

Rotaract Global
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The Economic and Social Council

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Letter from the Dias

Dear Delegates,

Congratulations on getting the opportunity to participate in Rotaract Global MUN 2017. To the veterans of MUN, I promise you a very enriching debate that you've never experienced before and to the newcomers, I am really 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 own foreign policy so that it encompasses more of the others without compromising their own 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 it is our hope that you put in wholehearted efforts to research and comprehensively grasp all important facets of the diverse agenda.

All the delegates should be prepared well in order to make the council's direction and debate productive. 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!

Regards,

THE EXECUTIVE BOARD

UNITED NATIONS ECONOMIC AND SOCIAL COUNCIL

ROTARACT GLOBAL MODEL UN, 2017

Introduction to the Committee

The Economic and Social Council is at the heart of the United Nations system to advance the three dimensions of sustainable development – economic, social and environmental. It is the central platform for fostering debate and innovative thinking, forging consensus on ways forward, and coordinating efforts to achieve internationally agreed goals. It is also responsible for the follow-up to major UN conferences and summits.

The UN Charter established ECOSOC in 1945 as one of the six main organs of the United Nations.

Coordination within the UN

ECOSOC links a diverse family of UN entities dedicated to sustainable development, providing overall guidance and coordination. The entities include regional economic and social commissions, functional commissions facilitating intergovernmental discussions of major global issues, and specialized agencies, programmes and funds at work around the world to translate development commitments into real changes in people's lives. Reforms over the last decade, particularly General Assembly resolution 68/1, have strengthened ECOSOC's leading role in identifying emerging challenges, promoting innovation, and achieving a balanced integration of the three pillars of sustainable development—economic, social and environmental. ECOSOC is charged with giving special attention to coordinated follow-up on major UN conferences and summits.

Partnership with the rest of the world

Building on its coordination role within the UN system, ECOSOC is a gateway for UN partnership and participation by the rest of the world. It offers a unique global meeting point for productive dialogues among policymakers, parliamentarians, academics, foundations, businesses, youth and 3,200+ registered non-governmental organizations.

A spotlight on global issues

Each year, ECOSOC structures its work around an annual theme of global importance to sustainable development. This ensures focused attention, among ECOSOC's array of partners, and throughout the UN development system.

By emphasizing combined economic, social and environmental concerns, ECOSOC encourages agreement on coherent policies and actions that make fundamental links across all three.

ECOSOC's annual High-Level Segment includes:

- High-Level Political Forum provides political leadership, guidance and recommendations for sustainable development, and reviews progress in implementing sustainable development commitments.
- Development Cooperation Forum reviews trends and progress in development cooperation.

Other sessions encompass:

- Integration Segment promotes integrated actions on economic, social and environmental issues, within the United Nations system and beyond.
- Humanitarian Affairs Segment strengthens coordination of UN humanitarian efforts.
- Operational Activities for Development Segment provides overall guidance for UN funds and programmes.
- Coordination and Management Meeting reviews reports of ECOSOC subsidiary and expert bodies; promotes UN system coordination on development issues; and considers special country or regional concerns.
- Youth Forum brings youth voices into discussions on global policy-making on development issues of the day.
- Partnership Forum encourages collaboration among Governments, businesses and foundations, non-governmental organizations, academia and Parliamentarians.
- Special meetings to address global development emergencies or crises, to raise awareness and to serve as a high level policy platform for coordination of actors working on a specific situation.

AGENGA ITEM 1:

Economic and social challenges in achieving Sustainable Development Goal 9 (Industrial Development) with special focus on economically developing nations.

Introduction to Agenda Item 1

In the era of rapid expansion of industry, we are missing the key point of saving our environment in the process. Multinational businesses and corporations are investing billions in rapid industry expansion, most of which are direct funding sources for the UN. Fossil fuels are extensively used and the society is used to the existing technology. Keeping the Agenda 2030 in mind, how challenging would it be for nations to achieve total renewable energy usage and sustainable consumption of natural resources.

Goal 9 encompasses three important aspects of sustainable development: infrastructure, industrialization and innovation. Infrastructure provides the basic physical systems and structures essential to the operation of a society or enterprise. Industrialization drives economic growth, creates job opportunities and thereby reduces income poverty. Innovation advances the technological capabilities of industrial sectors and prompts the development of new skills.

Investment in infrastructure and innovation are crucial drivers of economic growth and development. With over half the world population now living in cities, mass transport and renewable energy are becoming ever more important, as are the growth of new industries and information and communication technologies.

Technological progress is also key to finding lasting solutions to both economic and environmental challenges, such as providing new jobs and promoting energy efficiency. Promoting sustainable industries, and investing in scientific research and innovation, are all important ways to facilitate sustainable development.

More than 4 billion people still do not have access to the Internet, and 90 percent are from the developing world. Bridging this digital divide is crucial to ensure equal access to information and knowledge, as well as foster innovation and entrepreneurship.

The Sustainable Development Agenda

On 1 January 2016, the 17 Sustainable Development Goals (SDGs) of the 2030 Agenda for Sustainable Development — adopted by world leaders in September 2015 at an historic UN Summit — officially came into force. Over the next fifteen years, with these new Goals that universally apply to all, countries will mobilize efforts to end all forms of poverty, fight inequalities and tackle climate change, while ensuring that no one is left behind.

The SDGs, also known as Global Goals, build on the success of the Millennium Development Goals (MDGs) and aim to go further to end all forms of poverty. The new Goals are unique in that they call for action by all countries, poor, rich and middle-income to promote prosperity while protecting the planet. They recognize that ending poverty must go hand-in-hand with strategies that build economic growth and addresses a range of social needs including education, health, social protection, and job opportunities, while tackling climate change and environmental protection.

While the SDGs are not legally binding, governments are expected to take ownership and establish national frameworks for the achievement of the 17 Goals. Countries have the primary responsibility for follow-up and review of the progress made in implementing the Goals, which will require quality, accessible and timely data collection. Regional follow-up and review will be based on national-level analyses and contribute to follow-up and review at the global level.

What is sustainable development?

- Sustainable development has been defined as development that meets the needs of the present without compromising the ability of future generations to meet their own needs.
- Sustainable development calls for concerted efforts towards building an inclusive, sustainable and resilient future for people and planet.
- For sustainable development to be achieved, it is crucial to harmonize three core elements: economic growth, social inclusion and environmental protection. These elements are interconnected and all are crucial for the well-being of individuals and societies.

- Eradicating poverty in all its forms and dimensions is an indispensable requirement for sustainable development. To this end, there must be promotion of sustainable, inclusive and equitable economic growth, creating greater opportunities for all, reducing inequalities, raising basic standards of living, fostering equitable social development and inclusion, and promoting integrated and sustainable management of natural resources and ecosystems.

Are the Sustainable Development Goals legally binding?

- No. The Sustainable Development Goals (SDGs) are not legally binding.
- Nevertheless, countries are expected to take ownership and establish a national framework for achieving the 17 Goals.
- Implementation and success will rely on countries' own sustainable development policies, plans and programmes.
- Countries have the primary responsibility for follow-up and review, at the national, regional and global levels, with regard to the progress made in implementing the Goals and targets over the next 15 years.
- Actions at the national level to monitor progress will require quality, accessible and timely data collection and regional follow-up and review.

How will the Sustainable Development Goals be implemented?

- The Addis Ababa Action Agenda that came out of the Third International Conference on Financing for Development provided concrete policies and actions to support the implementation of the new agenda.
- Implementation and success will rely on countries' own sustainable development policies, plans and programmes, and will be led by countries. The Sustainable Development Goals (SDGs) will be a compass for aligning countries' plans with their global commitments.
- Nationally owned and country-led sustainable development strategies will require resource mobilization and financing strategies.
- All stakeholders: governments, civil society, the private sector, and others, are expected to contribute to the realisation of the new agenda.
- A revitalized global partnership at the global level is needed to support national efforts. This is recognized in the 2030 Agenda.

