and Alex Lawler. "IEA Announces Record Oil Stockpile Release Over Iran War Supply Disruptions." Reuters, March 10, 2026. https://www.reuters.com/business/energy/iea-proposes-largest-ever-oil-release-strategic-reserves-wsj-reports-2026-03-11/.

oil market because of its direct implication of the Strait of Hormuz. Starting in early March 2026, the number of daily ship transits through the Strait dropped by 95%, with an average of six daily ship transits throughout the whole month.[15] Attacks on ships carried out by Iranian forces have deterred passage through the Strait, and Iran's Islamic Revolutionary Guard Corps (IRGC) has further blocked the Strait of Hormuz by instituting a "toll booth" requiring vessels to pay fees, submit documentation, and be escorted by the IRGC.[16]

Before the closing of the Strait of Hormuz and the war in Iran, an average of twenty million barrels of oil passed through the Strait of Hormuz each day, accounting for a quarter of the world's seaborne oil. Specifically, a total of 34% of global crude oil trade passed through the Strait of Hormuz in 2025. In addition to oil, 93% of Qatar's and 96% of the United Arab Emirate's liquefied natural gas (LNG) is exported through the strait, making up 19% of global LNG trade.[17] As of July 2026, traffic disruptions and attacks on ships continue to persist; while the Strait of Hormuz remains open for commercial transit, traffic is well below pre-conflict levels due to ongoing US and Iranian military engagements.

While the IEA addressed the oil supply disruptions caused by the natural crises of Hurricanes Katrina and Rita, the other five times the IEA engaged in collective action were in response to wars. Any global conflict poses a risk to the oil market, but when oil trade routes are directly affected by the conflict, such as the Strait of Hormuz in the war on Iran, the consequences are much more alarming, requiring a proportionate response.

Analysis:

Not only do geopolitical conflicts spark disruptions in the oil market, but oil itself drives and instigates conflicts in a vicious cycle. Oil is a leading cause of war, becoming increasingly more linked with international conflicts. There are eight main ways oil can fuel global conflicts:

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[15] UNCTAD. "Strait of Hormuz Disruptions: Growth and Financial Implications." UN Conference on Trade and Development. Accessed June 3, 2026. https://unctad.org/publication/strait-hormuz-disruptions-growth-and-financial-implications.

[16] Meade, Richard, Tomer Raanan, and Bridget Diakun. "Tehran's 'Toll Booth' System is Now Controlling Hormuz Traffic." Lloyd's List, March 25, 2026. https://www.lloydslist.com/LL1156720/Tehrans-toll-booth-system-is-now-controlling-Hormuz-traffic.

[17] IEA. "Strait of Hormuz: Factsheet." International Energy Agency. Accessed June 3, 2026. https://www.iea.org/about/oil-security-and-emergency-response/strait-of-hormuz.

1) resource wars, whereby states use force to acquire oil reserves; 2) petro-aggression, which is characterized by oil incentivizing leaders to take aggressive political or military action; 3) the externalization of civil wars in petrostates; 4) financing for insurgencies and/or terrorist organizations; 5) conflicts triggered by the prospect of oil-market domination; 6) conflict over control of oil transit routes; 7) oil-related grievances, whereby the presence of foreign workers in petrostates can validate and empower extremist groups; and 8) oil-related obstacles to multilateral cooperation. As much as oil can deter conflict by increasing the risk of aggressive action in foreign policy, oil is an instigator, being the source of the very conflicts that destabilize the oil market itself.[18]

The IEA can regulate and stabilize the oil markets and the global economy with both short-term and long-term actions. In the six cases of emergency collective action, the IEA used immediate short-term measures, of which there are namely five. The most common collective action measure taken by the IEA is oil stock release. IEA member states are required to hold oil stocks equivalent to at least ninety days of net oil imports in case of a sudden shortage of oil supply, so these withheld oil stocks can be supplied to the global market to compensate for the sudden loss. Another method of stabilizing the oil market, often used in conjunction with oil stock release, is demand restraint measures; this includes public information campaigns to promote voluntary actions, driving restrictions, and fuel rationing, which most commonly targets road transportation. Additionally, the IEA may engage in fuel-switching to substitute natural gas for oil. However, this may not be appropriate for crises that impact natural gas production and trade as much as that of oil; for example, natural gas and oil are both exported through the Strait of Hormuz, so fuel-switching would not be effective to counter the war in Iran. The final two methods the IEA uses to address the instability of the oil market in the short term are less common because they are often less effective. These include temporarily relaxing fuel specifications, such as environmental or quality standards, which can increase the flexibility of oil supply in times of conflict, and the method of surge production, which is used to rapidly activate spare crude oil to increase the oil supply.

