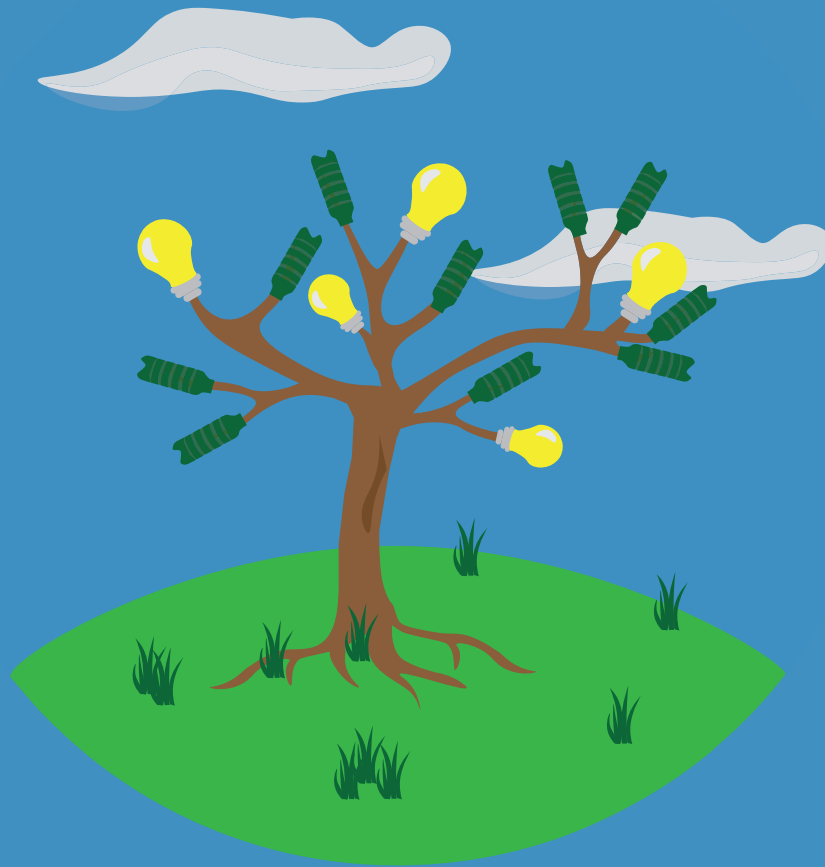




LXIX
SIXTY-NINTH SESSION



UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE

————— BERKELEY MODEL UNITED NATIONS —————

WELCOME LETTER

Welcome Delegates!

My name is Sarah Xu. I am a senior at UC Berkeley majoring in Environmental Economics and Policy with minors in both Asian American Studies and Global Poverty and Practice. I have the distinct honor to serve as the Head Chair of the United Nations Framework Convention on Climate Change's Conference of Parties simulation at BMUN LXIX! Our two topics this year are the Managing of the International Waste Trade and Building Capacity for Technology Driven Climate Solutions!

These topics were chosen as they provide a foundation for and reveal systematic issues with larger climate change issues. In popular discourse, we talk about recycling bottles, but not the trade that makes recycling financially possible. We marvel at new climate technology, but fail to build systems that support their dissemination and use. While a bit niche and systems focused, these topics are extremely important pieces to the climate change puzzle. I can't wait to see you tackle them in committee and embody BMUN's teaching goals.

The topics for this committee are near and dear to my heart as they have been some of the guiding questions to my academic coursework and extracurriculars at UC Berkeley. I have been participating in Model UN simulations since middle school but my approach to this teaching format has greatly changed since starting college. In learning about education and teaching methods, I have heard all of the critiques and problems with Model UN but still believe it has value in teaching cooperation, research skills, and cultivating critical thinkers. I hope that you will leave this committee more inquisitive and knowledgeable about not just climate issues but also international governance. Please read the custom committee procedure document and custom position paper document as this committee will not operate on standard BMUN procedure.

Joining me in running UNFCCC for BMUN LXIX are my wonderful vice chairs: Ryan Blackburn, Srisai Nachuri, and Ainsley Chu.

Ryan Blackburn is an incoming junior at Berkeley, majoring in Political Economy and Society and Environment. Coming up on six years of MUN experience, Ryan enjoys the culture of how west coast conferences are run and thoroughly believes that everyone can take away something positive from BMUN! He is currently interested in the intersection of economics and environmental policy, and in his free time flies home to visit friends. He, and your other members of the UNFCCC dias, are ecstatic for this year's conference!

Srisai Nachuri is currently a second-year student at Cal studying Electrical Engineering and Computer Science. Srisai is super interested in novel technology and how it is leveraged to address

global issues. This will be his second year being involved in Model United Nations, and he is very excited to be your vice chair and to meet all of you at the conference.

Ainsley Chu is a sophomore with junior standing at UC Berkeley majoring in Political Science. She is extremely passionate about international and domestic social issues, from global climate change to the American criminal justice system. While this is her first year in BMUN, she looks forward to meeting everyone soon!

Excited for BMUN LXIX!

Best Wishes,
Sarah Xu

A FOREWARD ON INTERNATIONAL CLIMATE CHANGE POLICY

Before we dive into our topics, let us situate ourselves in the international climate change policy discussion. In mapping out prominent climate policies, we can better grasp what has worked and what has not. As a delegate in UNFCCC it is important to understand how environmental policy has evolved, builds on previous agreements, and created circumstances that influence the current situation.

MONTREAL PROTOCOL 1987

Hailed as one of the first successful international climate policies, the Montreal Protocol sought to reduce the use of chlorofluorocarbons (CFCs) that were contributing to ozone depletion ("UN Climate Talks"). Part of the Montreal Protocol's success is attributed to already existing substitutes that industries could transition to quickly (Chasek et al.).

RIO EARTH SUMMIT 1992

The United Nations Framework Convention on Climate Change (UNFCCC) arose out of the negotiations at Rio. The UNFCCC set up a framework for frequent meetings, but failed to be legally binding and did not set any real climate goals or timelines. However, the UNFCCC created the international climate change regime that dictates the conversation today ("UN Climate Talks"). The frequent meetings set up by the UNFCCC are referred to as the Conference of Parties (COP).

Historical Emitters & the Annex-I Issues

Another striking piece of the UNFCCC is that it set up a list of historical emitters that “are taking the lead in modifying longer-term trends in human driven “anthropogenic” emissions consistent with the objective of the Convention” (“United Nations Framework”). This list is referred to as the Annex-I nations. Controversially, nations like China (the biggest polluter today) and India (the most populous nation) were left out of Annex-I. China and India were excluded as the Annex-I definition was aimed at nations that benefited the most out of early carbon pollution, not current polluters. The exclusion of China and India from Annex-I nations was cited by United States President Donald Trump as one of the reasons the “Paris accord is very unfair at the highest level to the United States” (“Statement by President”).

KYOTO PROTOCOL 1997

The first legally binding climate agreement, the Kyoto Protocol called for a reduction of climate emissions to 5% below 1990 levels. This top down approach in climate change was not popular amongst Annex-I nations as they shouldered the majority of the burden (“Timeline: UN Climate Talks”). The question of which nations should bear the most burden in “fixing” or “addressing” climate change is still a central issue today (Chasek et al.).

