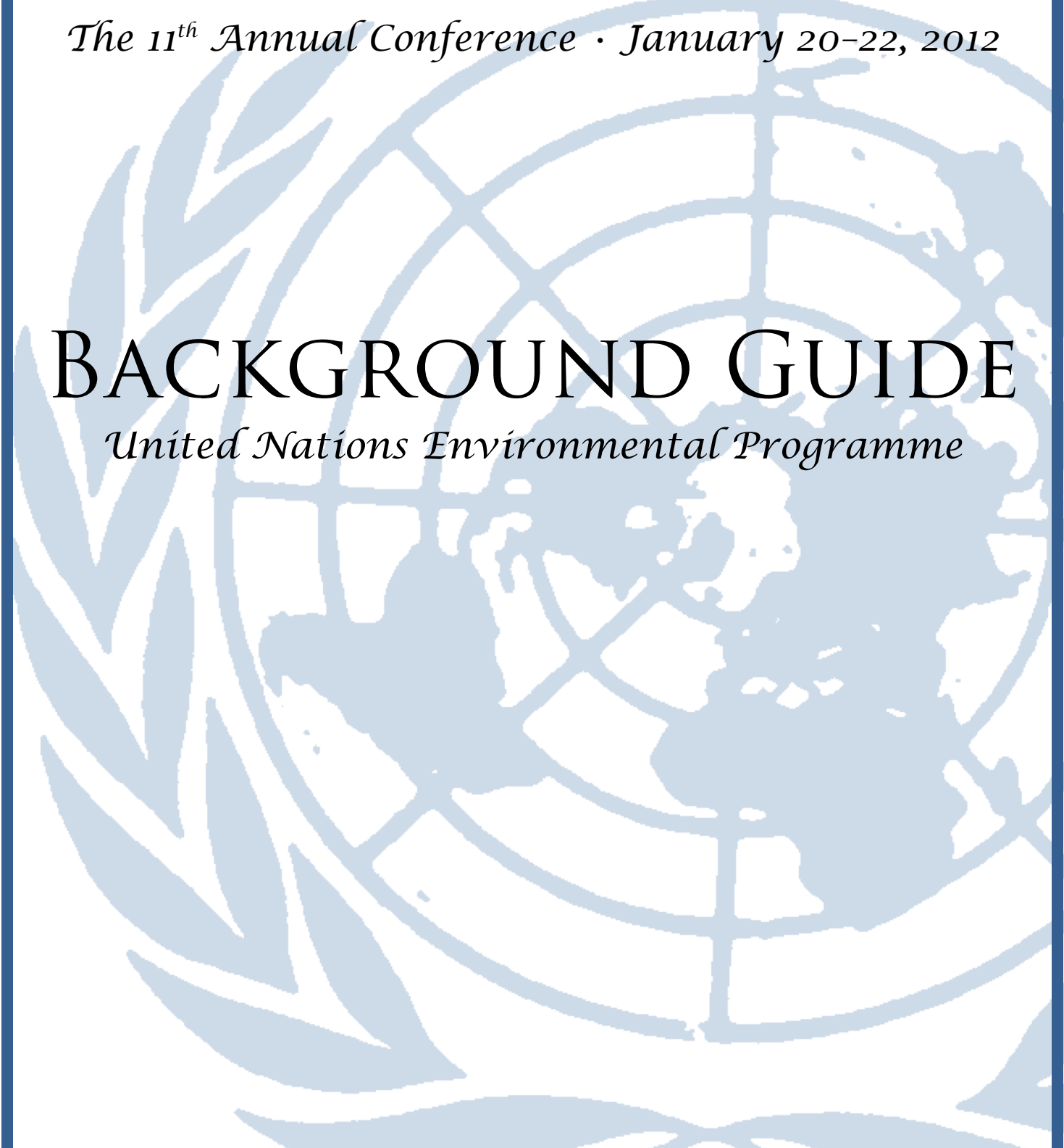


VANCOUVER MODEL UNITED NATIONS

The 11th Annual Conference · January 20-22, 2012

BACKGROUND GUIDE

United Nations Environmental Programme





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Dear Delegates,

My name is Marco Wong and it brings me joy to serve as director for the United Nations Environmental Programme at Vancouver Model United Nations 2012. I am currently attending Semiahmoo Secondary in South Surrey as a grade 12 student and have discovered a keen interest for world politics. My first ever conference as a delegate was actually here at VMUN 2010, two years ago, and I attended as a delegate again last year because I appreciated the high level of debate; hopefully you too will enjoy this committee, regardless of the amount of experience you have.

