



AMIMUN'22

AMITY INTERNATIONAL MODEL UNITED NATIONS



PERSEVERANTIA OMNIA VINCIT

UNDP

BACKGROUND GUIDE

22ND - 23RD JANUARY 2022

**THE ROLE OF ENERGY ACCESS IN
INTERNATIONAL DEVELOPMENT EFFORTS**

LETTER FROM THE SECRETARIAT

Dear Delegates,

It gives us great pleasure to invite you all to the second e-Edition of Amity International Model United Nations, a two-day conference scheduled for January 22nd and 23rd, 2022. AMIMUN has established a name for itself on the international stage, as indicated by its status as one of Asia's top MUNs. AMIMUN delegates obtain a better understanding of the UN's inner workings by engaging in diplomatic debates and broadening their awareness of global relations.

Model United Nations allows students to stand up for what they believe in and create a mark on the world. This platform assists delegates in developing into future pioneers who are certain, determined, and energetic. It is hardly an exaggeration to say that MUN has formed us into the people we are today. We are recognized by the United Nations as a conference, and our collaboration with various international and national bodies such as the United Nations Educational, Scientific, and Cultural Organization (UNESCO), the UN Global Compact Network India, Fridays for Future Delhi, Youth for Peace International, the United Nations Population Fund, and PETA India allows us to further enhance the learning experience of the individuals taking part in the Conference.

By adhering to the theme of AMIMUN'22, "*Perseverantia Omnia Vincit: Perseverance Conquers All*" the AMIMUN family hopes to inspire delegates from all over the world, to foster powerful discussions that result in solutions, solutions that are borne out of a steel-like determination and perseverance to lead each debate to its rightful conclusion, and to ensure that delegates can navigate the diplomatic complexities that come with representing the agendas and resolutions they have crafted. It is a platform for legislators to conceptualize their opinions in the midst of the COVID-19 pandemic. Whether you are new to Model United Nations or a seasoned veteran, we are confident that you will have a beneficial engagement in the environment of learning that permeates each part of AMIMUN'22.

Please do not hesitate to contact us if you have any inquiries.

Regards,

The Secretariat

AMIMUN 2022

LETTER FROM THE EXECUTIVE BOARD

Dear Delegates,

Congratulations on getting an opportunity to participate in this MUN.

To the veterans of MUN, I promise you a very enriching debate that you've never experienced before and to the newcomers, I am excited to be a part of your maiden voyage. What we desire from the delegates is not how experienced or articulate they are. Rather, we want to see how she/he can respect disparities and differences of opinion, work around these, while extending their foreign policy so that it encompasses more of the others without compromising their stand, thereby reaching a unanimously acceptable practical solution.

The following pages intend to guide you with the nuances of the agenda as well as the Council. The Guide chronologically touches upon all the different aspects that are relevant and will lead to fruitful debate in the Council. It will provide you with a bird's eye view of the gist of the issue. However, it has to be noted that the background guide only contains certain basic information which may form the basis for the debate and your research. You are the representative of your allotted country and we hope that you put in wholehearted efforts to research and comprehensively grasp all important facets of the diversity agenda.

All the delegates should be prepared well to make the council's direction and debate productively. After all, only then will you truly be able to represent your country in the best possible way. We encourage you to go beyond this background guide and delve into the extremities of the agenda to further enhance your knowledge of a burning global issue.

May the force be with you!

Ahoy!

Co-Chairperson- Anuj Gandhi

Co-Chairperson- Amlan Panda

In this context, the Commission acts as a forum for:

1. The examination of science and technology questions and their implications for development;
2. The advancement of understanding on science and technology policies, particularly in respect of developing countries and;
3. The formulation of recommendations and guidelines on science and technology matters within the United Nations system