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[18] Colgan, Jeff. "Oil, Conflict, and US National Interests." *International Security*, October 2013. https://www.belfercenter.org/publication/oil-conflict-and-us-national-interests.

While these five measures of collective action are useful in responding to conflict-driven disruptions in the oil market, these methods are immediate and only appropriate for regulating the oil market in the short term. Conversely, the IEA can prevent the large impact conflicts have on the oil market by using three methods to navigate price intervention or long-term supply management: oil import reduction, energy supply diversification, and the development of alternative energy technologies. These measures strengthen the stability and security of the oil market, making it less fragile during conflict.[19] Apart from research, the IEA has not used these long-term methods to stabilize the oil market, and it is this committee's prerogative to explore the efficacy of long-term versus short-term methods to render the oil market more secure and independent.

Conclusion:

The IEA has been effective in regulating the oil market during conflicts with the use of emergency collective responses—methods better suited for short-term management of oil supply. However, long-term measures such as oil import reduction, energy supply diversification, and the development of alternative energy technologies may be more preventative in strengthening the security and reliability of the oil market.

Geopolitical conflicts, from the Gulf War that prompted the creation of the IEA to the ongoing war in Iran, generate spikes in oil prices all over the world due to a sudden shortage in oil supply. Inextricably tied to the global market, disruption in the oil market elevates prices globally, particularly impacting citizens through rising gas prices. An unstable oil market has a profound effect on the quality of life for people all around the world, and it is the IEA's responsibility to regulate the oil market during conflicts and prepare the market for future conflicts.

Questions to Consider:

[19] IEA. "Oil Security and Emergency Response: Ensuring Quick ad Effective Response to Major Supply Disruptions." International Energy Agency. Accessed June 3, 2026. https://www.iea.org/about/oil-security-and-emergency-response.

1. How can the IEA use more measures suited for long-term price intervention and oil supply management to proactively address the risks geopolitical conflicts pose to the oil market? What reasons have led this committee to opt for short-term price intervention over long-term methods in the past?
2. How can the IEA attract more member states to increase efficacy and power in emergency collective response actions?
3. What other methods can the IEA develop and institute immediately to address disruption in the oil market during conflicts?

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IEA. “Strait of Hormuz: Factsheet.” International Energy Agency. Accessed June 3, 2026. https://www.iea.org/about/oil-security-and-emergency-response/strait-of-hormuz.

Levi, Michael. "Why Are Oil Producing States Prone To War?" Council on Foreign Relations, February 7, 2011. https://www.cfr.org/articles/why-are-oil-producing-states-prone-war.

Meade, Richard, Tomer Raanan, and Bridget Diakun. "Tehran's 'Toll Booth' System is Now Controlling Hormuz Traffic." Lloyd's List, March 25, 2026. https://www.lloydslist.com/LL1156720/Tehrans-toll-booth-system-is-now-controlling-Hormuz-traffic.

Norton, Gale. "Hurricane Recovery Efforts Related to Energy and Energy Policy." US Department of the Interior, October 27, 2005. https://www.doi.gov/ocl/hurricane-recoveryefforts#:~:text=At%20Rita's%20peak%20on%20September,of%20natural%20gas%20per%20day.

Prebble, Maria. "Petro-Aggression: When Oil Causes War." New Security Beat, April 25, 2013. https://www.newsecuritybeat.org/2013/04/petro-aggression-oil-war/.

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Van de Graaf, Thijs. "Obsolete or Resurgent? The International Energy Agency in a Changing Global Landscape." *Energy Policy* 48 (2012): 233–41. https://doi.org/10.1016/j.enpol.2012.05.012.