I hope that you will enjoy debating on the two topics for this committee that my staff and I have chosen; both are extremely relevant to the ever-changing world that we live in. The two topics of discussion in UNEP this year will be: Marine and Coastal Ecosystems and Sustainable Energy in Developing Countries.

In Topic A, Marine and Coastal Ecosystems, you will have to examine the numerous concerns related to these environments, especially at a time when climate change seems inevitable. Delegates are encouraged to think creatively about relevant issues relating to these ecosystems when doing their research; the BP oil spill crisis in the Gulf Coast might be a good place to start. Topic B, Sustainable Energy in Developing Countries will be challenging as it could polarize the committee, splitting between the more economically developed and the less economically developed nations. While the UN has hosted number of summits dedicated to tackling the issue of the enhanced greenhouse gas effect, nothing concrete has yet been established. Delegates are encouraged to think about how a solution agreeable to all nations might be achieved; a good place to start would be to look at previous documents such as the Cancun Accord and the Copenhagen Accord, and the Kyoto Protocol.

While this is an environmental committee, there are a number of aspects to these issues that transcend simply that, and it is up to delegates to find a resolution that benefits all. I wish you the best of luck in your research and look forward to hearing some top-notch, stimulating debate.

Best Regards,

Marco Wong
Director, United Nations Environmental Programme

Topic B: Sustainable Energy in Developing Countries

Introduction

Sustainable energy entails renewable energy and energy efficiency, and is seen as a way to provide ample energy to the current human generation without compromising future generations. Sustainable energy differs from terms such as “green energy” because the ultimate goal of sustainable energy is not to stop pollution, but rather to have energy-production methods that will not impact the environment to such a degree that they can no longer be utilized.

The International Energy Agency typically divides sustainable energy into three “generations.” The first generation emerged towards the end of the 1800s and includes hydropower and geothermal power. Hydroelectric dams are often used for hydropower, and this technology is often praised for producing relatively few emissions. Despite their problems, such as displacing people and producing large amounts of CO₂ emissions during construction, hydropower dams are becoming increasingly popular in Asia and particularly in China, currently the largest producer of hydroelectricity in the world. Geothermal energy can operate 24 hours a day, but can only be harnessed in abundance in certain regions including the United States, Central America, Indonesia, East Africa, and the Philippines. In addition, fluids drawn from the deep earth (like CO₂) may contribute to acid rain and climate change. There is also a certain risk in pursuing this technology, as it involves drilling and exploration — even in the United States, there still is a 20% failure rate when conducting these geothermal-energy explorations. Technology is also currently being developed to provide geothermal energy in places previously unable to do so; however, it is unlikely that this technology can be cheaply adapted in developing countries.

Second-generation technologies include solar power and wind energy and are widely promoted because of their environmental benefits. These technologies are not as well-established as the first generation, but are entering markets. Some limiting factors may be a lack of adequate sunlight and wind in certain regions, not to mention the high costs of these technologies. Nevertheless, use of second-generation sustainable-energy technologies are rapidly growing in Brazil, China, Argentina, Costa Rica, and many other developing countries.

Third-generation technologies are still under development. Many of these advanced technologies include advanced biomass gasification, concentrated solar thermal power, Hot Dry Rock geothermal power, and tidal energy. These technologies still require extensive research, and their costs will most likely hinder developing countries from utilizing them.