INTRODUCTION

Energy access is critical to all parts of social, economic, and environmental development. Access drives development creates jobs and reduces poverty while empowering women and disenfranchised communities to take control of their development. It provides light, mechanical power, process and space heating and power for transport. Users can utilize energy to achieve higher rates of return from previously owned assets, such as by irrigating agriculture fields or using productive tools like sewing machines after daylight. Nearly 1.4 billion people globally do not have access to electricity and nearly 3 billion people still depend upon traditional biomass heating and cooking fuels. Progress continues - nearly 200 million people gained access to electricity from 2010 to 2011 alone – but developing countries continue to face challenges to achieving universal access. Renewable energy becomes more important as the international community scales up efforts to achieve universal energy access. Modern renewable energy increases the quality and efficiency of necessities while decreasing the negative health side effects of traditional fuel usage. The effects are particularly significant for women and girls as they are primarily responsible for gathering fuel and cooking in many countries, thus limiting available time for school and enterprising activity and exposing them to higher rates of respiratory disease. Recent years have seen significant growth in the renewable share of global energy consumption; wind, solar, and hydropower accounted for half the additional electric capacity gained during 2011. The International Energy Association (IEA), an autonomous organization working to secure reliable, affordable, and clean energy for its 28 Member States, finds that every dollar currently invested in clean energy will generate three dollars in fuel savings by 2050.

Defining Sustainable and Renewable Energy

The IEA defines renewable energy as “energy derived from natural processes (e.g. sunlight and wind) that are replenished at a faster rate than they are consumed.” Common renewable sources include solar, wind, geothermal, hydro, and some forms of biomass. Many countries are increasingly relying on renewable energy as shown by recent growth rates: from 2007 to 2012, global wind power capacity grew an average of 25% and solar photovoltaic (PV) an average of more than 50%. Due to the available supply of wind and solar energy, some independent estimates find that producing all global power through wind turbines, solar panels, and geothermal, tidal, and rooftop PV installations would cost less per kilowatt-hour than utilizing fossil fuel and nuclear power.

THE ROLE OF ENERGY ACCESS IN INTERNATIONAL DEVELOPMENT EFFORTS

Energy access is critical to the achievement of the Millennium Development Goals (MDGs), which is the primary stated goal of the United Nations Development Programme (UNDP). The Programme holds that “poverty, energy, and environment are inextricably linked. Poverty reduction depends on the sustainable use of natural resources, and the sustainable use of natural and energy resources cannot be achieved without poverty reduction and accelerated progress towards to MDGs.” Energy access directly contributes to achieving all seven goals. It increases incomes and thus reduces hunger (MDG 1) through enabling micro-enterprises and increasing agricultural productivity; it supports education (MDG 2) by powering

schools, providing light for evening study, and reducing the time that is needed to gather traditional fuel, typically a task executed by women; and it contributes to gender equality (MDG 3) both by allowing girls to attend school and freeing time for women to engage in enteringprising activity. It contributes towards MDGs 4, 5, and 6 because energy improves health care by powering clinics, allowing for the refrigeration of drugs and vaccines, and it prevents disease related to the use of traditional solid fuels. The use of renewable and sustainable energy lastly addresses MDG 7 by promoting environmental sustainability through the reduction of forest degradation, soil erosion, air pollution, and emissions.

The Role of UNDP in Improving Access to Renewable Energy Since 1992, UNDP energy projects have expended over US \$4 billion and have included more than 2,500 off-grid energy projects. More than 10 million people gained energy access due to these efforts in the past decade alone.

UNDP focuses on “strengthening policy and institutional frameworks consistent with low-emission, climate-resilient development, mobilizing and expanding financing options aimed at achieving market transformation to catalyse public and private finance, and developing effective approaches for scaling up energy service delivery.” It provides a variety of services to do so and takes an integrated approach by assisting with capacity building to ingrate energy issues into policy, innovative investment and financing, and strategies for scaling up energy delivery. UNDP provides advisory and technical services, including documentation and dissemination of best practices, and encourages partnerships and coordination between national parties, donors, the UN Development Assistance Framework, UN Country Teams, and UNDP knowledge networks, as well as South-South Partnerships. Based upon past project experience, UNDP has identified several ways to move forward with universal energy access. It has called for a two-part action plan embracing both global awareness and significant ground investment in clean energy. To effectively scale up energy delivery, the Member States and private donors should establish and enhance energy institutions. Significant public investment can help overcome geographical issues that prevent central utility services and other traditional delivery services; public-private partnerships must play a critical role in project development and funding.