- Multi-stakeholder partnerships have been recognized as an important component of strategies that seek to mobilize all stakeholders around the new agenda.

Sustainable Development Goal 9

Investments in infrastructure – transport, irrigation, energy and information and communication technology – are crucial to achieving sustainable development and empowering communities in many countries. It has long been recognized that growth in productivity and incomes, and improvements in health and education outcomes require investment in infrastructure.

Inclusive and sustainable industrial development is the primary source of income generation, allows for rapid and sustained increases in living standards for all people, and provides the technological solutions to environmentally sound industrialization.

Technological progress is the foundation of efforts to achieve environmental objectives, such as increased resource and energy-efficiency. Without technology and innovation, industrialization will not happen, and without industrialization, development will not happen.

GOAL 9 TARGETS

- Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all.
- Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries.
- Increase the access of small-scale industrial and other enterprises, in particular in developing countries, to financial services, including affordable credit, and their integration into value chains and markets.
- By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities.

- Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending.
- Facilitate sustainable and resilient infrastructure development in developing countries through enhanced financial, technological and technical support to African countries, least developed countries, landlocked developing countries and small island developing States 18.
- Support domestic technology development, research and innovation in developing countries, including by ensuring a conducive policy environment for, inter alia, industrial diversification and value addition to commodities.
- Significantly increase access to information and communications technology and strive to provide universal and affordable access to the Internet in least developed countries by 2020.

PROGRESS OF GOAL 9 IN 2017

Despite steady improvements in manufacturing output and employment, renewed investment will be needed in the least developed countries to build needed infrastructure and ensure the doubling of industry's share of GDP in those countries by 2030.

- Efficient transportation services generate employment and wealth and drive economic development. In 2015, the estimated global economic impact (both direct and indirect) of air transport was \$2.7 trillion, equivalent to 3.5 per cent of global GDP. The least developed countries, landlocked developing countries and small island developing States represent far less air travel and freight volumes, with each country group accounting for only 1 per cent to 2.7 per cent of the global total.
- Manufacturing is a principal driver of economic development, employment and social stability. Globally, manufacturing value added as a share of GDP increased from 15.3 per cent in 2005 to 16.2 per cent in 2016. In 2016, manufacturing value added per capita amounted to \$4,621 in Europe and Northern America, compared to about \$100 in the least developed countries.
- As many countries move to more efficient and less energy-intensive industries, their emissions of carbon dioxide per unit of manufacturing value added are generally

declining. From 2000 to 2014, Europe and Northern America reduced their emissions intensity by 36 per cent. All of the 10 largest manufacturing countries saw decreases in their emissions intensity. Such promising trends are not reflected in the global emissions intensity level, however, since a significant share of global manufacturing value added has moved to countries with generally higher intensity levels.

- In 2014, investments in research and development stood at 1.7 per cent of global GDP, up from 1.5 per cent in 2000. Worldwide, there were 1,098 researchers per million inhabitants in 2014, ranging from 63 in the least developed countries to 3,500 in Europe and Northern America.
- ODA for economic infrastructure in developing countries reached \$57 billion in 2015, an increase of 32 per cent in real terms since 2010. The main recipient sectors were transport and energy (\$19 billion each).
- Manufacturing is increasingly shifting towards more technologically complex products. While medium- and high-tech products continue to dominate manufacturing production in industrialized economies (where they contribute about 80 per cent of total manufacturing output), the share has barely reached 10 per cent in least developed countries.
- Mobile-cellular services have spread rapidly and have allowed people living in previously unconnected areas to join the global information society. In 2016, 95 per cent of the world's population and 85 per cent of people in the least developed countries were covered by a mobile-cellular signal.

Finance: A Challenge for SDG 9

To address the funding gap, we need alternative means of financing and collaborative public-private governance frameworks to provide innovative infrastructure solutions. This is not only about building new infrastructure but also about using our existing systems more effectively and efficiently. Some examples of companies stepping up to the challenge are:

- Google recently added (yet) another string to its bow with the establishment of a new independent company (Sidewalk Labs) dedicated to innovating new technologies needed to improve urban life. The venture is to be headed up by the former deputy mayor of New York and former chief executive of Bloomberg, Daniel Doctoroff. The announcement accompanying the launch specifically singled out transit, cost of living (particularly housing infrastructure), energy use and government efficiency as areas of focus.
- U.K. retailer Marks & Spencer recently launched a fund for small-scale renewable energy projects. As well as providing some much needed capital for such projects, the fund should help ensure that M&S's sustainability plan is made relevant to local communities.
- IBM's Smarter Cities, Cisco's Smart+Connected Communities and Siemens Sustainable Cities are all programs designed to work with local governments to provide solutions to urban challenges — in particular those relating to infrastructure.
- Green Bonds are continuing to grow as investment vehicles dedicated to sustainable projects. YES bank, India's fifth largest private-sector bank, announced India's first Green Infrastructure Bond in February. The bond issue raised \$158 million, doubling its original target — with big interest from insurers and pension funds.

Providing finance and technical expertise for solutions to infrastructure problems could prove to be big business in the future. Companies, especially technology-led firms, have a wealth of resources available that can improve the operation of infrastructure assets by local governments.

Infrastructure also can make a sound long-term investment with stable and predictable cash flows that suit the horizons of pension funds and insurers. Increasingly, businesses and investors are growing wise to this potential and seizing opportunities. Without them, there would be no way of bridging the gap.

Challenges for Major Developing Nations

BANGLADESH

Successes:

- The government's 2016-2020 plan, revised in late 2015, now addresses 56 SDG targets directly and the rest are included indirectly.
- The ministry of education has also contacted private sectors to produce braille books to be distributed among the visually impaired children attending the government schools from January 2017.
- NGOs in the country are shifting their programme priorities towards climate change, extreme poverty reduction and considering disability as a cross-cutting issue.
- A civil society group has been formed with expert professionals to monitor the progress of achievement of the SDGs in the country. United Nations has been actively participating in the discussions of the group.

Challenges:

- The government health, water and sanitation activities have a reduced budget this year due to funding cuts.
- There is no noticeable progress in improving governance, curbing corruption, steps on to ensure decent, secure and inclusive workplace and inclusive economic growth.
- Donor funding to education, health and other social sectors started reducing from this year. The NGOs working on the inclusion of people with disabilities will face challenges in continuing their work at the scale they are now.

BENIN

Successes:

- A ministry is being put in place at the presidency of the republic to coordinate policies implementing the SDGs and other large project works.
- The government organised a high-level seminar on the SDGs and the Paris agreement on climate change. The goal was to begin the operational phase of the measures taken in these two international documents in order not to miss the deadline of 2030 for achieving the SDGs.

BURKINA FASO

Successes:

- The SDGs were taken into account in planning a national programme of economic and social development.
- The Secrétaire Permanent des Organisations Non Gouvernementales (SPONG) developed a project for ownership of the SDGs by the communities and civil society organisations of the country. SPONG will monitor the implementation of the SDGs.

Challenges:

- A lack of finances for the SDGs project to be explained to the wider community.
- United Nations' team in Burkina Faso needs to ensure it plays a role in SDGs monitoring with other NGOs.

COTE D'IVOIRE

Successes:

- The SDGs are being aligned with sectoral and local health policies – United Nations is contributing to this process.
- The country has put in place a steering committee and scientific committee for the transition process from the Millennium Development Goals (2000-2015) to the Sustainable Development Goals (2015-2030)
- Five strategies on development interventions have been put in place to work towards meeting the SDGs in the period 2016-2020.

Challenges:

- Increased financing is needed to meet sustainable development objectives, and there's a need to ensure the availability of data for regular monitoring.

GUINEA

Successes:

- United Nations' country team maintains strong support and collaboration with the national government (through the Ministry of Health) toward implementing the SDGs.
- Guinea has just developed its national health sector development plan 2015–2024. The plan took into consideration the SDGs in the health sector, particularly goals 3, 9, 10, 11 and 13.