Importance of Sustainable Energy

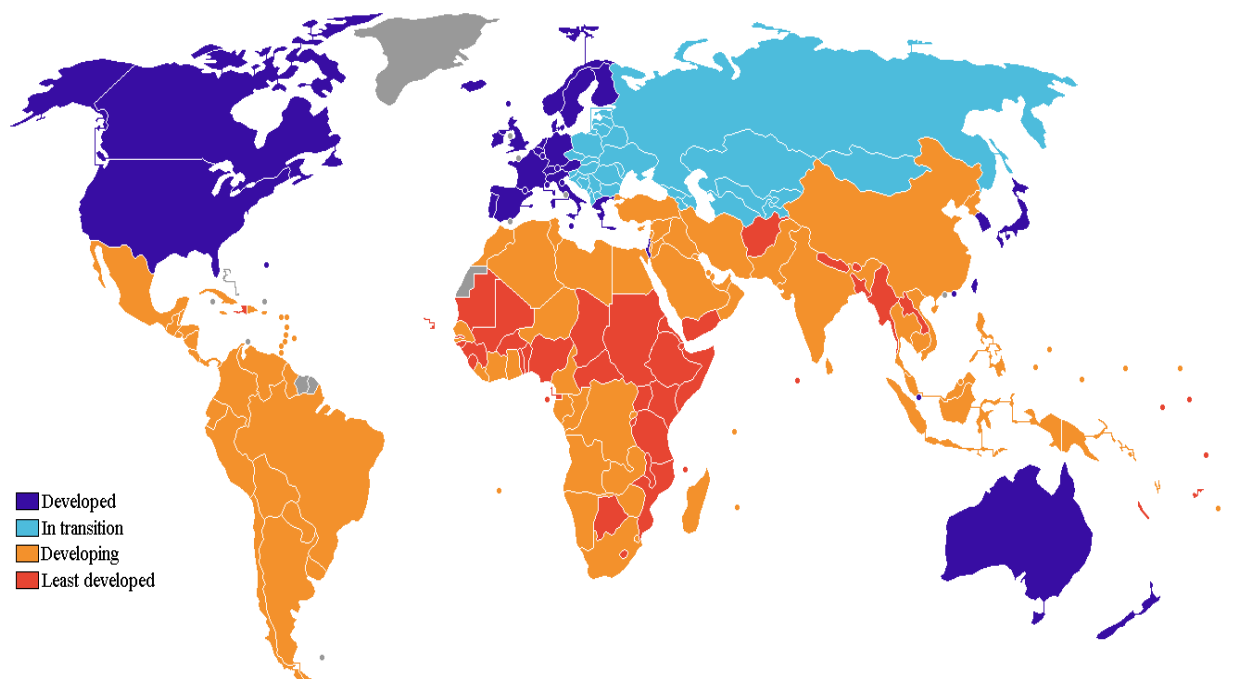
Sustainable energy can often be a good choice for developing countries because the transmission of fossil fuels can be expensive. Sustainable energy can also be used for poverty alleviation by creating business and employment. Renewable energy also prevents prolonged exposure to carbon monoxide from indoor biomass heating — according to the WHO, over 2.4 million people currently die or suffer from diseases prematurely due to carbon monoxide.

Success Stories

According to the Renewables 2010 Global Status Report, 45 developing countries have renewable energy targets. Much attention is focused on China, India and Brazil for their developments. A particularly popular strategy is the “feed-in-tariff,” which is a guarantee that renewable energy companies will be able to sell the electricity they generate at a price set beforehand by the government. Over 78 countries and states have adopted this strategy.

Barriers

The key factor that hinders the development of new technologies is cost. Clean power technologies are not yet at full price parity with fossil fuels, so even good policies may force poor citizens to pay an additional cost. Even with good policies, developing countries often do not have sufficient domestic investment capital. It is important for international bodies, like the World Bank, to step in here to provide financial mobilization. In addition, many developing countries do not have full access to data and methodologies. More information on the specific cost of implementing renewable energy must be made readily available. Managing a national grid with multiple sources of energy is also a challenge. Countries need able engineers who can install, maintain, and manage grids.



Timeline

- 200 BC — Europeans harness power using water mills.
- 1860 — The first solar power system is developed in France.
- 1888 — The first windmill to generate electricity is opened.
- 1921 — The world’s first geothermal power plant is built.
- 1957 — The first commercial nuclear plant opens.
- 1970s — The cost of solar cells is lowered and becomes more widespread.

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1992 — Brazil's first wind turbine is built.

2007 — 17% of China's energy is renewable.

2009 — 85.4% of Brazil's energy is renewable.