Sustainable energy for all

The availability of adequate, affordable and reliable energy services is essential for alleviating poverty, improving human welfare, raising living standards and ultimately achieving sustainable development. As global development challenges continue to be undertaken, it is increasingly recognized that the provision of adequate energy services has a multiplier effect on health, education, transport, telecommunications, water availability and sanitation. Consequently, energy is an important factor for achieving the Millennium Development Goals.

Securing “sustainable energy for all” involves the development of systems that support the optimal use of energy resources in an equitable and socially supportive manner while minimizing environmental impacts. Integrated national and regional infrastructures for energy supply, efficient transmission and distribution systems, as well as demand programmes that emphasize energy efficiency, are necessary for sustainable energy systems.

Universal energy access is essentially related to access to modern energy fuels that can replace traditional biomass consumption for cooking, heating and lighting. It also relates to access to electricity. Traditional biomass is solid biomass used in an unsustainable manner and includes fuelwood, agricultural waste and

animal dung. It usually represents the only available or affordable fuel to the poor in many developing regions. Worldwide about 2.7 billion people depend on traditional biomass for cooking of which 83 per cent live in rural areas. Modern or commercial biomass is produced sustainably and can be used for electricity generation, heat production and transportation.

The use of solid fuels and the lack of ventilation in households in developing countries are associated with very high levels of pollutants such as particulates, carbon monoxide, and formaldehyde. Women and young children represent the segments of the population with the highest exposure to these pollutants. Therefore, lack of or sufficient commercial energy use is correlated with high infant mortality, illiteracy, and with low life expectancy. It is estimated that about 1.45 million premature deaths occur each year from household indoor pollution due to inefficient biomass combustion. This corresponds to more than 4,000 deaths per day. Many of these premature deaths are young children and women.

Electricity has many uses and it is irreplaceable for several applications. Globally about 1.4 billion people live without electricity of which 85 per cent live in rural areas. Sub-Saharan Africa has the largest number of people (about 585 million) without electricity. Over 400 million people in India, mostly living in rural areas, also lack access to electricity. Electricity access in rural areas is restricted by the need for capital to extend the national electric grids and by the lack of available and affordable modern fuels that could be used for electricity generation.

Global energy systems

Global primary energy demand continued to grow in the last several years and amounted to 12,271 million tons of oil equivalent (MTOE) in 2008. The world still relies largely on oil, coal and gas (see Table 1). In 2008, over 80 per cent of the primary energy consumed was from fossil fuels with oil and coal accounting for about 60 per cent.

Major increases in world energy demand are expected to continue in the next decades, especially in developing countries. The accelerated demand for energy is resulting from rapid economic growth in emerging economies and projected increases in the world's population, from 6.7 billion in 2008 to 8.5 billion by 2035. The International Energy Agency (IEA) in its 2010 World Energy Outlook (WEO 2010) projects that global primary energy demand will grow to values ranging between 14,900 Mtoe and 18,000 Mtoe, depending on the scenario being considered. In the New Policies Scenario, which takes into account the broad policy commitments and plans that have been announced by many countries around the world, global primary energy demand will grow 36 per cent by 2035 and non-OECD countries will account for 93 percent of this increase. Fossil fuels maintain their central role in primary energy but their share declines 74 per cent in 2035. China accounts for 35 per cent of the global increase and India for 18 percent.

OVERVIEW OF NEW AND RENEWABLE SOURCES OF ENERGY

Status

The role of renewable energy in the global energy supply continues to increase in some world regions. The trends of the last decade and in particular of the last five years reflect strong growth in all the energy sectors, including power generation, heating and cooling, and transport fuels. Nevertheless, the overall contribution of new and renewable sources of energy to the global energy system remains very limited

Recent global events, such as the oil spill in the Gulf of Mexico in 2010 and the impact of the natural disasters in the Fukushima nuclear plant in Japan in 2011, highlight the importance of continuing to develop cost-competitive new and renewable sources of energy. In many countries, policymakers and the public and private sectors are becoming more supportive of global and national strategies to accelerate the deployment of renewable energy technologies and to expand their corresponding markets. These efforts are key to sustaining the transformation of the energy systems and to fueling the green economies of the future.