INDIA

India and the SDGs – a status update

Successes:

- A new national body, the National Institute for Transforming India (NITI) aayog (commission) was created in January 2015, and has been given responsibility for implementation of the SDGs. It has already completed a process mapping the ministries and Centrally Sponsored Schemes (CSS) of the central government against the SDGs.
- United Nations' social inclusion programme has monitoring systems that gather data disaggregated by gender, caste and religion, helping us reach the most marginalised people.

Challenges:

- There are still very low levels of awareness about the SDGs in the eye health and disability sectors – there's a need for widespread awareness generation on the potential positive impact of the SDGs on people's lives.
- Despite the emphasis on gender equality in our programmes, gender gaps still exist in our social inclusion programme where the number of women covered is significantly less than the number of men.

NIGERIA

Successes:

- United Nations is contributing to interventions for the control and elimination of five neglected tropical diseases in six states of Nigeria, in partnership with the federal and states ministries of health. Control and elimination of the NTDs in these districts will significantly improve the health and wellbeing of the most marginalised communities, boosting economic outcomes and contribute to the broader development goals and the achievement of Goal 3.

Challenges

- There is poor government funding for the control and elimination of NTDs.

PAKISTAN

Successes:

- An amendment disability bill, drafted by a committee which included United Nations, has been tabled in the National Assembly to provide health care, education,

employment and others facilities to approximately eight million persons with disabilities in Pakistan.

- United Nations is working through the National Forum of Women with Disabilities to work with the government on gender issues within the SDGs, and mainstreaming disability within gender issues.
- LEAD Pakistan (a national level NGO) has formed a specialised team to work on translating the SDGs into a national framework of policy coherence, implementation, and monitoring. Work has already begun on sensitising the government of Pakistan and other stakeholders on the potential implications of the SDGs for the country.

TOGO

Successes:

- In July 2016, a session of the Policy Forum on Sustainable Development concluded with the adoption of a Ministerial Declaration on “Leaving no one aside”.
- The country has made progress in the field of food safety (reduction of hunger), education and the fight against HIV/AIDS, according to the Secretary General of the Ministry of Planning.

UGANDA

Successes:

- A new government framework is in place for monitoring the implementation of the SDGs. United Nations is part of the disability movement within the country, and participates in disability discussions around inclusion and advocacy.
- The need for consultation with disabled people’s organisations (DPOs) has been recognised. A plan for DPOs to build pressure on the Ministry of Gender to take action on disability matters is in its early stages, and there’s also a plan in place for DPOs to call on parliament for the appointment of a minister in charge of disability.

Challenges:

- There is a need to train DPO representatives to link the SDGs with the United Nations Convention on the Rights of Persons with Disabilities.
- There is work to be done to engage other stakeholders (women, children, older people, youth movements etc) to voice disability issues to relevant government bodies.
- Ensuring successful, ongoing dialogue with government by DPOs.

- There is a need to ensure that the government framework on the SDGs is inclusive.

ZAMBIA

Successes:

- The ministry of community development and other partners convened the first ever social protection week on the theme of ‘Achieving prosperity for all’ in May 2016.
- With the success of a social cash transfer initiative improving people’s lives, the government has decided to extend the project to 78 districts throughout the country and target 243,000 people, contributing towards Goal 1 by increasing incomes of the poorest people and reducing extreme poverty.
- In May 2016 a disability policy was launched, to create a working, education and social atmosphere inclusive of people with disabilities – United Nations supports members of various disability groups to participate in these, and has held discussions with the Ministry of Community Development. The policy indicated that the government would ensure disabled people were included in the upcoming general election process. It included a commitment to procure 5,600 ramps in polling stations and relocate all polling stations to ground floor level to improve accessibility. The commission also promised to provide braille voter education materials, and ballot paper jackets for voters who were visually impaired and did not wish to be assisted in casting a secret ballot.

Challenges:

- Despite commitments, the election process didn’t run smoothly in its inclusion of people with disabilities. Disability data gathered during voter registration was problematic, and the political environment during the official campaign period was marred by political violence and intolerance, meaning people with disabilities were deterred from attending political meetings including rallies where they could have accessed messages on which to base their decisions.
- The adoption processes within the political parties was also generally not inclusive and discouraged many persons with disabilities from participating in elections as candidates seeking election to public office.

A strong sustainability challenge

Climate change also puts pressure on natural resources that are essential for sustaining human civilization. In the past, resource scarcity was often presented as a critical challenge, but for much of the twentieth century, resource prices actually fell. The combination of rapid economic expansion, continued population growth and a changing climate raises the spectre of resource scarcities. In the medium and long term, it may lead to a strong sustainability challenge. There is significant scope for substitution in many areas, yet certain forms of natural capital including the ecological services they provide cannot be replaced by man-made capital. Their exploitation has thus to be limited so as to preserve the overall capacity of ecosystems to provide those services (Ayres, 2007). Land, water and energy in particular are critical resources for humanity, and their availability and use are tightly interconnected, with multiple feedback channels between them. All of them have strong links to agriculture and food production. Large unmet needs at the global level require and will inevitably lead to a further expansion in their use and exploitation. Combined with the additional impact of climate change, this expansion may very well lead to much tighter supplies, and thus to price volatilities and sustained price increases. If scarcities arise and if limits to substitutability are reached, distributional conflicts will have to be addressed at the national and global levels, as well as with respect to purposes of use. The common drivers of resource use are population growth and economic expansion and the associated lifestyle changes. The global population will continue to expand, but population growth will take place largely in the poorest countries, adding comparatively small additional pressure at the global level. Resource use is strongly correlated with income, however. Currently, per capita material and energy use in developed countries is higher than in developing countries by a factor of 5-10.

Trends and challenges

Global socioeconomic, demographic and environmental megatrends have increased interdependence among countries, but without any commensurate strengthening of global governance. As a result, global macroeconomic imbalances, migratory pressures and environmental challenges are insufficiently addressed, and crises occur with increasing frequency. At the same time, countries with growing exposure and interlinkages become more vulnerable to such external shocks, and crises spread more quickly, threatening development progress. At the national and sub national levels, these tighter links have

facilitated socioeconomic progress, but not everybody is benefiting to the same degree. Rather, inequalities both within and between countries persist. While growth has accelerated in many developing countries, often it has been non-inclusive, failing to create sufficient employment opportunities and exacerbating inequalities. The consolidation of value chains and the related deceleration of trade growth may render the implementation of export-based growth strategies even more difficult in the years ahead, at the same time as demographic developments make accelerated employment generation an imperative in countries with large youth cohorts. Population dynamics will also impose additional stresses on local governments and rapidly growing cities and national health and education systems. Rapid ageing in numerous countries, in particular, will require further investments in social protection systems. The persistence of inequalities, whether in incomes, or in access to services, decent jobs, land or technology, also hints at their entrenched structural causes. Discrimination and exclusion, based on gender, age, disability or ethnicity, have to be tackled directly in order that greater inclusiveness and transformative change may be achieved. These challenges are exacerbated in multiple ways by accelerating environmental degradation. The poor are most vulnerable to environmental hazards and, owing to the unequal distribution of assets, will also suffer the most from resource scarcities. In terms of the medium and long run, threats to the stability of the global climate overshadow all other challenges, as they would fundamentally undermine the preconditions for human development.

The solution - to strengthen the developing countries?