World Bank Group. "Oil Rents (% of GDP) – Iraq." World Bank Group Data. Accessed June 3, 2026. https://data.worldbank.org/indicator/NY.GDP.PETR.RT.ZS?locations=IQ.

II. Transitioning to Nuclear Energy

Statement of the Issue:

To prevent the ongoing climate crisis, the IEA has declared it necessary to reach net zero emissions of greenhouse gases by 2050. Global warming, which is caused by greenhouse gas emissions from fossil fuels, has destroyed ecosystems, hindered agriculture, and driven more intense and frequent natural disasters. An imminent threat, global warming and its risks can only be countered by reaching net zero greenhouse emissions which, according to the IEA, would most efficiently be achieved with nuclear energy. While wind and solar energy systems have led the effort to replace fossil fuels, the only two forms of clean energy that can provide the power necessary to keep electricity flowing while turning away from fossils fuels are hydropower and nuclear power; hydropower is the largest source of low emissions power with nuclear energy close behind.[20] However, only nuclear energy is stable enough to support power grids during transitions.

Nuclear energy, regarded as the second safest source of energy and the one with the lowest carbon footprint, is a stable and effective way to transition from fossil fuels. The IEA is a driving force of international collaboration around nuclear energy, aiming to accelerate commercialization for new nuclear technologies while increasing their affordability. Through coordination and regulation of new designs, the international community can standardize nuclear energy production, rendering it safer and more cost-effective. As climate change endangers the planet increasingly each year, the need to transition from fossil fuels to nuclear energy has become more urgent. It is the duty of this committee to lead the transition to nuclear energy by incentivizing member states and developing ways to make nuclear energy more cost-effective.

History:

Scientific study and exploration of atomic radiation and nuclear fission developed during the first half of the twentieth century, particularly during World War II when research was

[20] Laffan, Katy. "International Day of Clean Energy: Why Nuclear Power?" International Atomic Energy Agency, January 25, 2024. https://www.iaea.org/newscenter/news/international-day-of-clean-energy-why-nuclear-power.

focused on the atomic bomb. In 1941, the MAUD Committee, a British scientific working group, released two summary reports: one about the use of uranium for a bomb and the other about the use of uranium for power and energy. Subsequently, the application of nuclear fission to the creation of the atomic bomb was prioritized until the end of the war. From 1945 on, research focused on how to harness nuclear energy to power electricity, and the development of nuclear power plants has been the priority.

During the Cold War, while weapons development remained at the forefront, scientific research was also pooled toward harnessing atomic power for making steam and electricity. In 1951, the first nuclear reactor to produce electricity was created in Idaho. Two years later, US President Dwight D. Eisenhower introduced his Atoms for Peace Program, which aimed to redirect research toward atomic change for the purpose of energy instead of warfare. When the United States reoriented atomic research toward nuclear energy production, the Soviet Union followed suit. In the late 1950s, the atomic research targeted at clean energy intersected with weapons development when the first pressurized water reactor (PWR) was used for nuclear-powered submarines, which both the United States and Soviet Union launched in 1959. In contrast to the PWR system, boiling water reactors (BWRs) also became an option, but PWR remains the more popular option, accounting for 69% of the world's nuclear capacity. During the 1950s and 1960s, countries including France and Kazakhstan were rapidly commissioning nuclear power programs, but the nuclear power industry stagnated in the 1980s with the cancelling of many reactor orders. Nuclear reactors were widely canceled because of high construction costs, reduced electricity demand, and public opposition after the 1986 Chernobyl disaster.[21] Nuclear energy was revived at the turn of the century by the global realizations of the projected electricity demand to come, the importance of energy security, and the need to limit carbon emissions; demand for nuclear power grew with urgency as the international community learned about the capabilities and efficacy of nuclear energy.[22]

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[21] "Nuclear Power Phase-Out." Wikipedia. Accessed July 23, 2026. https://en.wikipedia.org/wiki/Nuclear_power_phase-out.

[22] "Outline History of Nuclear Energy." World Nuclear Association, March 15, 2026. https://world-nuclear.org/information-library/current-and-future-generation/outline-history-of-nuclear-energy.