All types of hydropower are renewable energy, but references to “new renewable energy” usually include only small hydropower plants with capacities of less than 50 MW⁶. Small hydropower is considered critical for many developing countries and it is usually reported and tracked separately in policy and market contexts. Many financiers and development assistance agencies consider only small hydropower as eligible for renewable portfolio standards, feed-in-tariffs and tax credits. Also, many countries define renewable targets based on small hydropower to focus on the dynamic growth and features of markets for wind, solar, bioenergy, geothermal and other new renewable energy sources⁷

China is leading the world in installing new renewable energy capacity, followed by the United States. Other developing countries with relatively large capacities include Brazil, India and Turkey. In addition, China also has been leading in terms of growth in the last five years, followed by the Republic of Korea and Turkey. The industry is being supported in these countries by accelerated private investments, consistent and stable government energy policies and advances in technologies that are being translated into cost reductions.

The costs of some renewable energy technologies are now competitive with the costs of conventional energy technologies generally estimated to be 4-10 cents per kWh. Onshore wind, biomass and geothermal power generation are becoming competitive in some world regions. Biomass, some solar and geothermal is also competitive for hot water and heating, and ethanol for transportation. Most alternatives for off-grid applications in rural areas are still too expensive. The high costs of these technologies, in addition to other important development and transfer barriers, indicate the need for more support to promote renewable energy in rural areas.

Nevertheless, technology improvements and innovation are allowing a rapid downward trend in the costs of most renewable energy technologies. Solar photovoltaic modules per MW prices have fallen 60 percent since 2008. In some countries, solar has been reported to be competitive with other options in electricity retail prices. Wind turbine prices are also down 18 per cent since 2008¹⁰. The expectation is that this trend will continue.

The use of renewable energy also allows additional benefits that support the universal and national goals for sustainable development. One of the social areas in which renewable energy can provide added value is employment. Although some of the studies available differ on the magnitude of net employment generated,

investment in renewable energy has been shown to create two to three times more jobs than investment in conventional energy. Globally it is estimated that there are about 3.5 million direct jobs in renewable energy industries. In 2009 and 2010 about one million jobs were created by the renewable energy industry.

Another important area of extreme importance for sustainable development is water. Renewable energy technologies using dry cooling are not as vulnerable as conventional water-cooled thermal power plants (including nuclear plants) to conditions of water scarcity and climate change. The management of water resources represents a very important issue in sustainable development.

Prospects

• Investments

The market for new and renewable sources of energy is becoming very dynamic. Financing of global clean energy grew 30 per cent from 2009 to 2010 with investments totalling a record \$211 billion¹⁴. OECD countries and large emerging economies like China, India and Brazil are now becoming leaders with stable long term national policies attracting record investments. China's investment in clean energy in 2010 represents a record at \$48.9 billion and the highest followed by Germany and the United States (see Figure 5). The top investment in 2010 continued to be for wind power at \$94.7 billion followed by solar at \$26.1 billion.

Countries are following different strategies in their investments. The United States has the highest investment in venture capital, which is for the early stage of the technology development cycle intending to capitalize later. Europe has concentrated on stimulus for demand using regulatory policies such as feed-in-tariffs to meet targets, which promote renewable electricity generation. Asia is trying to capture the supply chain of technologies such as photovoltaic modules and wind turbines

• Renewable energy scenarios

Different institutions that provide projections for renewable energy in primary energy, final energy, electricity generation and electric generating capacity have developed a variety of long-term energy scenarios. The estimates vary greatly from shares in primary energy remaining at the same level they are now (around 13 per cent) throughout 2035 to 95 per cent by 2050.

The IEA in its WEO 2010 considers three scenarios: (1) Current Policies, (2) New Policies, and (3) 450 part per million (ppm). These scenarios project that, by 2035, renewable shares will range between 15 per cent and 26 per cent for primary energy, 23 per cent and 34 per cent for final energy, 23 per cent and 46 per cent for electricity generation and 31 per cent to 54 per cent for electricity capacity.