Historical Analysis

Ever since the Industrial Revolution, as machines took the place of humans and animals and as mass production became the popular trend, energy has been in demand. Those who had access to energy profited more and grew stronger economically. Those who did not have access or had relatively little access to plentiful sources of energy either weakened or remained stagnant economically. This caused a widening in the wealth gap between the rich and the poor, where the advantaged became richer and the disadvantaged became poorer.

The main source of energy relied on for the economic boom for numerous countries as time progressed were the fossil fuels. Relatively cheap and easy to obtain, fossil fuels such as coal, natural gas, and oil were used by the majority to maximize profits. For the most part, this method worked, as more economically-developed countries like the United States became powerhouses on the international stage. However, what was overlooked during this process was the impact on our environment. Although for a long time environmental concerns were cast aside and sacrificed for economic growth, the effects began to be clear in the form of, for instance, acid rain and global warming.

In 1988, the Intergovernmental Panel on Climate Change was created to research climate change and to create a list of recommendations for member nations in the United Nations to follow. Following this were numerous "Conference of the Parties" meetings, in which nations from around the world gathered to discuss individual and collective goals to be met by certain dates. For instance, after the Kyoto protocol, Canada committed to reducing greenhouse gas emissions of 1990 levels by 25% by 2020 and by 80% by 2050. Similarly, numerous other countries also made verbal commitments to reduce their emissions in order to combat the global environmental threat.

Although countries are researching renewable technologies, subsidizing wind, solar, hydro, geothermal, and biomass development, the majority of the world's energy still comes from fossil fuels. As a result, 21 out of 38 industrialized countries are not expected to meet their Kyoto targets. Canada is 32% above their target, New Zealand; 22%, United States; 22% and Japan; 20%. Nonetheless, because nothing legally binding was instituted, countries were not legally obligated to meet their commitments; in fact, the United States withdrew in 2001 from their original agreement without facing any consequences. Meetings that followed in Copenhagen and Cancun did not produce any legally-binding agreements either.

Current Situation

Non-profit organizations and other environmentalists have criticized the apathetic attitude and apparent complacency of many countries with regards to meeting their targets, and are urging concrete action to combat climate change.

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In response, a new approach has been thought up; countries may reduce emissions in other countries via sustainability projects, and substitute those results in for cutting emissions in their own country. This method allows developed countries to continue polluting in their own region so long as they clean up elsewhere. As of July 21, 2008, there are 1128 registered projects, reducing the equivalent of approximately 220 million tons of carbon dioxide each year.

To the industrialized countries this is a double victory, as they get to continue their environmentally-damaging actions while meeting their commitments, helping other countries, and gaining a positive public image in the eyes of the world. Although these countries are developed and economically sustainable, many among them fear that they will lose their economic power and be overtaken by smaller nations, especially in an age where newly-industrialized countries such as China, India, Brazil and South Africa are racing to the top at a rapid pace. To many, it seems only fair that every country move away from fossil fuels rather than what many developing nations suggest — that the more economically developed lead the green movement.

To those less economically-developed countries, though, having developed nations reduce emissions in their territory is less beneficial. Although developed nations can now look to address the environmental concerns, they may not have the privilege to do so. Countries struggling to meet the needs of their population and trying to grow economically need to continue to use fossil fuels for cost-efficient energy. Using renewable sources of energy involves spending money that they do not have access to. Until they become industrialized like other countries around the world, the environment will always be of secondary concern. Another point often made is that the developed nations of today got to where they are by using fossil fuels; thus it would be unfair for these same countries to try to ban the use of fossil fuels for economic growth. If the plan was to reduce the use of fossil fuels, developing and undeveloped countries often feel that it would have to be those who relied on this technology to show them the way.

Because of these links, and a number of other internal factors that delegates should research, UN member nations find themselves in a deadlock. The task at hand for delegates is to find solutions that can be implemented by all countries: those that are developed, those that are on the verge of development, and even those that are far from economic sustainability. Although there may be ideas around the Internet suggesting what can be done to solve this dilemma, no comprehensive solution has yet to be found, which means that this issue remains unsolved by the world even now. Delegates are urged to think innovatively and creatively, to research potentially groundbreaking solutions that are only recently bearing fruit, and to ponder the potential implications of the various roads for all nations. It is up to the delegates of VMUN 2012's UNEP to solve what no agreement or treaty has been able to up till now.