As mentioned before, the two most common reactors are PWRs and BWRs. Both types are light water reactors (LWR) which means they use ordinary water to cool and heat the nuclear fuel. Pressurized water reactors (PWRs) operate first with nuclear fission producing heat inside the reactor, which heats water to extremely high temperatures; however, the water does not boil because it is under pressure. Thus, the water must pass through a series of tubes inside the steam generator, which turns the heat, but not the water, into steam. The steam then pushes turbines, which in turn create energy when connected to an electrical generator. After turning the turbines, the steam is cooled by passing through a third water system, and once condensed into water, it is used again in the same cycle. Boiling water reactors (BWRs) differ from PWRs because the heat from nuclear fission makes the water boil, hence the name of the process. The steam from the boiling water then passes through a separation process that removes the water droplets before the steam can directly turn the turbines, which again power the electricity generator. Like PWRs, the steam condenses back into water through a condenser system and is recycled back into the reactor. Although ordinary water is predominantly used to power nuclear reactors, recent research has been investigating the use of liquid metals, molten salts, or gases as a coolant instead, which could offer more efficient nuclear power; this has yet to be regularly implemented in reactors.[23]

Currently, there are nuclear power reactors operating in over thirty countries. However, the United States, France, China, Russia, and South Korea collectively account for 71% of the world's nuclear generation capacity.[24] Although the IEA cannot finance or directly regulate the construction of nuclear power reactors, it can use research to develop policies surrounding sustainable energy usage. For instance, the IEA's Net Zero Emissions by 2050 Scenario (NZE) recommends energy policies to attain net zero emissions. The NZE Scenario provides guidelines for achieving this goal within these four central pillars: clean energy electrification, energy efficiency, low-emissions fuels, and methane abatement.[25] The IEA is unable to directly

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[23] "Pressurized Water Reactors (PWR) and Boiling Water Reactors (BWR)." Duke Energy, March 27, 2012. https://nuclear.duke-energy.com/2012/03/27/pressurized-water-reactors-pwr-and-boiling-water-reactors-bwr.

[24] EIA. "Five Countries Account for 71% of the World's Nuclear Generation Capacity." US Energy Information Administration, August 11, 2025. https://www.eia.gov/todayinenergy/detail.php?id=65904.

[25] IEA. "Net Zero Emissions by 2050." International Energy Agency. Accessed June 10, 2026. https://www.iea.org/reports/world-energy-outlook-2025/net-zero-emissions-by-2050.

subsidize and regulate transitions to nuclear energy, but it can use soft power by creating norms and advocating for nuclear energy.

Analysis:

The IEA's support for nuclear energy is largely based on its environmental benefits as a clean and sustainable energy option. Nuclear energy protects air quality; generating power and heat released from fission as opposed to fossil fuels, nuclear is a zero-emission clean energy source. In 2020, the United States' use of nuclear energy made up for 471 million metric tons of carbon dioxide, which was roughly 10% of total US carbon emissions. Nuclear energy can safely replace nonrenewable energy sources to mitigate carbon emissions and already provides around a quarter of the world's low-carbon electricity. While wind and solar are expected to lead the effort to replace fossil fuels, IEA experts find that electricity grids need more stable power to keep electricity going non-stop, which cannot be fueled by renewables alone. Another low-carbon energy source is hydropower, but it can only provide electricity grid stability in specific environments such as mountainous terrains or deep canyons. This is because hydropower systems rely on excess wind/solar energy in mountainous regions to pump water uphill or massive reservoirs in rivers and canyons to store seasonal water flow. Therefore, nuclear energy, which is not dependent on geographical environment, is necessary to maintain the stable flow of energy in electricity grids. Nuclear energy is also environmentally advantageous because of its comparatively small land footprint. A 1,000-megawatt nuclear facility typically needs only one square mile of land to operate while wind farms need 360 times more land area to produce the same amount of power, and solar photovoltaic plants require 75 times more land than a nuclear facility. The final way nuclear energy acts as a clean and sustainable energy source is its production of minimal waste. Nuclear fuel has an extremely high energy density, with one uranium pellet equating 17,000 cubic ft. of natural gas and 120 gallons of oil. Additionally, waste from producing nuclear energy can generally be reprocessed and recycled, which can extract 25-30% more energy.[26]

[26] Office of Nuclear Energy. "3 Reasons Why Nuclear is Clean and Sustainable." US Department of Energy, March 31, 2021. https://www.eia.gov/todayinenergy/detail.php?id=65904.