The IPCC in its 2011 special report on renewable energy indicated that a significant increase in the deployment of renewable energy by 2030, 2050 and beyond is shown in its scenarios. A contribution of the renewable energy share above 17 per cent in primary energy supply by 2030 and more than 27 per cent by 2050 is projected. The scenario with the highest share of renewable energy in total primary energy projects

43 per cent by 2030 and 77 per cent by 2050. The IPCC estimates that global cumulative renewable energy investments will be \$1.36 to \$5.1 billion up to 2020 and \$1.5 to \$7.2 billion for the decade 2021 to 2030

A 2011 WWF study concluded that the world can meet its energy demand by 2050 with a 95 per

cent share of renewable energy but that, although technically feasible, this would face difficult challenges. The scenario assumes significantly improved energy efficiency and expanded electrification as key to achieving this goal. A 2011 report by Pricewaterhouse Coopers (PwC), Potsdam Institute and IIASA evaluates progress in moving towards 100 per cent renewable electricity in Europe and North Africa by 2050. The 2011 IEA Blue High Renewable scenario projects 75 per cent of world electricity generation based on renewable energy.

PROMOTION OF NEW AND RENEWABLE ENERGY

Organizations of the United Nations system continue to support the promotion and expansion of new and renewable sources of energy in developing countries. Efforts during 2009 and 2010 have brought attention and awareness in particular to the important issue of universal energy access, energy efficiency and the promotion of new and renewable sources of energy. The United Nations Secretary General's Advisory Group on Energy and Climate Change (AGECC), created in 2009, called on the United Nations system and its Member States to support the goals of ensuring universal access to modern energy services and reducing energy intensity by 40 per cent by 2030

UN-Energy, the inter-agency mechanism of the United Nations system, continues to promote system-wide collaboration in the area of energy with a coherent and consistent approach. It is playing a pivotal role in promoting action and awareness of the importance of energy for sustainable development and is following up the work initiated by the AGECC. UN-Energy has been instrumental in defining three major goals to induce sustainable energy for all. The goals, defined to be achieved by 2030, include universal access to modern energy services, a 40 per cent reduction in overall global energy intensity and an increase in the share of renewable energy in primary energy to 30 per cent. UN-Energy is also promoting relevant activities supporting the General Assembly's resolution that declared 2012 as the "International Year of Sustainable Energy for All."

The United Nations Conference on Sustainable Development (UNCSD) or Rio+20 scheduled that took place in June 2012 will provide an opportunity to assess progress in the development and utilization of new and renewable sources of energy. The UNCSD has two major themes: the green economy in the context of sustainable development and poverty eradication, and the institutional framework for sustainable development. The role that renewable energy technologies will play in sustainable development and poverty eradication as well as the major challenges and barriers still faced by many developing countries in the effective adoption of these technologies will be an important part of the debate at UNCSD. Furthermore, UNCSD will represent an opportunity to establish global strategies for:

- (1) Expanding access to clean energy,
- (2) Enhancing energy efficiency
- (3) Accelerating worldwide deployment of renewable energy technologies.

International finance institutions

International financial institutions continue to play an important role in mobilizing resources for the promotion of new and renewable energy. The World Bank Group provided loans for the energy sector totalling \$13 billion during 2010. Lending for low-carbon energy projects and programmes reached a record of over \$5.5 billion. Since 2003, the World Bank Group has invested about \$17 billion in low-carbon projects, of which \$14.2 billion have been in renewable energy and energy efficiency. Excluding large hydropower, new renewable energy investment contributed \$4.9 billion.