The developing countries' economies are in a constant state of threat. Their vulnerability at present is far worse than ever before, all due to their weakness in the global economy, making them far less prepared to face the uncertain external environment. However, hope prevails. A World Bank study indicated that the success of the Doha Round would increase global income by more than \$500 billion a year by 2015 and over two thirds of that increase is poured into the developing economies, pulling approximately 144 million people to live above the poverty line. Yet, such a success depends on both parties: the developed countries binding to what they enforce and the developing countries agreeing to the proposals; in other words, full global liberalization. Several developing countries have shown great signs of participation in the GATT/WTO system, some of them even joining the negotiations from the beginning. Several advantages trailed this early admittance, as it entails entering into a series of bilateral agreements with numerous countries. Developing countries had a good chance to be effective as the WTO provided them with a productive setting

Strategies for sustainable development

The transformative change necessary to address the challenges set out above will be driven mainly by actors at the local and national levels. Coherence between local and national strategies will therefore remain critical. Policy decisions in one country have regional and often global repercussions, but currently such externalities—be they positive or negative—are not taken sufficiently into account in decision-making processes. Coherence in national development strategies implies most fundamentally that socioeconomic development strategies aim to avoid further environmental distress. Developed countries in particular have to address unsustainable consumption and production patterns and their continuously rising environmental impact, while emerging and developing economies need to pursue the goal of greening their catch-up growth. At the global level, the human development agenda and the goal of environmental protection have to be jointly pursued. Developed countries in particular would make moves towards sustainable production and consumption, while developing countries would offer greater cooperation in meeting climate and other global challenges. Such a global consensus on sustainable development will be based on solidarity, with human development and environmental protection as integrated and universal goals for

all countries. A final key challenge is ensuring responsibility and accountability for progress towards meeting the SDGs. Mechanisms to do this need to link across local, national and international scales.

Questions the resolution should answer

1. “Aid for development, is it the answer?” The OECD defines aid as a voluntary transfer of wealth from one country to another with the aim of benefiting the recipient country. This, however, is not always the case, as many donors use aid as ways to benefit themselves either by favorably influencing the politics of a certain country, opening up market access

We need to measure both “inputs” (ie, did nation X invest what they said they were going to invest in addressing issues A, B, and C), as well as “outcomes” (ie, did we actually achieve our goals to eradicate poverty, improve health, and provide access to water, food and energy in nation X)?

However, crucially, we need powerful ways of feeding this information back into the policy and political arena to hold responsible stakeholders to account. This chiefly includes governments, but also other key stakeholders in the private sector, NGOs, and even civil society. If we don’t create these sorts of ‘feedback loops’ to hold each other to account, how will we make sure that the SDGs are actually being implemented?

While aid flows into developing countries and LDCs, one might expect inflated growth in the economy. The gap between the expected and actual growth can be traced back to corruption and private consumption. Corruption is widely spread in countries with low development conditions; however, quantifying it has proved to be elusive. Corruption continues to be a taboo subject; thus, the ability to separate corruption costs from wastage, mismanagement and inefficiency is impossible. This leads to more control clauses from the donor countries enforced upon recipients in order to limit these wastages. However, this leads to loss of flexibility to the recipient economy, as it has to deal with more constraints thus lowering the aid efficiency.

2. “One size fits all?”

It becomes evident that reaching a clear-cut solution whereby a recommendation can be issued to all countries seeking development is impossible. Certain methods seem to work in some cases, while causing extreme damages in other cases. This leads to the belief that every case needs its own recommendation based on its economic strengths, weaknesses and development status, to name a few economic indicators. Direct implementation of an economic policy framework without taking into consideration the underlying social, political and economic structure led to a large duality among the society, i.e., large corporations ran by corrupt few elites and the remaining impoverished workers trying to survive with the effects of sudden globalization . In a recent G-20 meeting, the IMF was finally reformed to include and empower the developing countries’ voice and to overcome the “shock therapy” approach, which accompanies the loans along with the strict conditionalities. Will a similar WTO reform take place soon? Will the developing countries finally unite and take a final stand?

Further Readings - <http://unctad.org/en/Pages/Home.aspx>

http://www.wto.org/english/tratop_e/devel_e/devel_e.htm

<http://www.quno.org/geneva/pdf/economic/Background/Patents-TradeDevelopmentEnglish.pdf>

http://www.ycsg.yale.edu/core/forms/Trade_for_Development.pdf

<http://www.oecd.org/investment/investmentpolicy/1922690.pdf>

<http://www.farmfoundation.org/news/articlefiles/816-vsmith.pdf>

AGENGA ITEM 2:

**Accountability and inclusion of nations towards
a nuclear free future in the era of renewable
energy.**

Introduction to Agenda Item 2

Political divide is the question and nuclear power is the answer. More often than not, nuclear energy is used as a bomb rather than being used for a valuable source of power. Thus, the world agreeing to a nuclear free future, what will be the accountability of nations in possession of nuclear weapons and nations all around the world for usage of nuclear power.

Anti-nuclear groups have undertaken public protests and acts of civil disobedience which have included occupations of nuclear plant sites. Other salient strategies have included lobbying, petitioning government authorities, influencing public policy through referendum campaigns and involvement in elections. Anti-nuclear groups have also tried to influence policy implementation through litigation and by participating in licensing proceedings.

Anti-nuclear power organisations have emerged in every country that has had a nuclear power programme. Protest movements against nuclear power first emerged in the USA, at the local level, and spread quickly to Europe and the rest of the world. National nuclear campaigns emerged in the late 1970s. Fuelled by the Three Mile Island accident and the Chernobyl disaster, the anti-nuclear power movement mobilised political and economic forces which for some years "made nuclear energy untenable in many countries". In the 1970s and 1980s, the formation of green parties was often a direct result of anti-nuclear politics (e.g., in Germany and Sweden).

Renewable Energy vs. Nuclear Energy

For at least the next 10 years, when considering new capacity, there should be little doubt that renewables will be the generation method of choice. Utility PV, solar thermal (especially with molten salt storage as a baseload source), wind, rooftop solar and biomass will be the highlights, along with contributions from biogas (sewage, landfills and livestock), geothermal, and maybe even some wave and tidal. Advances in storage technologies and reductions in price will help remove the intermittency concerns of some renewables. The next ten years should be another decade of rapid growth.

When considering a transition from the dirtiest of fossil fuels, nuclear is also a possibility, and therefore, nuclear will be discussed along with renewables. Nuclear's time to build, risk, waste and especially costs will be scrutinized, as the costs for nuclear are rising while renewable costs are decreasing.

Cities and nations are rapidly installing small and large-scale renewable power sources and new storage technologies. Even China, currently the most aggressive country with respect to nuclear power, is adding more capacity with wind and solar compared to nuclear — and it's not just nameplate capacity — it's actual generated power. Last year alone, China added 20.72 GW of wind (4.8 GW output as their capacity factor is only 23 percent) and 28 GW of solar (10.6 GW output), with around 90 percent of their solar installations coming from utilities. New capacity from wind and solar were more than the 5 nuclear plants added in the same year (5.7 GW output). China is just one example of how wind and solar can be built faster while generating more power. By the time (and if) China completes their 28 nuclear plants (many are already behind schedule), with an added capacity of 34 GW, they will have added more power from wind and solar in the same timeframe — again, taking capacity factors into account.

Why Nuclear Power?

The other forms of energy including the generation of electricity from coal, fossil fuels, etc. are growing as major contributors to the emission of carbon-di-oxide in the Earth's atmosphere. In order to reduce the extent of carbon-di-oxide in the atmosphere, realistically, there are a few ways which need to be given paramount importance. These are:-

- Significant transformation to the use of nuclear power;
- A more efficient and an effective use of electric power;

- Stronger emphasis on the usage of renewable energy resources like solar energy, geothermal energy, etc.

Impediments to the usage of nuclear energy

Nuclear Power must be emphasized upon as it is an integral source of power which is carbon free. However, in order to do that, it is imperative that certain consideration must be given to addressing all the implications that are related to the use of nuclear power in the present scenario, because unless and until these aren't acknowledged properly in the way that they are supposed to be acknowledged, we might not be able to handover a safe planet to our future generations.

These impediments are as follows:-

- **Costs**

Nuclear Power establishment is not only a cumbersome process but is also an expensive one. Firstly, not every country has the financial capacity to establish a civil nuclear reactor in order to formulate nuclear energy, and secondly, even if they do, the overall lifetime costs of creating nuclear energy requires a lot of finance.

- **Safety**

The energy creation through nuclear power involves a lot of health, environmental and safety risks. These risks primarily get escalated when the question is about the transportation of the radio-active material, etc.