Alongside the environmental benefits, nuclear energy is advantageous for many other reasons, including the creation of jobs and stability in production costs. Globally, the nuclear energy industry directly employs around 250,000 workers, but including the entire supply chain and indirect employment, the industry provides millions more jobs. In addition to generating jobs, nuclear energy produces reliable electricity and can run nonstop for around two years at a time.[27] Nuclear is stable in production and in costs. While upfront fixed construction costs of reactors may be high, nuclear power has the highest capacity factor of an energy source, running at maximum output over 92% of the time. This means that nuclear power plants require less maintenance and can operate for longer periods of time (typically every two years) without refueling.[28] Nuclear electricity production costs are significantly less sensitive to changes in fuel prices than electricity from oil and gas; this can be attributed to the greater and wider range of supply of nuclear energy considering uranium is available from a range of diverse producer companies and is energy dense, requiring lower volumes. This means that while gas and oil prices may fluctuate greatly during times of conflict, the price of nuclear energy is more stable.

Despite the benefits, there are still some challenges and risks to transitioning to nuclear energy, including health threats and waste caused by radiation. Nuclear energy comes from mining the toxic, radioactive element uranium, and the mining process can emit naturally occurring radon into the air, exposing miners to the risk of lung cancer.[29] Uranium mining and its waste can also contaminate drinking water in nearby communities. A 2011 investigation conducted in the United States concluded that radioactive material has leaked from at least 48 out of 65 reactor sites studied. Another study found that communities near nuclear power plants and mines generally have higher percentages of people of color, meaning that marginalized communities typically bear the brunt of these health risks. For example, Church Rock, a 1979 spill at a uranium mill in New Mexico, United States, exposed local Navajo communities to

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[27] NEI. "What Is Nuclear Energy?" Nuclear Energy Institute. Accessed June 10, 2026. https://www.nei.org/fundamentals/what-is-nuclear-energy.

[28] Office of Nuclear Energy. "Nuclear Power is the Most Reliable Energy Source and It's Not Even Close." US Department of Energy, March 24, 2021. https://www.energy.gov/ne/articles/nuclear-power-most-reliable-energy-source-and-its-not-even-close.

[29] EPA. "Radioactive Waste From Uranium Mining and Milling." Environmental Protection Agency. Accessed June 18, 2026. https://www.epa.gov/radtown/radioactive-waste-uranium-mining-and-milling.

cancer and cardiovascular diseases, and contaminated their drinking water by releasing millions of gallons of radioactive wastewater and 1,100 tons of uranium waste.

Large-scale accidents at nuclear power plants can also expose locals to cancer risk. In 1986, one of the most famous nuclear power plant disasters took place at Chernobyl in Ukraine. Because of a sudden surge of power and consequent fire that destroyed Unit 4 of the Chernobyl nuclear power station, approximately six hundred workers at the power plants suffered from radiation sickness; hundreds of thousands of people involved in cleanup crews in succeeding years were also exposed to the ionizing radiation and showed increased risk of leukemia; and approximately five million residents near Chernobyl absorbed a dose, albeit smaller, of radiation, resulting in an increased risk of developing thyroid cancer. In total, approximately thirty people died directly from the blast trauma and acute radiation syndrome immediately following or months after the 1986 Chernobyl disaster. Apart from this accident, no nuclear workers or civilians have ever died directly due to radiation from a nuclear reactor incident.[30]

Another example of a large-scale nuclear power plant disaster took place at the Fukushima Daiichi nuclear reactors in Japan following a major earthquake in 2011. In this case, there were no deaths or cases of radiation sickness, but over 100,000 people were evacuated from their homes preventatively, and anxiety and caution surrounding the disaster has deterred many from returning for fear of health risks caused by radiation. While regulation of the nuclear industry is generally left up to each country, the international community has worked to ensure the safety of nuclear power reactors through the IEA and the International Atomic Energy Agency (IAEA). To strengthen cooperation, the IEA and the IAEA have shared data, statistics, energy modelling tools, policy analysis, and more to better understand the risks nuclear power poses and how to safely transition to it. The two international bodies have also collaborated on publications, seminars, and workshops. A decade after the Fukushima disaster, the IAEA developed global nuclear power safety standards to which all member states should adhere. Some examples of these safety standards include the requirement of a multi-layered barrier system to prevent radioactive releases and the requirement of periodic risk assessments using a graded approach throughout the operation of facilities. While these standards are not legally