COPENHAGEN ACCORD 2009

The Copenhagen Accords set the climate change regime’s goal to a no more than 2 degrees celsius increase in global temperatures. Annex-I nations, especially island nations, fought for a goal of 1.5 degrees celsius (“Timeline: UN Climate Talks”).

PARIS AGREEMENT 2015

This landmark agreement flipped the script for climate negotiations. Unlike the Kyoto Protocol, the Paris Agreement allowed member nations to set their own climate standards and goals. Requiring parties to submit Nationally Determined Contributions (NDCs) reports, this approach has created flexibility for each nation. Many Annex-I nations embraced this method as it redistributed the burden (“United Nations Framework”). This method has been highly critiqued since current NDCs, if executed to their fullest potential, may still miss the 2 degree celsius goal. This distributed method of climate governance can be referred to as “polycentric” (Jordan et al.).

Nationally Determined Contributions (NDCs)

NDCs highlight the climate goals and priorities of each nation. These documents are varied in their content and presentation but each nation party to the UNFCCC submits and updates their NDCs regularly (Hub). Check out your country's NDCs before you begin other research! You can find these documents at bit.ly/lxixunfccc

The success of international climate policy, like many other regimes, depend heavily on a few pivotal countries. In climate negotiations, these have historically been Annex-I nations. The United States continues to be responsible for vast amounts of greenhouse gas (GHG) emissions. Some researchers believe that the success of the Montreal Protocol lies in the United States' leadership since they had already found a way to cheaply produce a substitute (Chasek et al.). The Kyoto Protocol suffered the opposite fate and is seen as a failure after the United States, under President George W. Bush, failed to ratify it (Chaesk et al.). The success of the Paris Agreement also rests delicately on the bilateral agreement struck by President Barack Obama of the United States and President Xi Jinping of China ("US-China Joint"). Thus, even with the plurality or majority consensus, any resolution that does not include majority polluters, such as the United States, risks long term failure. As delegates, a big hurdle is how to avoid climate catastrophe while appealing to the interests of polluting giants.

TOPIC A: MANAGING THE INTERNATIONAL WASTE TRADE

Think about the last time you threw something away. Where did it go? Who will interact with it? Why is any of this important?

According to the United States Environmental Protection Agency (EPA), in 2017 only approximately 30% of all waste products in the United States were properly sorted into recycling ("National Overview"). Of that percentage, only 9% of the total volume was actually recycled into a usable product ("National Overview"). Therefore, while it is still important for us to take some time to properly sort a take-out container or plastic bottle after we are done using it, it is even more important to think about the post-consumer life of our waste. Interestingly enough, a good amount of it is traded to countries in the Global South. The trading of post-consumer waste is a multibillion-dollar industry worldwide (O'Neill). At every interaction from the collection, sorting, shipping, and reprocessing of plastics, there is money to be made.

This entire "convoluted and opaque" process is difficult to track, as it is an industry without a lot of clear statistics. After all, one man's trash is literally turned into another man's treasure and no one is keeping track of the trash. Current estimates place the total value of the waste trade at approximately \$500 billion each year (Minter 20). As a consumer, you are a part of this industry.

Waste, Recycling, Trash? What's the difference?

For this committee, we will draw distinctions between these usually interchangeable terms. Waste will encompass all items that are discarded by consumers. Recycling denotes items that have valuable components that can be extracted efficiently. Trash are waste objects that cannot provide further value or are inefficient to extract value from (O'Neill).

How does money get made in this industry? At every point in which a waste product changes hands, money is to be made. Money is made when the recycling is collected from the consumer, sorted & packed up to ship, distributed to recycling facilities, recycled to a usable product, and sold to manufacturers (Minter).

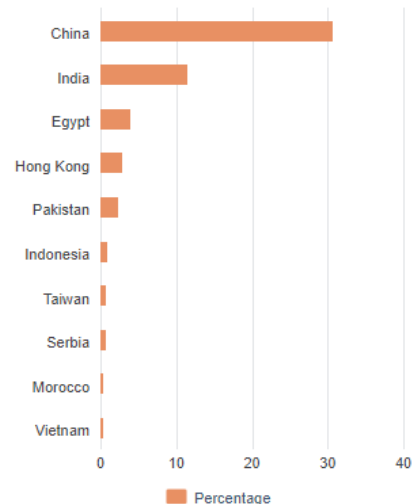
Ten largest types of non-hazardous waste exported from the EU to non-OECD countries in 2014:

Percent share of EU non-hazardous waste exports to non-OECD countries



Ten largest non-OECD destinations for EU exports of non-hazardous waste in 2014:

Percent share of EU non-hazardous waste exports to non-OECD countries



2014 Information on EU's exports of waste to non-OECD Countries. This is before China's Operation National Sword Policy was implemented. Source: European Commission

In the United States, consumers pay their local governments to pick up their recycling. This fee is used to pay sorting plants in the United States to sort through your waste again, sending the items that can generate value to auction. Waste companies pay the sorting plants and shipping companies to take away the waste in shipping containers. These waste companies in turn are paid by recyclers in places like China, Ghana, and Brazil to buy sorted items to break down into usable materials ("The Plastic Waste"). The materials are then sold for slim profits. Alternatively, waste is

put into landfills and handpicked by waste pickers for valuable objects. These pickers are not just poor families in non Annex-I nations but also exist in places like California, where there is a financial incentive to return aluminum cans, glass, and plastic bottles to recycling centers (O’neill).

Poorly managed waste systems are a symbol of government ineffectiveness and inefficiency. In addition to the clogging of waterways and immense land usage of trash, there are many other persistent issues that plague the international waste trade:

TECHNOLOGICAL & FINANCIAL RESTRAINTS

Value can only be extracted out of waste where it is financially efficient to do so. For example, hard plastics containers can easily be sorted, broken down, and remade into lesser quality plastic products since there are very few impurities in the mix (Minter). Recycling a cell phone is much harder. An average smartphone today includes many valuable metals. Lithium is a mineral so valuable to clean tech companies that their billionaire CEOs have advocated for coups in nations like Bolivia to secure access to lithium mines (Musk). Tin, tantalum, tungsten, and gold (3TGs) are often sourced in areas of conflict and poor labor and environmental standards (Solano et al.). Therefore, if one can efficiently break down a smartphone to be recycled, it would alleviate the need to source raw materials and provide a huge societal benefit.

So why don’t we have comprehensive technology recyclers?

The first problem is from a technological standpoint, the recycling of smartphones is a complex process. The entire extraction process would have to include the sorting, physical ripping apart of the smartphone, melting and chemically separating the different parts, and creating an output that can be easily reused. For example, a milk carton will often contain reusable components: cardboard, some aluminum, and wax. The separation of these materials is difficult, try it out the next time you have a container! The recycling process also needs to be highly specialized to each product. The recycling and reuse of a pen will require different machinery than the breakdown of a paintbrush. High upfront capital costs in machine manufacturing and research create a barrier to creating specialized machinery and inhibit technological advances (“Barriers to”).