- **Proliferation**

There is a strong need to have policies and laws to regulate and protect the security of the nuclear power, in order to prevent its commercial misuse. There is a massive increase in concerns related to nuclear power as more and more technologies are coming and spreading all across the globe.

- **Nuclear Waste**

There are a lot of unresolved and unaddressed challenges with respect to the long-term management of radioactive waste. The unplanned disposal of radioactive material can pose a great danger to both present and future generations, thus making it imperative for the States to have more stringent policies for disposing the radioactive wastes.

Small & Modular Nuclear Power Reactors

They are defined as nuclear reactors generally 300 MWe equivalent or less, designed with modular technology using module factory fabrication, pursuing economies of series production and short construction.

- Legitimacy of Privatization in manufacturing reactors
- Licensing
- Sharing of Technology amongst Developed, Developing and the Least Developed countries
- Cost Saving Incentive

Forecast for the next 10 years

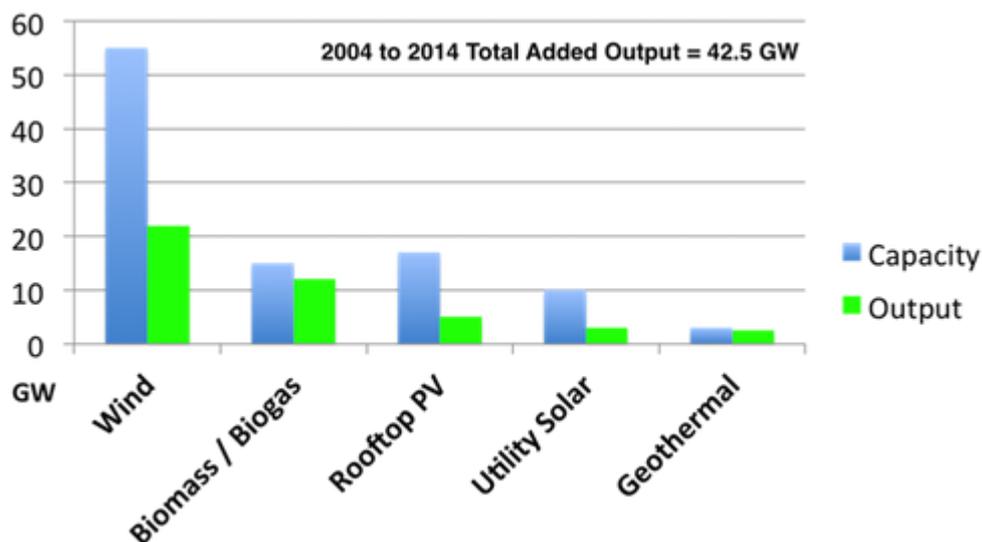
Let's take a look at the last 10 years and the next 10 years...

New U.S. renewable and nuclear capacity added the last 10 years (output):

- 55 GW utility wind (22 GW)
- 17 GW rooftop PV solar (3.5 GW)
- 10 GW utility PV and solar thermal (2.5 GW)
- 15 GW biomass and biogas (12 GW)
- 3 GW Geothermal (2.5)

Total renewables: 100 GW (42.5 GW)

Total nuclear: Marginal increase from existing plants



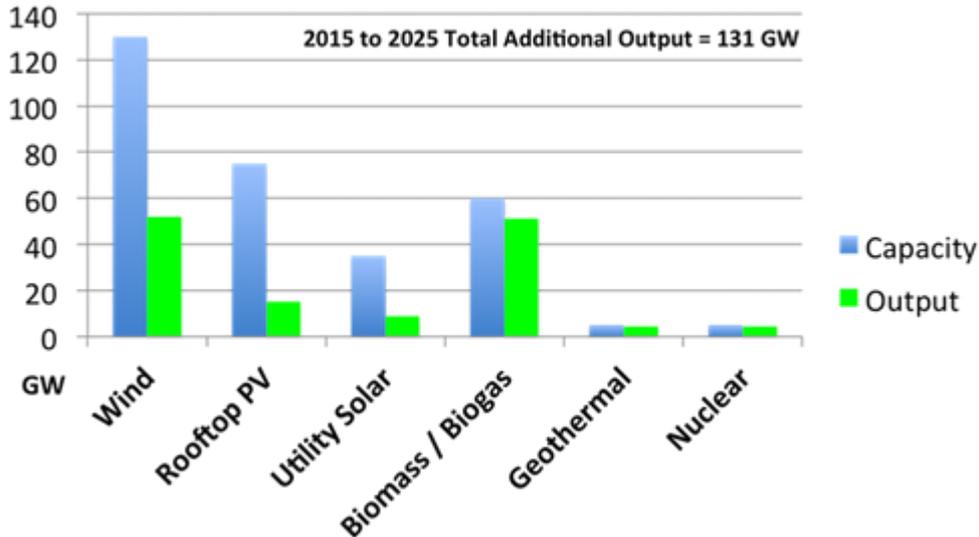
In the last 10 years, renewables added around 40 nuclear reactors-worth of electricity.

U.S. renewable and nuclear plan the next 10 years capacity and (output):

- 130 GW utility wind (52 GW)
- 75 GW rooftop PV solar (15 GW)
- 35 GW utility PV and thermal solar (9 GW)
- 60 GW biomass and biogas (51 GW)
- 5 GW Geothermal (4 GW)

Additional renewable power next 10 years: 305 GW (131 GW)

Additional nuclear power next 10 years: 5.6 GW (5.1 GW)



In the next 10 years, renewables will add well over 100 nuclear reactors-worth of electricity.

The above output numbers for renewables assume no advances in wind or solar efficiency and no grid storage. Both assumptions will become completely false, so the 131 GW number should be considered a minimum number. Capacity factor numbers used were 40 percent wind, 25 percent utility solar, 20 percent rooftop PV, 85 percent biomass/biogas, 80 percent geothermal. Note that some of the utility solar added to the grid was solar thermal with molten storage, with an 80 percent capacity factor, so 25 percent capacity factor number was used to encompass all utility solar. Obviously, we cannot use EIA's capacity factor numbers for renewables, as they only have renewable generation data for the last four months of 2014. That means no summer months for solar and a few missed windy months for wind. The additional nuclear power output of 5.1 GW will come from 5 under construction plants that are behind schedule and billions over budget. They include Watts Bar, Summer and Vogtle. Even favorable policies and new plant approvals won't change nuclear's contribution — nuclear is expensive and takes too long to build. The next 10 years = five reactors = 5.1 GW output.

So, here is the big question: why are renewables growing faster than nuclear, even in places like China where they are building the most reactors? In places like the U.S., Japan and Europe, is it because of nutty environmentalists and anti nuclear groups? Isn't that what happened with Vermont Yankee? Actually, no - Vermont Yankee really closed because the O&M costs became too high. The real answers: risk, cost and time to build.

Accountable factors for Member States towards Nuclear Energy

Nuclear Takes Longer to Build and Costs More than Renewables

Nuclear plants today are far more complex than the ones built decades ago. The AP1000 is a new reactor, and both China and the U.S. are behind schedule with their reactors. Here in the U.S., take Vogtle for example. Vogtle is now running three years behind schedule — and over \$2 billion USD over budget. The revised expected price tag for the two reactors is now around \$15 billion USD, and rising. These delays and budget overruns so far have cost Georgia ratepayers an extra \$14 per month on their electric bill. When finished, Vogtle's two reactors will generate wholesale power at rates around \$120 per MWh — that's \$0.12/kWh which is the current national average RETAIL rate. The other three reactors will have generation rates at least \$108 per MWh, equivalent to \$0.108 per kWh. So, the next time you hear Ted Cruz or the Koch brothers talk about how renewables are going to raise utility bills, remember, reality proves otherwise.

When considering Levelized Cost of Energy (LCOE), nuclear decommissioning costs are excluded from the calculation. This is a big deal, because recent decommissioning costs have been running between \$1 billion USD (Vermont Yankee) and \$4 billion USD (San Onofre). Then, there are ongoing costs, as nuclear waste remains on-site and must be guarded and secured. While ratepayers pay a fee to cover the decommissioning costs, the fees collected were based upon old cost estimates. \$900 million in subsidies have already been provided for decommissioning costs, and this figure is expected to rise as current deficits are in the tens of billions of dollars range.