[30] National Cancer Institute. "Accidents at Nuclear Power Plants and Cancer Risk." National Institute of Health. Accessed June 17, 2026. https://www.cancer.gov/about-cancer/causes-prevention/risk/radiation/nuclear-accidents-fact-sheet.

binding, the IAEA must follow them in their own operations and whenever the agency provides aid.[31]

Another disadvantage of nuclear power is the carbon emissions released from uranium mining. Even though nuclear reactors release zero emissions in generating energy, uranium mining, an intrinsic part of the process, emits greenhouse gases. There is uncertainty surrounding the exact amount of carbon emissions released because that number depends on the uranium ore grade—the concentration of uranium contained within naturally mined rock; uranium ore grade, which varies greatly within and across regions, impacts emission rates because higher ore grade translates to lower emissions.[32] Nevertheless, nuclear power is more environmentally friendly than fossil fuels. Currently, coal, oil, and natural gas are responsible for 970 tons of greenhouse gas emissions per gigawatt hour of electricity, 720 tons, and 440 tons respectively. Regarding renewable energy sources, nuclear energy still releases fewer emissions with 6 tons compared to 53 tons from solar power, 24 tons from hydropower, and 11 tons from wind power.[33] Even though the process of generating nuclear power is not perfectly clean, it compensates for emissions by avoiding emissions otherwise emitted by fossil fuels. According to the World Nuclear Association, nuclear reactors have avoided the emission of 72 billion tons of carbon dioxide over the last 50 years. With a single nuclear reactor on average preventing about three million tons of carbon dioxide emissions per year, nuclear-generated electricity prevents the emission of over 470 million tons each year that would otherwise come from fossil fuels.

Another challenge related to the transition to nuclear energy is economic. Despite nuclear energy's plethora of benefits, nuclear power plants are extremely expensive to build. However, once built, the production cost of electricity is low and stable. The economics metric to measure the cost of any generating plant is the levelized cost of electricity (LCOE), which is "the total cost to build and operate a power plant over its lifetime divided by the total electricity output

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[31] Carnino, Annick. "IAEA Safety Standards." WNU Summer Institute, Oxford, August 2011. https://www.jaif.or.jp/ja/wnu_si_intro/document/2011/carnino_iaea_safetystandards.pdf.

[32] Norgate, T., N. Haque, and P. Koltun. "The Impact of Uranium ore Grade on the Greenhouse Gas Footprint of Nuclear Power." *Journal of Cleaner Production*, December 1, 2014. https://www.sciencedirect.com/science/article/abs/pii/S0959652613007981.

[33] Ritchie, Hannah. "What Are the Safest and Cleanest Sources of Energy?" Our World in Data, February 10, 2020. https://ourworldindata.org/safest-sources-of-energy.

over that period (cost per megawatt hour)."[34] While the LCOE of nuclear differs among sources, ranging from $80/MWh to $110/MWh in 2023, the LCOE of nuclear is consistently much higher than that of renewable energy sources such as solar and wind, which the World Nuclear Report estimates at $55/MWh and $40/MWh, respectively in 2023. Additionally, while the LCOEs of solar and wind are expected to decrease between now and 2050, the LCOE of nuclear is forecasted to remain the same up until 2050.[35]

According to Planetary P&L, an educational platform focused on ecological economics, the average LCOE for nuclear in 2025 was $120/MWh; the average LCOEs for onshore wind and solar were respectively $60/MWh and $50/MWh; regarding nonrenewable energy sources, the average LCOEs for natural gas and coal were $100/MWh and $90/MWh. The main avenue for making nuclear more affordable is developing new technologies that could potentially reduce construction costs of nuclear reactors by more than 10%. A few examples of those technologies are vertical shaft sinking machines to reduce the amount of excavation, steel bricks instead of traditional steel-composite materials, and more advanced surveillance programs, which are now required to meet safety regulations. The IEA recommends that extending nuclear plants' lifetimes is essential for making nuclear more cost-effective, potentially lowering the LCOE to $40/MWh.[36] Additionally, the IEA endorses the use of small modular reactors (SMRs), which are advanced, compact nuclear fission reactors, to reduce capital costs and minimize risks.[37]