“Non-hazardous waste contains valuable secondary raw materials. As natural resources are scarce, the importance of these materials is growing. Waste has become a major trading good” (“Waste Shipment”).

CLIMATE IMPACTS

While excess waste is definitely an environmental issue, as UNFCCC we must also focus on its climate impacts. Plastic products are petroleum oil products (Parker). This limited resource’s extraction and manufacturing is a huge issue. Upstream emissions and confronting waste creation

is therefore an important issue. In this committee, both the upstream and downstream should be discussed, keeping in mind that the upstream effects are those that are more directly applicable to the jurisdiction of the UNFCCC.

The international waste trade is also a large polluter when it comes to the trade of the post consumer waste and recycling process. Shipped across the world on trains and ships, this “green” industry benefits directly from the use of fossil fuels (O’neill 34). Furthermore, for substances like glass, the generation of new raw materials might be more environmentally friendly than the recycling of the post-consumer products due to the high energy outputs (O’neill 18).

INEQUALITY

Inequality permeates the waste industry. Those who create the most waste are those who use the most stuff. Those who recycle the most are also those who are the richest since they also consume the most. With scarcity comes creative thinking and poorer communities tend to buy less and reuse more, resulting in lower rates of recycling. In fact, some of the most disadvantaged communities directly work within the waste trade (“Mission”).

The downstream effects of the waste industry are deeply tied to the upstream especially in issues of inequality. If the global community decided to completely stop the flow of waste it would also mean stripping the livelihoods of thousands of waste pickers from the most vulnerable communities around the world. In reducing waste flows overall, countries should be prepared to support waste pickers that benefit from the current system. As a part of the informal economy, waste pickers often exist at the margins of society. Orphans and ostracized ethnic and religious groups often constitute a larger percentage of waste pickers. These folks are also those who have fallen through the gaps in traditional government support and safety nets. In the past, poor press about waste infrastructure has sparked the filling in landfills and destruction of entire waste picking communities (O’neill 176). Therefore, to manage the international waste trade nations may have to also contend with the disadvantaged communities that rely on the trade to survive. These communities are also some of the first to bear the brunt of climate change impacts like raising tides and unpredictable agricultural cycles. The living conditions and lack of formal recognition by local governments also concerns human rights (O’neill).

Faced with these difficult circumstances, waste pickers have sought space to have their voices heard and hold their political leaders accountable. In working to better their livelihoods, waste pickers have created the Global Alliance of Waste Pickers that aims to bring together the stories and struggles of waste pickers around the world and elevate their voices (“Mission”).

GLOBAL DECLARATION OF THE 1ST WORLD CONFERENCE OF WASTE PICKERS

1. We declare our commitment to work for the social and economic inclusion of the waste picker population, to promote and strengthen its organizations, to help them move up the value chain and to be included and given priority in formal waste management systems.
2. We declare our rejection of incineration and landfill-based technologies and agree to demand and create processes that promote “zero waste”, or the maximum utilization of waste (such reuse, recycling and composting). These alternatives represent viable socioeconomic alternatives for informal and marginalized sectors of the global population.
3. We declare our commitment to continue sharing knowledge, experience and technology, as these actions will promote and accelerate contact with the greatest possible number of waste pickers and their organizations across the world, making visible their living and working conditions and their contributions to sustainable development.
4. We declare our commitment to advocate for improved laws and public policies that effectively involve waste picker organizations. Waste pickers should become actors in decision-making processes, with the goal of improving working conditions for their category, developing knowledge and capacity-building activities, and seeking the recognition and professionalization of their work (“Mission”).



Still from Plastic China, a documentary that followed on plastics sorting plant in a city in Shangdong, China. Source: Wang Jiuliang's Plastic China

It is important to recognize that inequality and waste pickers do not only exist in non-Annex I countries. In the United States, poor black and indigenous communities often live closer to landfills and recycling plants than affluent white communities. Waste pickers in the United States often exist at the margins as this work is a part of the informal economy without much oversight or support ("Mission").

The waste trade brings up many interconnected issues for the international community. In the next section, we will explore how governments and the international community have made decisions that exacerbate and address these issues.

INTERNATIONAL ACTIONS ON THE WASTE TRADE

"Governments will need to negotiate a toughminded treaty to ratchet up national policies, fund waste and recycling infrastructure in developing countries, encourage technological innovation, limit corporate risk-taking, enforce producer responsibility for recycling, and rein in consumer waste" (Dauvergne).

Before 2017, the vast majority of recyclable materials in the United States were shipped to China via shipping containers that helped import Chinese goods. This system took advantage of the high levels of Chinese imports to the United States and generated a steady revenue stream. These materials were then purchased by recycling facilities throughout China and reduced down to individual components to be resold on the market. Recycling facilities tend to be owned and operated by single family units and located in poorer, rural provinces (Jiuliang).

In 2017, China began to reverse course. "Operation National Sword" prohibited the import of Western waste and upended the international waste trade. This decision has had rippling effects across the world. Waste previously diverted to China are making their way to impoverished Southeast Asian countries and others end up in landfill (Minter 25). Western "recycling" systems were unable to ramp up any significant recycling capacity and most "recycling" facilities in the United States are sorting facilities ("The Plastic Waste"). China has also rolled out recycling plans domestically, starting in Shanghai, a comprehensive sorting program was implemented with strict rules and fines. However, some preliminary investigations show that the waste diversion effort was mainly to sort out trash that could be burned safely, not to sort out reusable waste. Other countries have begun to follow China's lead with many Sub Saharan African and Southeast Asian nations refusing waste generated by the Global North("Indonesian Waste-Pickers"). With the lack of infrastructure in the west and reluctance to take waste by non Annex I nations, the global system is running headfirst towards a new wasteland.

Here are some of the applicable past resolutions that provide a framework on how to manage the international waste trade:

The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal (Basel Convention) 1989

Due to tightening domestic environmental regulations, companies in Western nations began shipping out and dumping waste in the 1970s. This “toxic colonialism” directly exploited non-Annex I nations. A high profile case of this type of dumping is the Khian Sea waste disposal incident where an American ship dumped incinerator ash on a Haitian beach (“Basel Convention”).

The goal of the Basel Convention was to strike a balance in the hazardous waste trade through the creation of a regulatory system, reduction of hazardous waste, and the restriction of transboundary hazardous waste movements. In its text, the Basel Convention allowed parties to create multilateral agreements to ship hazardous waste if it is “environmentally sound” to do so (“Basel Convention”). Furthermore, the regulatory system put in place required written consent and nondiscrimination between the exporter and importer countries. Importantly, the Basel Convention also set up regional centers for training and technology transfers to minimize hazardous waste generation and cater to region specific needs.