UN Involvement

1. The establishment of the Clean Development Mechanism (CDM) from the Kyoto Protocol under Article 12:
 - i. Allows “a country with an emission-reduction or emission-limitation commitment under the Kyoto Protocol (Annex B Party) to implement an emission-reduction project in developing countries.”

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- ii. States that one of the CDM's goals is to "stimulate sustainable development and emission reductions."
2. The United Nations General Assembly resolution A/RES/64/206 adopted in March 11th 2010:
 - i. "*Calls upon* governments to take further actions to mobilise the provision of financial resources... to developing countries and countries with economies in transition..." to aid the development of sustainable energy.
3. The United Nations Development Programme (UNDP)'s various regional projects in attempting to provide and develop sustainable energy, such as:
 - i. MLW/98/007, the *National Sustainable and Renewable Energy Programme* project in Malawi in year 2000.
 - ii. And the *National Strategy and Action Plan on New and Renewable Energies* (NER/02/M04) in Niger, which had cost more than US\$222,300.
 - iii. The GLO/96/109 *Sustainable Energy Global Programme* of 1996.
4. The Johannesburg Plan of Implementation III, changing unsustainable patterns of consumption:
 - i. Article 20 (n): "to provide financial resources to developing countries, in particular least developed countries and small island developing States, to meet their capacity needs for training, technical know-how and strengthening national institutions in reliable, affordable, economically viable, socially acceptable and environmentally sound energy, ... renewable energy and advanced energy technologies".
 - ii. Article 19 (a): "Provide support for the development of sustainable development strategies and programmes, including in decision-making on investment in infrastructure and business development".

Possible Solutions & Controversies

Currently, there exist many alternative energy sources that are much more sustainable and better for the environment than are commonly-used sources such as natural gases, fossil fuels, and the like. Although these alternative sources of energy may seem to be the obvious solution for our problem, a major setback in the implementation of sustainable energy in developing nations is the lack of economic means with which to begin such a program. During this conference, delegates should focus on not only finding other means of sustainable energy, but also ways to make these means fiscally viable to the developing countries that may also be suffering from poverty and other socio-economic issues.

One type of energy commonly used in lieu of other, less environmentally friendly types is hydropower. Hydroelectricity is derived from a system in which falling or running water creates energy. This energy then powers a turbine connected to a generator, which converts the mechanical energy provided by the movement of the water to electricity. Although hydropower is especially helpful to smaller rural communities, which may have resorted to diesel power if it were not for hydroelectricity, larger projects often cause damage to local water systems and must be extremely carefully planned.

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A second type of sustainable energy is wind power. Wind power is similar to hydropower in that both systems have mechanical energy converting into electricity that we can use in our daily lives. However, wind power, instead of using water, uses energy from the air to power the turbines built in large fields, otherwise known as “wind farms”. Depending on the area, wind power is relatively efficient and effective, as well as having almost negligible environmental impact. However, wind power is difficult to implement because of the visual effect on the landscape that may deter many citizens from accepting it; in addition, the cost of building the turbines has escalated with the efficiency of the machines. Currently, the continent of Europe holds 48% of all the world’s wind farms.

Another interesting and more controversial alternative to fossil fuels is biomass energy. Biomass is essentially the conversion of renewable organic material to usable energy. A few examples of organic material used in biomass energy are animal waste, agricultural residue and municipal waste. This system, which utilizes the principles of photosynthesis, releases an equal amount of carbon dioxide into the atmosphere as the burning of fossil fuels, but does not contribute as much to greenhouse gases because the carbon dioxide released by biomass is different from that of the fossil fuels, and can be neutralized by other gases in the air. In addition, biomass is completely renewable, since the amount of waste expended by society will always be available to consume as energy. Unfortunately, biomass energy requires a huge input of time and money, and in order to make sure the system is environmentally friendly care must be taken; consequently many steps are needed and the process may become too complicated.

Alternative energy programs in developing countries have had much difficulty, because of two key factors that impede their growth. For one, cost is a huge factor, even more so for these nations those do not have a lot of money at their disposal. Even though these energy systems are highly sustainable in terms of energy, they are not as viable in terms of cost of implementation and yearly upkeep. Since the cost is so difficult to maintain, it is then a concern that as it becomes harder and harder to pay the costs, safety regulations may not be met, which would cause danger to the community supplied with the energy in the first place. To attempt to meet the costs, developing countries would most likely need to accept aid from outside agencies, such as non-governmental groups or other nations. However, this may lead to even more complications related to tied aid or other conditions.