Conclusion:

The IEA endorses transitioning to nuclear power because of its advantages as a clean and stable energy source, but there are still many challenges including health risks posed by radioactive waste, carbon emissions from uranium mining, and the high LCOE of power plants. Nuclear energy is the only clean energy source with security and stability to power electricity grids non-stop. Therefore, it is imperative that countries transition to nuclear power as an

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[34] WNA. "Economics of Nuclear Power." World Nuclear Association, March 24, 2026. https://world-nuclear.org/information-library/economic-aspects/economics-of-nuclear-power.

[35] "Power Play: The Economics Of Nuclear Vs. Renewables." World Nuclear Industry, March 24, 2026. https://world-nuclear.org/information-library/economic-aspects/economics-of-nuclear-power.

[36] IEA. "A New Dawn For Nuclear Energy?" International Energy Agency. Accessed June 18, 2026.https://www.iea.org/reports/nuclear-power-and-secure-energy-transitions/executive-summary.

[37] Liou, Joanne. "What Are Small Modular Reactors (SMRs)?" International Atomic Energy Agency, September 13, 2023. https://www.iaea.org/newscenter/news/what-are-small-modular-reactors-smrs.

alternative to fossil fuels and as a priority over renewables like wind and solar. If the global community is committed to achieving net zero carbon emissions by 2050, which is what member states of the IEA pledge to meet, then nuclear energy is essential to the fulfillment of these goals.

The IEA has already worked to pursue nuclear energy as a global choice by openly endorsing and advocating for nuclear, providing data, advising nuclear plant lifetime extensions, and developing SMRs. The IEA must take greater initiative to help its member states yield nuclear power and to encourage transitions in the greater global community. Nuclear is the most effective path to decarbonizing electricity supply, and without it, the path to global net zero by 2050 will be much harder. This committee must continue to endorse nuclear energy and develop ways to make nuclear energy more accessible and effective for all countries.

Questions to Consider:

1. What initiatives or innovations should the IEA pursue to lower the cost and raise the efficiency of nuclear power plants?
2. How can the IEA deter the global community from relying on natural oil for energy? Why should the IEA endorse nuclear power over hydropower?
    a. Can the IEA and the UN encourage the switch through monetary compensation? Does the UN have the capability to push for this switch?
3. How can the IEA regulate potential health risks from uranium mining? What can the agency do to respond to concerns about and destigmatize nuclear energy?

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III. Crisis Update

At this moment in committee, the Strait of Hormuz has been open for two months. When an agreement between the United States and Iran reopened the Strait of Hormuz, Iran and Oman placed a mandatory service fee for commercial vessels traveling through the strait. As a result, the United States has imposed sanctions on Oman in addition to the sanctions already placed on Iran. Despite general discontent with the service fee, countries are forced to adhere to it because Iran has threatened strikes on any ship that avoids the service fee. There have already been two American ships destroyed by Iranian strikes for not paying the service fee. Before the imposition of the service fee, an average of 130-140 ships navigated the Strait of Hormuz each day. Now, this number has been reduced to half, deterred by either the service fee or the threat of Iranian strikes. As a result, only 10 million barrels of crude oil and LNG are exported through the strait each day, forcing countries to rely on only half of the foreign oil they typically import.[38]

Questions to Consider:

1. How can member states use diplomacy to get Oman and Iran to drop the service charge? Or how can member states incentivize ships' transit through the Strait of Hormuz despite the service charge and Iran's threats of strikes?
2. What methods can member states use to become energy independent and less reliant on foreign oil?

[38] UNCTAD. "Strait of Hormuz Disruptions: Implications for Global Trade and Development." Accessed July 20, 2026. https://unctad.org/publication/strait-hormuz-disruptions-implications-global-trade-and-development.

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