The Basel Convention restricted its breadth through the defining of hazardous waste and its characteristics in Annex I and II of the Convention’s resolution. These designations fail to directly address many aspects of hazardous waste such as nuclear waste, electronic waste, and the dumping that occurs by ships. In 2019, the Basel Convention was amended to designate certain types of plastics as “hazardous” and therefore subject to the Prior Informed Consent (PIC) rules. However, the definition remains broad and does not address the inherent inequalities in the waste trade. Furthermore, the application of PIC does not directly address many of the pressing environmental or infrastructural issues with the international waste trade. Failures with the implementation and enforcement of PIC is also a key issue in the Basel Convention. A country can accept waste imports but not have the systems to safely process the imported waste.

Delegates at BMUN LXIX in UNFCCC should come prepared to discuss their nations definition and categorization of waste for the purposes of addressing recent amendments to the Basel Convention. For example, the OECD establishes a distinction between “amber” and “green” waste that help with the defining transboundary movement of waste but does not create categorizations that reflect the Basel Convention standards (US EPA).

Excerpts from the Relevant Articles of the Basel Convention

Article 6.1-2

1. The State of export shall notify, or shall require the generator or exporter to notify, in writing, through the channel of the competent authority of the State of export, the competent authority of the States concerned of any proposed transboundary movement of hazardous wastes or other wastes. Such notification shall contain the declarations and information specified in Annex V A, written in a language acceptable to the State of import. Only one notification needs to be sent to each State concerned.
2. The State of import shall respond to the notifier in writing, consenting to the movement with or without conditions, denying permission for the movement, or requesting additional information. A copy of the final response of the State of import shall be sent to the competent authorities of the States concerned which are Parties.

Article 11.1

1. Parties may enter into bilateral, multilateral, or regional agreements or arrangements regarding transboundary movement of hazardous wastes or other wastes with Parties or non-Parties provided that such agreements or arrangements do not derogate from the environmentally sound management of hazardous wastes and other wastes as required by this Convention. These agreements or arrangements shall stipulate provisions which are not less environmentally sound than those provided for by this Convention in particular taking into account the interests of developing countries.

Article 14

1. The Parties agree that, according to the specific needs of different regions and subregions, regional or sub-regional centres for training and technology transfers regarding the management of hazardous wastes and other wastes and the minimization of their generation should be established. The Parties shall decide on the establishment of appropriate funding mechanisms of a voluntary nature
2. The Parties shall consider the establishment of a revolving fund to assist on an interim basis in case of emergency situations to minimize damage from accidents arising from transboundary movements of hazardous wastes and other wastes or during the disposal of those wastes.

United Nations Convention on the Law of the Sea (UNCLOS) 1982

A possible unintended consequence of limiting the international waste trade is the dumping of waste into the global commons. In the Khian Sea waste disposal incident, the majority of the incinerator ash is purported to have been dumped at sea after being shooed away by Haitian Officials. UNCLOS provides some framework and insight into ocean dumping (“United Nations Convention”). UNCLOS built upon the 1972 London Convention on the Prevention of Marine Pollution (“United Nations Convention”).

Excerpts from Relevant Articles of UNCLOS

Article 1.5a

“(D)umping” means: (i) any deliberate disposal of wastes or other matter from vessels, aircraft, platforms or other man-made structures at sea; (ii) any deliberate disposal of vessels, aircraft, platforms or other man-made structures at sea;

Article 210.4-5

4. States, acting especially through competent international organizations or diplomatic conference, shall endeavour to establish global and regional rules, standards and recommended practices and procedures to prevent, reduce and control such pollution. Such rules, standards and recommended practices and procedures shall be re-examined from time to time as necessary.
5. Dumping within the territorial sea and the exclusive economic zone or onto the continental shelf shall not be carried out without the express prior approval of the coastal State, which has the right to permit, regulate and control such dumping after due consideration of the matter with other States which by reason of their geographical situation may be adversely affected thereby.

Article 216.1

Laws and regulations adopted in accordance with this Convention and applicable international rules and standards established through competent international organizations or diplomatic conference for the prevention, reduction and control of pollution of the marine environment by dumping shall be enforced: (a) by the coastal State with regard to dumping within its territorial sea or its exclusive economic zone or onto its continental shelf; (b) by the flag State with regard to vessels flying its flag or vessels or aircraft of its registry; (c) by any State with regard to acts of loading of wastes or other matter occurring within its territory or at its off-shore terminals.

World Bank and World Economic Fund (WEF) Interests

The World Bank and WEF have a vested interest in the management of the international waste trade. The World Bank has highlighted the management of waste as not only an area for financial gain but also an issue to tackle system and infrastructure issues (“Solid Waste Management”).

The World Bank Waste Management Strategy

In recognizing waste management as a pressing issue, the World Bank recommends a multipronged approach to the issue including: Infrastructure, Legal Structures and Institutions, Financial sustainability, Citizen Engagement: cultural behavior, Social inclusion, Climate change and environment, Health and Safety, and Knowledge Creation (“Solid Waste Management”).

CASE STUDY: CHANGES IN WASTE INFRASTRUCTURE IN ASEAN NATIONS.

A key player in the international waste trade that commonly interacted with the World Bank and WEF, as mentioned above, is the supranational organization the Association of Southeast Asian Nations. The group of states can be seen as a smaller version of the UN, similar to the African Union and the Organization of American States; they work to facilitate regional thinking among SE Asian nations like Singapore, Indonesia, and the Philippines, among others. Of note to this topic, an important discussion within this body is the growing inefficiency in waste management in many of the ASEAN member nations' plants.

After China stepped out of the processing market in recent years, Greenpeace reported that ASEAN nations have seen waste imports grow at a staggering rate of 171%, or a total increase of nearly 1.5 million tons ("Southeast Asia's Against"). With the timeline of building and integrating new processing facilities taking much longer than this increase allows, ASEAN nations have been bombarded with waste that cannot be processed. In Jakarta, Indonesia, the largest landfill in the region, named Bantargebang, is expected to reach capacity in a year, underlining a dire situation not only for ASEAN's member states, but for the international waste market as a whole.

An Income of Waste, but Nowhere to Deposit



Source: 22Kartika ASEAN Today

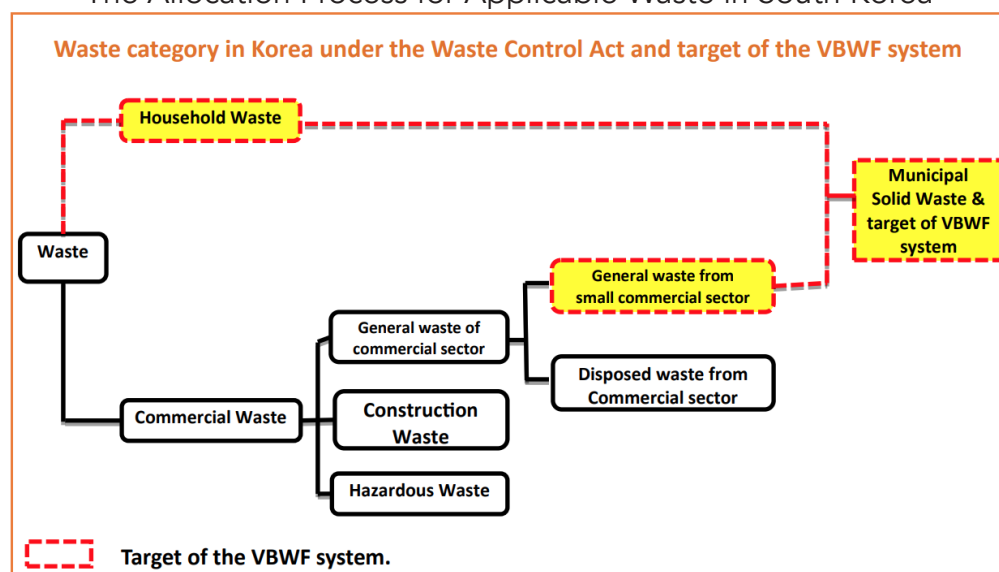
ASEAN media reports that the majority of its member nations experience waste mismanagement 55% to 86% of the time, with the region's largest landfill in Jakarta quickly reaching capacity. The pictured landfill, Bantargebang, takes in the unprocessable and contaminated waste that is unable to be processed in refining facilities but is rapidly approaching a cap on space available for its incoming trash.