In 2008, the World Bank established the Climate Investment Funds (CIF), which is a collaborative effort among multilateral development banks. As of 2010, contributors have pledged \$6.4 billion in new funds. The Clean Technology Fund, which is a component of the CIF, is designed to finance the scaling up of demonstration, deployment and transfer of clean technologies including renewable energy technologies. The first group of projects includes CSP, wind power, bus rapid transit and energy efficiency projects in 13 countries. Regional development banks are also playing a crucial role in promoting new and renewable sources of energy. The Inter-American Development Bank is planning to double its lending capacity for clean energy to \$3 billion annually by 2012. The African Development Bank has made rural electrification a major priority, along with renewable energy development and multi-national grid interconnections. Clean energy has to be one of the highest priorities of the Asian Development Bank with over 25 per cent of the total approved loans supporting projects with clean energy components. The energy policy of the Asian Development Bank has a target of annual lending for energy projects of \$2 billion by 2013.

Since 1991, the Global Environment Facility (GEF) has provided financing for projects totalling \$8.8 billion, with an additional \$38.7 billion in co-financing. In 2010, the GEF received a record finance boost from 30 donor countries of \$4.25 billion for climate change adaptation and mitigation for the next four years. By the end of 2009, GEF had invested \$1.1 billion in renewable energy initiatives in almost 100 developing countries and economies in transition with an additional \$8.3 billion in co-financing.

CURRENT PROGRESS

In declaring 2012 the “International Year of Sustainable Energy for All,” the UN General Assembly (2011) established—at the personal initiative of the UN Secretary-General—three global objectives to be accomplished by 2030. Those goals are to ensure universal access to modern energy services (including electricity and clean, modern cooking solutions), to double the global rate of improvement in energy efficiency, and to double the share of renewable energy in the global energy mix. Some 70 countries have formally embraced the Sustainable Energy for All (SE4ALL) initiative, while numerous corporations and agencies have pledged tens of billions of dollars to achieve its objectives. As 2012 drew to a close, the UN General Assembly announced a “Decade of Sustainable Energy for All” stretching from 2014 to 2024. Sustaining momentum for the achievement of the SE4ALL objectives will require a means of charting global progress over the years leading to 2030. Construction of the necessary framework has been coordinated by the World Bank/Energy Sector Management Assistance Program (ESMAP) and the International Energy Agency (IEA), in collaboration with 13 other agencies (see logos on final page). The process has benefited from public consultation with more than a hundred stakeholder groups.



CONCLUSION

The greatest challenge comes when a society is asked to move from addressing tangible current needs to taking actions for the sake of future generations. Such a move in the face of contesting short-term interests entails a major reformulation in the approach to Renewable Energy Technologies (RETs). The latter requires a new global consensus, fundamentally the development of a new energy paradigm estranged with accomplishing sustainable development. This, in turn, needs to be reproduced in international, regional and national priorities. For such a shift to occur, the sustainability debate urges higher public awareness, information, and commitment. If public support for sustainable energy development is not approaching its materialization, it will be exceptionally difficult to implement many of the policies discussed above. Realizing a truly sustainable energy system calls for technological breakthroughs that drastically alter how we produce and use energy.

In this regard, the pace of RETs development and deployment is key to achieving a more economically, socially and environmentally sustainable global energy system in the long term. In this spirit, governments must act determinedly to accelerate the transition to modern fuels and to disrupt the vicious circle of energy poverty and low living conditions. Under this scenario, the CSTD – along with international donors and civil society advocates – should act as a catalyser for increasing access to clean and renewable energy, and facilitating the development, transfer and diffusion of renewable energy technologies. Moreover, the CSTD represents an important intergovernmental forum for calling on the Member States to provide an enabling environment, which would, in turn, encourage private and public sector initiatives in the generation and utilization of new and emerging energy technologies. In this regard, what specific steps can the CSTD Member States take to ensure that energy policy planning is not conducted separated from sustainable development? How can energy and environmental policymaking be integrated more closely? To what extent can renewable energy sources meet the growing energy needs of your region?

QUESTIONS TO CONSIDER

1. How can research be conducted on new renewable sources of energy?
2. How is sustainable development and the promotion of renewable sources of energy interrelated? What role do international institutions play in promoting renewable sources of energy? How can we evaluate the number of renewable sources of energy required?
3. How can renewable sources of energy be used by nations to promote sustainable development? What are the ways in which the world can be less dependent on oil?
4. How can the world shift to renewable sources of energy by disturbing the global economy at the minimum level?