Also not included: potential cleanup costs from a nuclear incident. Japan's government has already spent over \$100 billion USD on cleanup efforts related to Fukushima, and it's projected the cost will exceed \$300 billion USD. Bottom line is that even without cleanup costs, wind, solar and other renewables are less expensive to build and electric rates are less expensive than nuclear. Remember, nuclear decommissioning costs are NOT included, even though those costs are eminent.

Speaking of subsidies, are you tired of hearing how renewables are highly subsidized compared to fossil fuels and nuclear? Anyone that makes this statement is either lying or they simply have not done their homework. When considering lifetime subsidies, the oil, coal, gas

and nuclear industries have received approximately \$630 billion in U.S. government subsidies. Wind, solar, biofuels and other renewable sectors have received a total of roughly \$50 billion in government investments. Also, oil and gas subsidies were five times greater than renewables during the first 15 years of each subsidy's life and more than 10 times greater for nuclear. Furthermore, consider that non-renewable subsidies are guaranteed to renew, offering those industries decision-making security, while renewable subsidies have been uncertain. How fair is that? Who makes the decision whether to build nuclear or renewables? Is it the pro nuclear or pro renewable camps? No, it's the utilities and consumers, and they are the ones choosing renewables. Utilities are purchasing wholesale power cheaper from renewables than from coal, nuclear and sometimes even cheaper than from gas. Hydro has always been cheap, but consider wind and solar. Utilities are securing PPAs from wind and solar at rates in the 2.5 to 5 cent/kWh range for wind, and 5 to 9 cent/kWh range for solar. For example, the 50 MW Macho Springs solar plant in New Mexico delivers power for 5 cents/kWh under their PPA. That is especially low, but most U.S. solar projects in the U.S. have PPAs in the 6 to 8 cent/kWh range. Even if you take out the PTC from wind in Texas, a utility would still be buying power under 5 cents/kWh. Furthermore, prices for wind and solar continue to drop rapidly.

Do we need nuclear as a baseload source of energy?

If we are to transition from fossil fuels, it's important to note that during this transition, existing nuclear power plants are needed. Nuclear provides 19% of our baseload electricity. The nuclear plants in operation today have already been built, and decommissioning costs are eminent, no matter when they close. Provided they continue to operate safely, they will continue to help offset fossil fuel use. With plant extension plans, many plants can operate for another 30 or more years.

What about renewable's intermittency and dispatchability? First, consider the fact that not all renewables are intermittent. While the U.S. does not intend to add much more hydro, it is an existing source of baseload energy, currently generating 6% of our needs. Solar thermal with molten storage, biogas, biomass (especially cleaner electro and biochemical biomass) and geothermal all provide baseload sources of energy.

Wind and solar become highly dispatchable with storage. Fortunately, storage prices are dropping rapidly. Vanadium flow batteries are already viable options. LI-ion batteries are running at more than 90 percent efficiency. Tesla's gigafactory is expected to cut costs 30 percent by 2020, and \$100/kWh prices are expected within the next 10 years — perhaps

sooner. There's a startup company called Sakti3 that developed a less expensive solid state LI-ion battery — and they start manufacturing this year. Additional options included various methods utilizing hydrogen. All are technically and economically realistic.

It's usually those in the pro nuclear or fossil fuel camps that cite intermittency as the key issue with renewables. I find it ironic, that those who have even a fundamental understanding of nuclear, can't seem to find answers to relatively simple problems. Compare and contrast the difficulties of fission, handling nuclear waste, building dozens of nuclear plants simultaneously, along with the costs — to solving intermittency. In other words, humans can construct highly complex reactors, prepare fuel, split atoms and manage radioactive waste, all of which require immense short and long-term financial investments, yet we cannot utilize various storage techniques, generation diversity and a smarter grid? Obviously, we can, and we will.

Decarbonisation: Risk Versus Reward

Why not build nuclear AND renewables? The fact that renewable generation is outpacing nuclear in China is significant because China is currently the most aggressive with their nuclear ambitions — yet, they are building renewables even faster. This raises a question: what if China used the labor, resources and money towards an all-renewable approach? Yes, nuclear and renewables can be built together to help with decarbonization, but, a renewables only approach can also work, technically and economically. Could an all renewables solution be a better approach to decarbonization? Is it technically possible? Economics, both from the perspectives of the utilities and consumers, are really driving the push for renewables over nuclear. In addition to the points above, consider Areva's financials (along with their statements), their push into renewables and also Siemens exit from the nuclear industry. On the utilities side, they are the ones that ultimately decide how to procure power, and they are the ones that are choosing renewables. Even in Texas, the land of Ted Cruz, places like Georgetown are now 100 percent powered by wind and solar.

The other key factors boil down to safety and security. When things go wrong at a nuclear plant, due to accidents, terrorists or nature, they can go very wrong. The damage can cripple or destroy a city and even a Nation. Is it likely? Who really knows for sure. Can you predict the next earthquake in Southern California — or anywhere in the U.S. or Japan or the rest of the world? What about the next tsunami wiping out a coastline? What about the next cyber attack or terrorist organization in the Middle East? Compare a catastrophe with a nuclear plant to that of a solar or wind farm. When you ask me why I am against building

new reactors, it's a matter of economics, safety and security, and the fact that we CAN build upon existing hydro and nuclear with all renewables - and we can do it faster.

Global Energy Security

What does the term energy security mean?

In simple terms, energy security is defined by the International Energy Agency as the secure and affordable supply of energy. In recent years, the challenge of climate change has resulted in the concept being refined to be '**the provision of reasonably priced, reliable and environmentally-friendly energy**'. Thus, to provide energy security is to ensure the reliable supply of energy services to consumers at a price that they can afford and in a way that does not damage the environment. This view of energy security focuses on the interests of **energy importing states** as the **emphasis is upon security of supply and affordability**. **Energy-exporting states** tend to **emphasise security of demand**. They want to ensure that they receive a fair price for their energy exports and that there will be sufficient future demand to justify investment in expensive energy projects. Thus, there is a clear difference between the interests of energy importing economies and the demands of energy exporting economies.

Need for Global Energy Security

Try and imagine a world without secure and reliable supplies of energy? In the UK we take it for granted that when you turn on the switch the light goes on. Many parts of the world do not have that certainty and more than 1.6 billion people currently live without access to electricity. In the summer of 2008 the oil price peaked at \$147 a barrel. At that time, the impact of high-energy prices made everyone realise just how dependent upon energy services our society has become. Those record high oil prices played a role in the global economic crisis that has followed. As people had to pay more for petrol, heating oil and gas and electricity, they had less to spend on other things, which depressed consumer demand. At the same time, high fuel costs were passed on to the price of the food that we eat and the goods that we buy. They also increased the cost of our summer holidays in the form of fuel surcharges. They also resulted in billions of dollars being transferred from the energy importing economies to the energy exporting economies. And our reliance on oil and gas goes beyond the obvious supply of lighting, heating, cooling, transportation and so on; these hydrocarbons are also essential raw materials for manufacturing. Almost everything that you

consume is one way or another dependent on access to hydrocarbons. As a society, we are hooked on oil. As Matthew Yeomans put it in his book *Oil: A Concise Guide to the Most Important Product on Earth: From the moment we wake up in the morning to the moment we go to sleep, oil controls our lives. This means that anything that disrupts the supply of oil and gas, or makes it more expensive, is a threat to our way of life.*

Hurdles to Global Energy Security

Our current energy system is based primarily on hydrocarbons or fossil fuels: coal, oil and gas. At present, these three fuels account for 80.9% of primary energy supply and the International Energy Agency (IEA) estimates that they will still account for 80% of fuels in 2030. These are finite non-renewable resources that are only found in particular parts of the world. Thus, it is geology that determines the energy resource base, that is the total amount of coal, oil and gas reserves that are in existence on the planet. However, all of the resource base is not available for us to exploit, much of it remains undiscovered and of that we know to exist, not all of it can be developed under existing economic conditions and with current technology. What we call proven reserves, which can be defined as: those quantities that geological and engineering information indicates with reasonable certainty can be recovered in the future from known reservoirs under existing economic and operating conditions. This means that at any moment in time there is a physical limit to how much oil, or gas or coal can be produced. In reality, increasingly it is not these 'below the ground' geological factors that limit energy production and threaten energy security; but rather the above the ground' geopolitical, economic and environmental factors that limit production. That said, hydrocarbons are non-renewable and there is increasing support for the view that we will soon hit the maximum level of oil production, or Peak Oil. The concern is not so much that we will hit peak production, but what happens after that? Will production plateau or will there be a rapid decline in production? We don't know the answer, but there may soon be a physical limit to the amount of oil and gas, and even coal, available to meet our energy demands.