To make matters worse, facing the challenge of taking in the world's trash, ASEAN members have begun publicly stating their intent to refuse incoming waste with some even sending back shipments of waste to their country of origin. Creating international tension, the Malaysian Environment and Climate Change Minister Yeo Bee Yin stated the Malaysian government does not "want to be the garbage bin of the world" ("M'sia Returns"). Following in the footsteps of China with domestic pollution concerns, lower profits, and an increasing amount of domestic waste, countries like Malaysia, the Philippines, and Vietnam have all acted to limit the role they will play in the international waste market.

Along with the focused exporting of waste to ASEAN member nations, another issue is presented: with lower worker and health regulations in working environments, health is of great concern for those who do their part in refining incoming waste. Indonesian waste pickers have reported stretches of time where they have starved on the job, with normal living restricted as companies move to make the most out of their workforce in spite of low profits. These informal workers, waste pickers, are also increasingly susceptible to coronavirus, as many develop health abnormalities or come into contact with multiple communities on the job ("Indonesian Waste-Pickers"). To top this off, it is of little use of appeal to the government, as ASEAN member nations more often than not have few regulations in the workplace and informal waste pickers lack formal identification needed to navigate a system for assistance. With this industry jeopardizing the wellbeing of ASEAN member nations' economy, environment, and workers, it is important to realize what solutions are possible to rectify the situation.

This all culminates into common thought that ASEAN countries should ratify the Basel Amendment and limit their own imports of waste to avoid a highly stratified system of waste income, though this would easily lead to another shift of exporting waste towards another region, namely North Africa which has its own influx of trash from European nations ("Trash Trade Wars"). Delegates should be wary that there will always be an exploited importer with this current system of exporting waste from more economically developed nations, and that further, individualized policy is required. An example that countries are attempting to learn from is South Korea, whose internal action has allowed for efficient waste recycling and low landfilling rates. The UNDP issued a report that analyzes key policies that have granted South Korea with an efficiency rivaling other G20 nations, with practices such as the Volume-Based Waste Fee System that focus in on giving the most attention to domestic waste that is easily processed and recycled (Yoo).

The Allocation Process for Applicable Waste in South Korea



Source: Comprehensive Study of Waste Management Policies and Practices in Korea, UNDP

The Volume-Based Waste Fee System works similarly to carbon taxes - the higher the amount of pollution emitted, the more fees in taxes to pay to the government for efficient waste removal or recycling. Crowdsourcing profits in this way allows the South Korean government to successfully fund refineries and landfills, one of the larger issues in ASEAN nations who are unable to keep up with increasing amounts of waste imports.

Southeast Asia is in a unique position in the international waste trade: taking on the heavy responsibilities of the previous waste importer, the region continues to be exploited by their clients as waves of contaminated, mislabeled, or unprocessable material comes into member nations' ports. With a decreasing amount of space and options available to combat the influx of waste, countries choose between the wellbeing of their workers or their participation in the global waste market. Delegates should be wary of what solutions are needed to address this pattern of heavy exports to a developing region of the world, and what actions should be taken by major waste exporters to ensure a more sustainable waste management culture.

SUMMARY OF IMPORTANT ISSUES REGARDING TOPIC A

Preparing for the changing international waste trade landscape as non-Annex-I nations begin to bar the importing of waste.

Addressing inequities in the waste trade both in between nations and for individuals directly impacted by the waste trade such as waste pickers.

Discussing the trade and commodification of waste for economic growth.

Recognizing the rising urgency of climate change in relation to waste.

Addressing the technological and financial constraints of the waste trade.

QUESTIONS TO CONSIDER

Question 1: In solution building, is it important for the UNFCCC to consider the waste pickers or people most affected by the international waste infrastructure? If so, what language will help bring equity into the discussions. If not, why?

Question 2: What policies can be put in place to improve the drawbacks of the Basel Convention?

Question 3: Seeing as waste is generated everywhere, should Annex-I nations be held more accountable in the international waste system?

Question 4: Should the international waste regime be separated from the climate change regime?

TOPIC B: BUILDING CAPACITY FOR TECHNOLOGY-DRIVEN CLIMATE SOLUTIONS

There are so many new and exciting advances in technology driven climate solutions: geoengineering advancements that capture CO₂ and convert it to usable plastic beads to gigantic floating offshore wind turbines (“Barriers to Renewable”). In addressing the question of “solving” climate change, we have the technology to make climate change a villain of history instead of our looming doom. So why have we not adopted these solutions widely?

A note on Jargon

In this committee we will be using the phrase “climate solution technology” broadly. Classifying the technology related to climate solutions is a difficult process and “clean technology” does not encompass all of the different inputs. For example, to build an offshore wind turbine, we not only need the turbine components but also port machinery to assemble the pieces, undersea transmission cables, and regular mechanics tools. Only the wind turbines themselves fall under most “clean technology” definitions but this committee is interested in all of the components required for actualizing a sustainable future.

We have not built out the capacity needed for climate solution technology due to institutional and infrastructure issues.

As defined by the Paris Agreement, capacity building is the ability of countries to “take effective climate change action . . . to implement adaptation and mitigation actions, and should facilitate technology development, dissemination and deployment, access to climate finance, relevant aspects of education, training and public awareness . . .” (“Paris Agreement”).

This committee will not focus on promoting specific technology driven climate solutions, however it is important to have some general knowledge about the breadth of these technologies. Clean technology, and most climate change focused solutions, can be broadly broken down into three types: adaptation, mitigation, and geoengineering.