In addition, some types of sustainable energy may be considered less efficient than the burning of fossil fuels, or the usage of natural gas. At the moment, wind power or solar power, even at their greatest efficiency, still cannot compare with the energy produced by less sustainable sources. Because of this, some developing countries remain reluctant to invest in sustainable energy that does not compare to the current system’s efficiency.

Bloc Positions

Major developing countries currently committed to implementing new sustainable energy programs include Brazil, which is described as a bio-energy superpower because it produces a massive amount of sugar-cane ethanol; China, one of whose goals include energy security on the way to economic stability; and India, which has dedicated an entire branch of its government (the Ministry of New and Renewable Energy) to this issue. Other developing countries that have declared themselves in support of sustainable energy include Pakistan, Ethiopia, Kenya, Costa Rica, Georgia, and Jordan.

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Nonetheless, due to the economic implications of turning to sustainable energy, numerous countries still consider the environment as a secondary to more imminent issues.

Discussion Questions

1. How can international bodies, such as the UNEP and World Bank, help developing countries increase their sustainable energy usage?
2. What are the barriers to increased development of renewable energy in the developing world and how can these issues be addressed?
3. Which policies have been seen to be most effective in developing countries and how can they be replicated in other countries?
4. Should developing countries put priority on renewable energy even with additional costs?
5. Which types of sustainable energy would be most effective for your specific country?

Additional Resources

<http://www.unep.org/ecosystemmanagement/UNEPsWork/MarineandCoastalEcosystems/tabid/513/Default.aspx>

United Nations Environmental Programme

<http://unfccc.int/2860.php>

United Nations Framework Convention on Climate Change

<http://www.un.org/esa/sustdev/sdissues/technology/est4.htm>

United Nations – Division for Sustainable Development

<http://www.ewb-international.org/>

Engineers Without Borders

<https://www.cia.gov/library/publications/the-world-factbook/>

CIA Factbook

Sources

<http://www.cges.co.uk/resources/articles/2010/11/19/the-cancun-agreement-and-the-copenhagen-accord>

<http://www.conserve-energy-future.com/>

<http://www.unep.org/resourceefficiency/>

http://alternativeenergy.procon.org/view.resource.php?resourceID=002475#1900_1950

http://www.iea.org/papers/2006/renewable_factsheet.pdf

http://www.rsc.org/delivery/_ArticleLinking/DisplayHTMLArticleforfree.cfm?JournalCode=EE&Year=2009&ManuscriptID=b809990c&Iss=Advance_Article

<http://www.forbes.com/sites/evapereira/2011/01/12/developing-countries-will-lead-global-growth-in-2011-says-world-bank/>

<http://www.wri.org/stories/2010/12/qa-policies-renewable-energy-developing-countries>

http://www.usaid.gov/publications/pdf/renewable_energy.pdf

<http://www.pembina.org/re/sources/hydro-power>

http://en.wikipedia.org/wiki/Wind_power#Economics

<http://www.biomass.net/>

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http://www.economist.com/blogs/democracyinamerica/2010/04/climate_change_and_developing_countries

<http://www.renewableenergyworld.com/rea/news/article/2010/03/developing-nations-eye-renewable-energy>

<http://www.renewableenergyfocus.com/view/9112/sustainable-energy-for-developing-countries/>

http://en.wikipedia.org/wiki/Renewable_energy_in_developing_countries

http://unfccc.int/kyoto_protocol/mechanisms/clean_development_mechanism/items/2718.php

<http://unbisnet.un.org:8080/ipac20/ipac.jsp?session=13G5S604H6041.76185&menu=search&aspect=subtab124&npp=50&ipp=20&spp=20&profile=bib&ri=4&source=%7E%21horizon&index=.SW&term=Sustainable+energy+in+developing+countries&aspect=subtab124&x=21&y=7#focus>

<http://www.undp.org/energy/projects/africa.htm>

<http://www.undp.org/energy/projects/global.htm>

http://www.un.org/esa/sustdev/documents/WSSD_POI_PD/English/POIChapter3.htm