There is considerable disagreement about Peak Oil, but it is widely accepted that there are a host of above the ground problems that threaten the secure and affordable supply of energy and that we have reached the end of easy oil. Our contemporary reliance on hydrocarbons is the result of the industrial revolution, which harnessed the energy in coal to drive machinery. In its initial phase, industrial society was dependent upon local supplies of coal. It was only when oil became an energy source at the turn of the 20th century that

international trade in energy became a major factor. Some industrial economies, principally, the United States, had domestic access to the oil; others, such as the European powers, had to develop the capacity to develop oil abroad and transport it home. After the Second World War the economics and geopolitics of oil and gas production have changed dramatically. The major oil-exporting regions of the world, first and foremost the Middle East, are no longer the subject of European colonialism and are no longer under the control of the International Oil Companies. Instead, the oil rich regions are now under the control of independent states with their own national oil companies. In the case of oil, these oil rich states have created a cartel, the Organisation of Petroleum Exporting Countries or OPEC, to protect their interests. Most recently, the collapse of the Soviet Union has resulted in the emergence of new oil and gas exporting states, such as Russia, Azerbaijan, Kazakhstan, and Uzbekistan. Equally, there are now major oil exporting states in Africa--Nigeria, Sudan, Angola—and Latin America—Brazil, Columbia, Ecuador and Venezuela. Many of these states have created their own national oil companies and are driving a hard bargain when it comes to allowing the international oil companies access to their reserves, a trend that energy importing states in the developed world term 'resource nationalism'. The key point here is that there has been a global shift in the geography of oil and gas production, away from the industrially developed north towards the so-called developing world. In fact, according to BP's 2009 Statistical Review of World Energy, 2008 was the first year when energy consumption in the developing world was greater than the developed world. Equally, there has been a shift away from the international oil companies—such as BP, Chevron, ExxonMobil, Shell and Total--as the holders of oil reserves and the main producers of oil, towards national oil companies, such as Saudi Aramco, Petronas (Malaysia), and Petrobras (Brazil). Today, national oil companies control about 77% of the world's oil reserves and the international oil companies less than 10%.

Not only has there been a global shift in production, there are also new centres of demand in the developing world—such as India and China—that are changing the geography of demand, in 2008 China alone accounted for nearly three-quarters of global growth in energy consumption. It is now recognised that the majority of the future growth in energy demand will come from the developing world, which continues to experience rapid rates of population growth, urbanisation and economic growth. The IEA predicts that between now and 2030 the developing world will account for 87% of the growth in global energy demand. All of this means that there are more states and consumers chasing a limited amount of energy production.

If the situation were not complicated enough, it is now apparent that the burning of fossil fuels since the advent of the industrial revolution has released large amounts of carbon dioxide (CO₂) into the atmosphere and the resultant increase in concentrations of CO₂ is leading to a warming of the climate, so-called climate change. The vast majority of the World's scientific community and its politicians now accept that measures must be taken to stabilise the levels of CO₂ to minimise the impact of global warming. It is estimated that energy-related CO₂ emissions account for more than 61% of global greenhouse gas emissions. Consequently, to address climate change, energy strategies and climate change policies need to be closely coordinated. The UK Government's Energy Strategy identifies energy security and climate change as major challenges facing the UK, and the recent Climate Change Act sets strict emission targets for the energy sector and a carbon budget for the country. This complicates the energy security situation as it means that emphasis must now be placed on sources of energy that do not generate large amounts of CO₂. This means, gas, rather than oil and oil rather than coal, and renewable energy and possibly nuclear power rather than fossil fuels. But coal is more plentiful and fossil fuels are cheaper, at present, than renewable energy and nuclear power. There are hopes that a technology known as carbon capture and storage (CCS) can be developed to produce so-called 'clean coal', but it remains unproven. Thus, it's far from certain whether it will be possible to deliver energy services in a way that is reliable and affordable and that will not damage the environment.

Future Projections Prove to be Detrimental

In their 2008 World Outlook, the International Energy Agency concluded that: 'The world's energy system is at a crossroads. Current global trends in energy supply and consumption are patently unsustainable—environmentally, economically, socially.' Put simply, 'business as usual' is not an option. If we continue to rely on fossil fuels and continue to consume them at ever-increasing rates, well before we run out of reserves, we will pay more and more for our energy, which will trigger economic collapse, social unrest and conflict. However, such a future could also trigger catastrophic climate change that would also bring about the same negative results. Therefore, something has to change; we need to change the way we obtain our energy services to reduce our reliance on non-renewable fossil fuels and to avoid catastrophic climate change. However, the energy revolution that we need will be expensive, but the cost will be even higher if we delay. Many are now calling for a Green New Deal or a Green Recovery Plan that would target government funding on projects that will promote the transition to a low carbon future.

Primary Stakeholders

One of the problems facing us is that there is no international organisation responsible for coordinating global energy policies. The interests of the energy importing developed world are represented by the International Energy Agency, which was created by the OECD (Organisation for Economic Co-operation and Development) in 1974 as a result the actions of OPEC, and which represents the interests of some oil exporting states oil. The European Union has an energy strategy, but energy security is the responsibility of the 27 member states. There is an Energy Charter Treaty that aims: “to strengthen the rule of law on energy issues, by creating a level playing field of rules to be observed by all participating governments, thereby mitigating risks associated with energy-related investment and trade.” But membership is voluntary and it has no real powers. The World Trade Organization is not involved in the energy sector.

In the absence of an effective international organization, energy security is the business of individual states and their state and privately owned energy companies. In some countries the state owns the energy companies and energy infrastructure and in others there is a mixture of state-owned, state-controlled and private companies. The UK is unusual in that the Government no longer owns any of our energy sector, yet it still sees energy security as something it needs to deliver.

The global energy system that enables the production, trade, transportation and delivery of energy resources and services is very complex. In the oil industry there is a global market for crude oil and oil products and supply and demand are matched via that market, though a lot of oil is now subject to longer-term contracts. In the gas industry, which is dependent upon pipelines and liquefied natural gas that requires lots of capital investment, long-term contracts are the norm. Traditionally, the gas market has been segmented into regional markets in Europe, Asia and North America, though there is a trend toward globalization and the creation of a single gas market.

Conflicts over Energy Security

Many would argue that the continuing instability in the Middle East is a direct result of the fact that it is the world’s most important oil producing region. Because of their reliance on imported oil, the US and its allies, have a vested interest in ensuring the supply of Middle Eastern oil to world markets. Any developments in the region that threaten US interests are seen as a direct threat to US security (this is known as the Carter Doctrine after US President Jimmy Carter). In 1990-91 when Saddam Hussein invaded Kuwait the US led a military

coalition that defeated him, had he succeed Iraq would have controlled 20 percent of OPEC oil production and 20 of global oil reserves. The current conflict in Iraq was triggered by different concerns and both President Bush and then Prime Minister Blair denied that it had anything to do with oil, but many maintain that it's 'all about oil.' More generally, there is a school of thought that oil is to cause of many conflicts around the world today (see, for example, a recent book by Michael Klare: *Rising Powers: Shrinking Planet: The New Geopolitics of Energy*). There is an unhappy coincidence between oil wealth and conflict. This is part of the so-called resource curse and civil war and unrest in oil exporting states such as Iraq, Nigeria and Sudan add to concerns about global energy security. Conflict over gas is less common, but geopolitics often gets in the way of developing gas fields and building transcontinental pipelines. The recent gas dispute between Russia and Ukraine is about the price of gas and the ability of the Ukraine to pay for its gas. But it also has geopolitical undertones as Ukraine maintains that it is being punished by Moscow for being too pro-western. As 80% of the Russian gas that is delivered to Europe passes through Ukraine, disagreement between the two states threatens the security of European gas supply. This has led Russia to start building pipelines that will bypass Ukraine the EU to look for alternative sources of gas supply.