Type	General Descriptions	Examples
Adaptation	Technologies that deal with the existing impacts of climate change.	Seawalls, drought resistant crops, floating houses
Mitigation	Technologies that aim to reduce Greenhouse Gas (GHG) emissions.	Photovoltaic panels, wind turbines, geothermal energy plants
Geoengineering	Technologies that aim to reduce the amount of GHGs in the atmosphere	Carbon sequestration, solar radiation management

This committee will focus on the systems and institutions that create barriers to the implementation of climate solution technology. We will be exploring broad issues with these

components later in this topic synopsis. Summarized in the table below, are some of the different components that are important to consider:

Component	Examples/Explanation
Transportation & Physical Infrastructure	Electricity transmission lines, roads, and construction capacity
Supply Chain & Resources	Access of countries or companies to needed resources such as lithium and 3TGs. Additionally, it is access to purchase climate solution technologies such as through a country's own wealth or foreign direct investment.
Government Infrastructure	Conflicting government priorities as well as government structures inhibit climate solution technology. For example, oil producing countries may not want to invest in climate solutions to protect the wealth of powerful politicians and lobbyists. Furthermore, the government's ability to facilitate property enforcement and land use is a powerful policymaking lever.
Technology Transfers	University research, multilateral agreements, research conferences
Intellectual Property	The applicability of clean technologies as intellectual property guards the use of climate solution technologies.
Technology Maintenance	Upkeep of technology, especially in rural communities, is a concern. Almost all climate solution technologies require experts to check and maintain them.

There are a lot of possible explanations for specific explanations for why capacity for climate solution technologies have not been expanded. In non-Annex I nations, these tend to be issues with brain drain, small clean technology markets, bureaucratic climate issues, and low public investment in research and development. In Annex I nations, bureaucratic climate, competing interests, and the role of the private sector also play significant roles. In this committee, we will focus on the following issues that create barriers for climate solution technologies:

MONEY MONEY MONEY

Supply chains

Increasing the use of climate solution technologies will increase the demand for raw material inputs. This creates unique problems for certain industries. The capacity to mine for or generate raw materials can be limited by geography and subsequently controlled by very few actors. Governments can therefore limit this component (Bradsher). We will explore this issue further through a later case study.

Capital costs

The purchase of clean technology can be expensive and prohibitive for most users. Even if the returns in investment in the long terms are better with clean technology, the upfront costs can slow the adoption of the technology. This turns into a vicious cycle as fewer users and demands often generates low profit margins to clean technology companies, sending them into death spirals ("Why Are Solar"). This cycle is identified as the reason why clean energy companies have historically struggled to stay fiscally sustainable. This issue has garnered a lot of criticism and emboldens fossil fuel lobbyists and politicians in opposing clean energy technologies ("Why Are Solar").

High capital costs are also identified as the reason why clean technologies cannot be adopted widely in non Annex I nations. While technological leapfrogging can happen, it is not happening at high enough rates to justify upkeep or maintenance of the technology due to high capital costs ("Barriers to Renewable").

Leapfrogging to Renewable Energy



Solar panels on top of a mud and grass hut. Source: Solafrica and Sustinova

Leapfrogging in the clean technology industry context refers to the bypassing of traditional fossil fuel energy infrastructure to embrace clean technology ("Saving the World"). This way, as countries increase living standards, they do not need to contend with existing reliance on coal or other nonrenewable sources of energy. While an interesting concept, leapfrogging projects still face issues of infrastructure deficits and require upkeep and maintenance ("Saving the World").

Research

The financial viability of clean technology can also reduce the willingness of companies and research institutions to conduct research and development into the clean energy industry. With the energy market so saturated with fossil fuel sources, clean energy technologies fight for limited market share. Similar to the vicious cycle discussed above in capital costs, the slow market growth of the renewable energy sector disincentivizes researchers and companies to invest in clean technologies. Furthermore, due to issues like brain drain, often research and its benefits are

concentrated in Annex-I nations, creating an inequality in access to knowledge surrounding climate solution technologies (“Barriers to Renewable”).

Intellectual Property (IP)

Intellectual property is a barrier to the wide dissemination of climate solution technology as countries have to balance domestic policies and economic gains with the climate priorities. Sharing of clean solution technologies often relies on goodwill and the strategic considerations of nations such as a display of soft power. Furthermore, some nations are known to violate intellectual property laws more than others, creating rifts in research institutions and knowledge sharing (Glachant and Dechezleprêtre). These intellectual property disputes have often arisen in regards to healthcare manufacturing but raises alarms for climate solution technology as well. As we will explore in past international solutions, the international community has reached compromise in intellectual property law in the past (Zhou). The challenge will be applying this broadly and more deeply in growing industries that will continue to power global systems.

“Required by the principle of mutual supportiveness in international law, greening IP must accompany the implementation of the Paris Agreement. The UNFCCC could take a proactive active role in the reconciliation of the existing World Trade Organization (WTO) and champion a new way of thinking” (Zhou).

TECHNOLOGY TRANSFERS

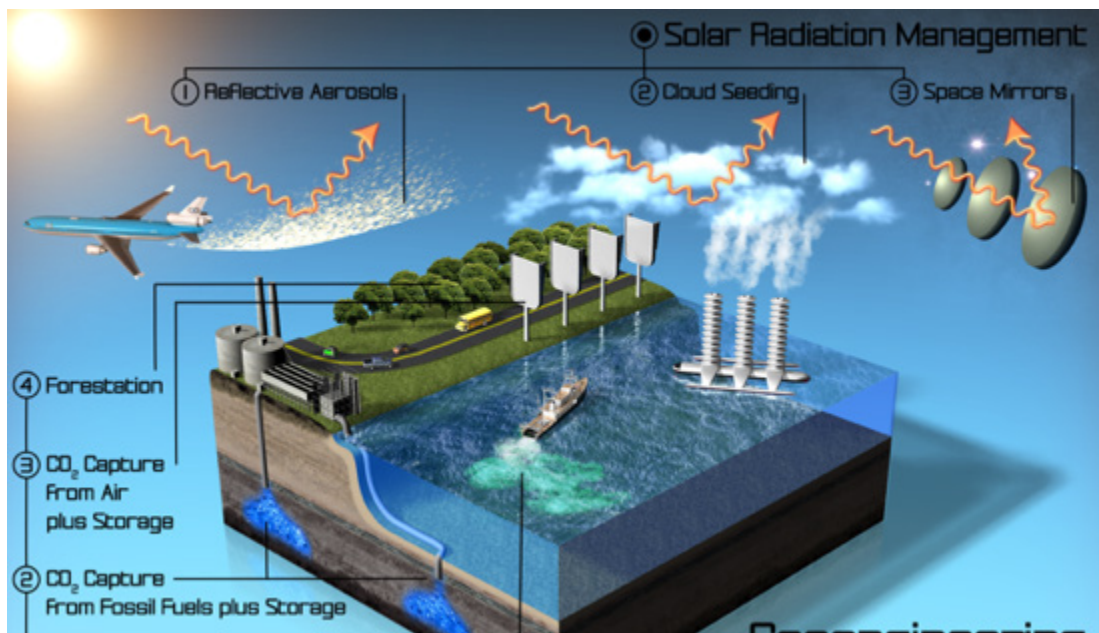
Technology Transfers are defined by the Intergovernmental Panel on Climate Change (IPCC) as “a broad set of processes covering the flows of know-how, experience and equipment for mitigating and adapting to climate change amongst different stakeholders such as governments, private sector entities, financial institutions, non-governmental organizations and research/education institutions” (“Metz et al.”). Technology transfers are a buzz word when it comes to international development. As the IPCC definition suggests, technology transfers are a loosely associated group of actions between the private sector, public institutions and interests, and governments to share knowledge.

Technology transfers are not the perfect solution. In the Kyoto Protocol’s market based technology transfer mechanism, Clean Development Mechanism (CDM), only three countries saw the benefits of over 70% of the registered projects: India, China, and Brazil. Previous technology transfer based projects have largely left out Sub Saharan Africa and island nations (Jordan et al. and Maya.). These inequities in technology transfer programs in the past could be due to the strategic importance of India, China and Brazil. Thus a question arises: how can we generate incentives, financial or otherwise, to expand the benefits of technology transfers to all nations?

“Clean energy technology transfer is an important precondition for climate change mitigation and the transition to a low-carbon global economy, because clean energy technologies are costly and face a number of barriers to adoption, particularly in developing countries” (Jordan et al.)

Foreign direct investments are also a form of technology transfers as they can strengthen financial systems and property enforcement through the borrowing of levers from other nations. Leaning on the legitimacy and finances of foreign institutions is a double edged sword. Foreign direct investment is limited and may weaken a nation’s claim to sovereignty (Zhou).

A Note on Geoengineering



Another rising concern in climate solution technologies is geoengineering. Broadly, geoengineering can be split into Carbon Dioxide Removal (CRM) and Solar Radiation Management (SRM). Ranging from simple “fixes” like planting trees and painting roofs white to complex technologies like ocean iron fertilization and cloud seeding, there is still so much we do not know about the effects of geoengineering. One or more of these geoengineering technologies could have disastrous outcomes like the collapse of entire ecosystems (Editors). Delegates should focus less on the cool technologies and focus on the moral and ethical implications of the widespread use of this technology. As there are so many uncertainties, should any resolution regarding technology also include clauses for growth and adaptation to future technologies not yet known? What are the benefits and drawbacks of creating broad solutions in anticipation of technologies like geoengineering?

PAST INTERNATIONAL ACTIONS RELEVANT TO CAPACITY BUILDING FOR TECHNOLOGY-DRIVEN CLIMATE SOLUTIONS

Paris Agreement & UN Environment (UNEP)

Technology transfers are not a new idea. As such, most important international agreements recognize them in some way. The Paris Agreement did such in the articles listed below. In creating two subsidiary bodies (for Scientific and Technological Advice and Implementation), the Paris Agreement made clear that they saw failures in previous technology transfer regimes (Bodansky). In the five years since these bodies were created, it remains unclear if there is any positive effect. Furthermore, these bodies, despite their names, are limited in scope in addressing all components for a sustainable future (“Capacity Building In”).

Interestingly, the UNFCCC also has a database for best practices in technology transfers and other relevant information. Like the NDCs, this database is mostly publicly accessible. However, the old question of financing rears its ugly head. The international climate change policy regime does partially answer this question through individual country commitments in NDCs and the UNEP Environment Fund and Green Climate Fund. However, these levers have not catapulted climate solution technology. Delegates for BMUN LXIX will have to think creatively about addressing capacity building in their proposed solutions since many common resolution routes are already being implemented through the UNFCCC.

The most relevant sections of the Paris Agreement are summarized as follows:

Article 6.8	Goals of using technology transfers in the mitigation and adaptation technologies
Article 10	Provides framework on how to guide and support the implementation of technology transfers
Article 11	Capacity building and how parties can create appropriate agreements for technology transfers
Article 13.9-11	How to identify technology transfer needs and resources in NDCs
Article 18	Establishes The Subsidiary Body for Scientific and Technological Advice and the Subsidiary Body for Implementation

World Trade Organization (WTO) and the The Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement) 1995

A groundbreaking agreement on intellectual property, the TRIPS agreement between WTO members helped create broad protections for IP. The three main features of TRIPS are: (1) minimum standards of protection, (2) general principles for IP enforcement, and (3) provides a dispute settlement process (“TRIPS: A more”). TRIPS helped to set the general foundation for IP protection

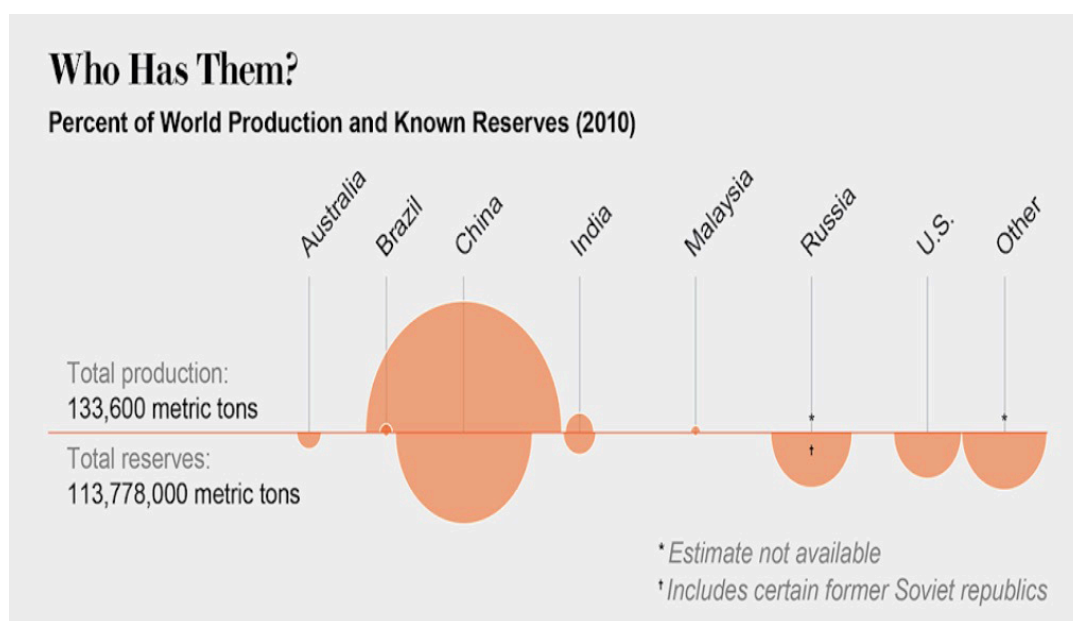
and subsequently, set up a process for more technology transfers. With articles pertaining to different types of IP like copyright, TRIPS aimed to ease trade tensions.

As applied to capacity building, how can IP regulation be improved both domestically and internationally to ease the process of building capacity while also maintaining the property rights of research institutions, governments, and individuals?

“The key question is to explore the potential contributions of the TRIPS for climate-environmental purposes, which requires cooperation between the WTO and the UNFCCC in order to ensure that a balance is struck between exclusivity and openness, private interest and public goals, producers and users, and rights and obligations” (Zhou).

CASE STUDY: THE RARE EARTH METAL SUPPLY CHAIN

One of the greatest bottlenecks for future renewable energy technologies could be the supply of rare earth metals (REMs). Rare earth metals, a group of 17 elements, are critical to many attractive renewable energy choices such as solar panels and wind turbines (Chandler). However, our modern supply chains may not be able to sustain the drastic increase in REM demand that a shift towards renewable energy would demand on top of the many other applications of REM such as smartphones, speakers, and other electronics. For instance, a recent MIT study found that neodymium demand could grow by 700 percent over 25 years and dysprosium by 2,600 percent, both of which are needed for wind turbines (Chandler). Thus, in pushing governments towards green technology, it is important to consider the supply of REMs available, costs involved, and other potential impacts in the pursuit of a stable REM supply.