Conflicts to consider in Future

Many analysts predict that as fossil fuels become scarcer there will be more 'resource wars'. It is certainly clear, for example, that the US military is preparing itself to engage in military action to secure supplies of industrial resources, this is Michael Klare's argument. Equally, NATO is considering whether it has a role to play in guaranteeing energy security. This may be more to do with protecting vulnerable energy installations from terrorist attack and deterring piracy in international sea-lanes. Actual military intervention to secure access to oil and gas fields is unlikely. Ironically, the current Iraqi war has deprived international oil markets of substantial amounts of Iraqi oil, thereby undermining global energy security. Conflicts in oil producing states seem set to continue, the situation in Nigeria shows little sign of improvement, and 'resource nationalism' is here to stay. We could define resource nationalism as: 'efforts by resource-rich nations to shift political and economic control of their energy and mining sectors from foreign and private interests to domestic and state-controlled companies.' Recently, we have seen such trends in countries such as Russia and Venezuela. Thus, there is greater need for energy importing states to engage in energy diplomacy and to promote dialog with energy exporting states. In the final analysis, if climate

change alone were not enough to persuade us that our current energy system is unsustainable, the current geopolitical and economic problems associated with our hydrocarbon economy are sufficient to demand that we reduce our addiction to fossil fuels and seek alternatives.

Need for global energy security?

First and foremost, we need to establish a dialog between energy importing and energy exporting states. Both have an interest in stable prices and secure supply and demand. The recent experience of record high prices, followed by an unprecedented slump is in nobody's' interest. It may be that negotiations around climate change policy, where there is a recognised need for a global solution, may spin off into related discussions around energy security. The exchange of energy technology to reduce carbon emissions is essential for climate change mitigation and may promote further cooperation.

Models for Global Energy Security

Difficult to say as each country faces a unique set of circumstances in terms of indigenous energy supplies, the domestic energy mix (that is the share of different energy sources in domestic energy consumption), the scale of reliance upon energy imports and the nature of those energy imports. Until recently, the UK has been self sufficient in energy supply and energy security has not been a high priority, Japan, by comparison, lacks substantial domestic sources of supply and is almost totally reliant on imports of oil and gas and coal. To manage this situation it has pursued a policy of 'multiple sourcing' whereby it imports energy from a variety of different suppliers, thus avoiding over-reliance on any one source and also enabling it to play one off against the other to ensure a good price for its imports. Within the EU each member state faces its own set of energy security challenges and solution. France, for example, has decided to rely on nuclear power for over 60 percent of its electricity generation. The states of Central Europe have inherited a high degree of dependence on imported Russian gas. Countries like Denmark and Germany are aggressively developing renewable sources like wind power. It is a general rule of thumb that when it comes to energy, security lies in diversity. Diversity in terms of sources of imports of a particular energy resource and diversity in terms of reliance on a range of energy sources in your national energy mix. In most developed industrial economies there has been a trend away from coal and oil in electricity generation, in favour of natural gas. This is because of the geopolitical concerns attached to oil and the environmental problems associated with coal. However, in Europe at least, there are now concerns about future supplies of gas. In the

past, a single energy resource, coal, dominated the energy mix of industrial economies. Today most economies have a diverse energy mix and a desire to increase the share of renewable energy and, in some cases, nuclear power. In China, though, coal still accounts of 70 percent of the energy mix.

THE UK Model

Until recently, not enough, but the decline of our coal industry and the peaking of North Sea oil and gas production have provided a major wake up call. North Sea oil production peaked in 1999 and gas in 2000. Today the UK is a net energy importer and our level of energy import dependence is set to increase considerably in the near term. The Government estimates that by 2020 the UK could have to import three-quarters of its energy needs. At the same time, since 1989 both conservative and labour government have embarked on a policy of privatisation and liberalisation of our energy industry, the net result is that it is now entirely in private hands. The government believes that a competitive energy market will deliver secure and affordable energy. However, history suggests that this is somewhat naïve. The UK now needs to invest more in energy diplomacy and get more involved in EU and international energy strategy. This is particularly important as the UK government wishes to be a world leader in climate policy and has set the ambitious target of reducing CO₂ by 80% by 2050. The Government's energy and climate strategies are full of good intentions, but it remains to be seen if private companies and the market can be relied on to deliver the energy revolution that is required. Most of our coal-fired and nuclear power stations will have to be replaced in the next decade (by 2025 all but one of our current nuclear power stations will be out of service) and we will have to find new sources of supplies of oil and gas. This presents a major opportunity. The Government seems to be basing its strategy on a new generation of nuclear power stations and the possibility of clean coal, plus a substantial expansion of wind energy; but if the wrong decisions are made now it will lock in those mistakes for 30 to 40 years.

Following on from what I have said above, I would say the government has lots of good intentions and lots of ambitious targets in relation to the growth of renewable energy, improvements in energy efficiency and reduction in CO₂ emissions; but it remains unclear how the targets will be achieved. The current government believes that it can create the necessary regulatory framework to deliver secure, affordable and clean energy. The problem is that the private sector is driven by profit and shareholder interests, not government policy. That said, already, electricity generators are required by law to source a percentage of their

electricity from renewable sources (the so-called ‘Renewables Obligation’), but, in the current recession, many investors are pulling out of renewable energy projects because they no longer consider them a good investment. What the politicians are not prepared to admit is that to deliver energy security and to achieve our climate change targets we will inevitably have to pay more for our energy and that we will also have to change our lifestyles. So, the answer to the question might be that we have an evolving vision of our energy future, but how we might achieve it is still work in progress.

Important Documents

1. Nuclear Energy in a Sustainable Development Perspective, OECD Nuclear Energy Agency, 2000, (ISBN: 926418278X)
2. Trends in the Nuclear Fuel Cycle: Economic, Environmental and Social Aspects, OECD Nuclear Energy Agency, 2001, (ISBN: 9789264196643)
3. Rio Declaration on Environment and Development, UNEP (1992)
4. Declaration on the responsibilities of the Present Generations Towards Future Generations, UNESCO (1997)
5. Sustainable Development and Nuclear Power, IAEA (1997)

Questions a resolution must address

Non-Proliferation

There are primarily 3 concerns that the States are required to discuss and deliberate upon with respect to the proliferation of nuclear power. It is important to do so as this would mitigate the risk of proliferation from the operation of the commercial nuclear reactor. The focus must be on to safeguard the weapons-usable material.

They are as follows:-

1. Separated Plutonium Stocks- They are spread all across the world and they are directly usable for developing weapons.
2. Nuclear Facilities- There are a lot of nuclear facilities all across the globe with inadequate controls.
3. Transfer of Technology- If the plan is to switch over to nuclear power, it is important that there is a transfer and sharing of technology between States, something which doesn't happen in a feasible manner in the present world.

1. When regional nuclear treaties exist, how can an international treaty from the committee of ECOSON serve to hold nations accountable for the usage of nuclear power?

2. With nations like The Netherlands voting against and the absence of key players like Israel, India, Pakistan, USA, UK, China, and Russia, from the most recent signing of the Nuclear peace treaty, a resolution must find a compromise to incorporate the views of all the nations so involved?

3. What are the political challenges to establish the feasibility of renewable sources of energy?