Currently, the REM industry is dominated by China, which controls 97 percent of overall REM demand, including 100 percent of the previously mentioned dysprosium and the majority of

neodymium (Cho). While deposits do exist elsewhere in the world, the sparsity of REM ore means it takes a lot of mining before a sizable amount of ore is gathered, making the whole process very costly (Layne). Additionally, many environmental concerns over the mining process (which will be touched upon later) disincentivizes large scale mining in many parts of the world. However, this near monopoly of the REM market by China poses a threat of cutoffs of supply to the rest of the world, especially given the current rising tensions between Western countries such as the United States and China. China has threatened to cut off the supply in the past. In 2010, a dispute with Japan over the detention of a Chinese fishing captain led China to block REM exports to Japan (Bradsher). In 2019, during the US-China trade war, China threatened to cut off REMs to the United States (Layne). Such examples show that the supply of REMs may not be stable in the situation of similar geopolitical tensions in the future. When considering the technological barriers that countries may face during the creation of a climate change framework, many countries may resist the notion that their technologies will be completely dependent on a single supplier of a critical resource.

One of the main reasons China controls much of the REM supply chain even though REMs are found in many other places throughout the world is a decades long policy of perfecting the entire process, from mining to refining (Vekasi). Much of this investment was driven by industrial policies since the 1950s, which eventually allowed China to outcompete many other REM mining facilities. The Mountain Pass mine in the United States, which dominated the market prior to China, recently declared bankruptcy and shut down, and plants in Africa and Malaysia have not all been successful. So far no major competitor has managed to achieve the same degree of success and cost-efficiency that China has (Vekasi).

Another major barrier is the environmental impact of mining for REMs. Ironically, the process of mining for REMs that are critical for green technology is often destructive for the environment, and low-impact mining has been unprofitable in the past. For instance, in addition to Chinese competition, one of the factors contributing to the closure of the previously mentioned Mountain Pass mine was environmental scrutiny surrounding air and water pollution (Leal Filho). REM mining poses many risks including water contamination, radioactive waste, soil erosion, and ecosystem destruction (Leal Filho). Even if a climate change framework does manage to generate sufficient investment to boost REM mining for renewable energy technologies, there are many other considerations including communities that may be impacted by mining operations and the exacerbation of some of the environmental issues that renewable energy is trying to solve in the first place.

Fortunately, there are possible solutions to combating the threat of an unstable REM supply and the environmental impact of mining. One possibility is the recycling of REMs after use. Many of the smartphones, light bulbs, and magnets dumped as waste contain the REMs that are in demand, yet only 1% of rare earth manufacturing contains recycled materials. While it was long believed that recycling REMs from a complicated device, such as a smartphone, would be a very costly process, recent research suggests that it may be more energy efficient than mining in certain cases (Parletta). Alternatively, renewable energy could also find ways to abandon or decrease REM usage. In

response to the 2010 cutoff to Japan, Toyota and Honda developed hybrid car motors that reduced or eliminated the usage of REMs (Hsu). Still, many of these recycling initiatives and non-REM technologies are in their early stages, and such technologies may not be available to many other countries.

For the topic as a whole, concerns over the dependence of renewable energy technologies on REMs can open up a wide range of discourse on the most effective ways of developing a framework. In shifting dependence away from fossil fuels, many countries would be concerned over the sustainability of the supply chain used to rebuild their energy infrastructure. Thus, it is worth considering how a stable supply of REMs or any other critical resource can be guaranteed. Additionally, other resources or processes involved in the creation of renewable technology may have similar consequences for local communities and ecosystems, as seen in the case of REMs (Leal Filho). Especially in countries without strict regulations, private sector operations could disrupt drinking water supplies, create radioactive leakages, or destroy other resources. It is equally important to consider how the development of certain technologies could harm the well-being of communities. Ultimately, creating a technology-driven climate solution will require analysis of the many other impacts of shifting to new technology and investing in new supply chains.

SUMMARY OF IMPORTANT ISSUES REGARDING TOPIC B

Overcoming financial barriers to climate solution technologies like high capital costs and market share.
Using institutions to expand the infrastructure to support climate solution technologies like building roads and improve public access research.
Expanding intellectual property agreements to help facilitate technology transfers.
Understanding that despite financial investments, databases of best practices, and subsidiary committees dedicated to technology transfers and their implementation, the implementation of climate solution technologies are still not widespread.

QUESTIONS TO CONSIDER

- Question 1: What does your country’s NDC say about technological exchange? How does this inform your proposed solutions?
- Question 2: Does the polycentricity of the current international climate change regime promote or hurt capacity building for technology transfers?
- Question 3: What are the international IP law protections that are in place in your country? What needs to change for it to be more robust?

Question 4: What piece of climate change mitigation technology poses the greatest challenges when it comes to international governance?

Additional Resources and Research Support for Delegates

Researching can be a long and arduous process! It doesn't have to be!

Here are some tips & tricks to get you started:

- Read and annotate this document! Your chairs have put in a lot of time and effort into this document to point you in the right direction for the topics in committee!
- Read the full articles of the resolutions mentioned in this document! While some of the resolution text has been pasted into the topic synopsis, it would be wise to read the entirety of the relevant articles of the resolutions! It is dense and complicated at times but definitely important! These documents also provide the framework for what we expect for committee resolutions!
- Read the works cited documents! Where possible, we have opted for non-pay walled articles about this topic. The works cited provides a wonderful base of knowledge and often cite other relevant sources!
- Read Your Country's NDCs (bit.ly/lxixunfccc): Find your country's NDCs! While you do not necessarily need to read these dense (sometimes 70+ page) documents, it is great to get a sense of what climate issues your nation has listed as priorities and how they plan on reducing emissions in general.
- UNFCCC Committee Blog: this committee will be using the blogs to elevate your BMUN LXIX experience! We will be monitoring the blog for your questions and concerns so please feel free to use it! We will also be posting documents, news, and other media to support you in your research. This is also the place we will post important updates as topics evolve and post committee expectations as we get closer to conference. You can find the blog at bmun.org.

Here are some great resources to get started with:

- Interactive emissions chart (<https://www.wri.org/blog/2017/04/interactive-chart-explains-worlds-top-10-emitters-and-how-theyve-changed>): explore what countries are the top 10 emitters and what industries are the most polluting. What surprises you about some of these industries?
- *Plastic China* by Jiuliang Wang: This moving documentary follows the lives of two Chinese families working in a plastic sorting facility. This documentary was also cited as one of the reasons why China instituted Operation National Sword. You can find *Plastic China* on Amazon Prime and Kanopy.
- Instagram Brown Girl Green (@brown-girl-green): This instagram is an easy way to get fun graphics about waste and climate issues into your feed!

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