

Draft G8 Climate Change and Sustainable Energy text for FASS– May 3rd**Climate Change and Sustainable Energy**

1. Our world is warming. Climate change is a serious long-term threat that has the potential to affect every part of the globe. And we know that by increasing the concentration of greenhouse gases in the atmosphere, mankind's activities are contributing to this warming. This is an issue we must address now.
2. At the same time, the world's energy needs are growing rapidly. Access to secure, reliable and affordable energy sources is fundamentally important for economic stability and growth.
3. Meeting these energy needs in a sustainable way is one of the greatest long-term challenges we face as a global community.
4. We have already made a start. The United Nations Framework Convention on Climate Change (UNFCCC) was a landmark agreement. We reaffirm our commitment to the UNFCCC and to its aim, to stabilise greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.
5. At Evian and again at Sea Island, we agreed on the need for the G8 to work together to develop innovative clean energy technologies. And there are already many examples of progress at all levels, ranging from the actions of individual companies, to cities and states, to national and international action.
6. Now, we need to accelerate our efforts. There is a powerful case for urgent action to develop and deploy cleaner and more efficient technologies:
 - There is now compelling evidence that [statement on scientific evidence of the need for action].
 - Local air pollution is a serious threat to human health and to ecosystems, particularly in the developing world. Every year, it causes millions of premature deaths, and suffering to millions more through respiratory disease. Through efficiency improvements and cleaner technologies, significant improvements to air quality and major human health benefits are possible.
 - Diverse and reliable energy supplies are essential to economic growth. Security of energy supply is a major concern to us all, particularly at this time of higher energy prices. We need to work together to make the most efficient use of our existing energy resources, and to shift to new, non-fossil fuel sources of energy.
 - Access to energy is essential for economic development, poverty alleviation and quality of life. Innovations in technology offer the potential to provide energy even to remote communities both sustainably and at a competitive cost.

- Climate variability and natural disasters already seriously undermine economic development and political stability. Climate change may increase the frequency and severity of extreme weather events, threatening future economic growth and human security.
 - Clear and early signals about the direction of policy from governments, and stable long-term policy frameworks, can promote innovation and provide the private sector with the confidence it needs to invest in cleaner technologies, minimising the costs of adjustment.
7. We now face a moment of opportunity. Some \$16 trillion will be invested in the world's energy systems over the next 25 years. If through our combined efforts, a growing share of this investment can be directed towards cleaner technologies, then we have a real hope of transforming our energy systems.
 8. If we miss this opportunity and fail to give a clear sense of direction, then we will be locked into an unsustainable future that will threaten our long-term security and prosperity.
 9. The world's developed economies have a responsibility to lead this agenda, and to work in partnership with the developing world to support strong and sustainable economic growth. The G8 therefore pledge to take action to promote a fundamental step change in the way we produce and use energy.
 10. We will improve the policy, regulatory and financing environment for clean energy technologies, to support rapid deployment and encourage private investment. We will implement new measures to promote research and development. We will encourage businesses and consumers to consider the energy implications of their choices. And we will promote the transfer of technologies to developing countries, taking into account their own energy needs and priorities.
 11. These actions will demonstrate that we are united in our aim of achieving substantial greenhouse gas reductions and moving towards a low-carbon global economy.
 12. We also need to consider how we deal with the impacts of our changing climate. Many developing countries already struggle to cope with existing climate variability and are particularly vulnerable to the adverse effects of climate change. We are concerned that the long-term effects of climate change may threaten the very existence of some small island developing States. We therefore pledge to take steps to improve the resilience of the world's most vulnerable countries to the risks of further climate change.
 13. Tackling climate change, and promoting clean technologies, is a challenge that will require our concerted efforts over a sustained period. [To be added: section on implementation / follow-up]

Programme of Action on Climate Change and Sustainable Energy

14. We agree to take forward actions in the following key areas:

- **Transforming the way we use energy**
- **Powering a cleaner future**
- **Promoting research and development**
- **Financing the transition to cleaner energy**
- **Managing the impact of climate change**

Transforming the way we use energy

15. Improvements to energy efficiency are the lowest cost way to reduce greenhouse gas emissions. They often pay for themselves, saving money and conserve scarce energy resources. Already, progress has been made. Today, IEA countries emit only half the amount of CO₂ per unit of GDP that they did thirty years ago, and energy efficiency technologies accounted for 80% of that reduction. However, the rate of energy efficiency improvement has slowed in the last 15 years – we need to create a further step change in the efficiency of our economies.

16. Energy efficiency is also a key issue for many non-IEA countries. We note, for instance, that China has an aspiration to halve the energy intensity of its economy by 2020.

17. At Evian, we agreed that energy efficiency is a key area for G8 action. And following agreement at the Sea Island Summit in 2004, the 3Rs initiative was launched in Japan this year – an important step towards encouraging more efficient use of resources and materials, which increases economic competitiveness whilst decreasing environmental impacts.

Transforming the way we use energy: Buildings

18. Energy consumption associated with buildings accounts for almost half of total final energy consumption in some G8 countries. Improving the energy efficiency of our existing building stock and raising standards for new build will deliver significant energy savings and lower operating costs.

19. Examples of action by G8 nations include implementation of the EU Buildings Directive, which lays down requirements for minimum standards for energy performance of buildings, and the home retrofit programme in Canada, which provides advice and financing to home owners to make their homes more energy efficient.

G8 Commitments

20. We will improve the efficiency of our building stock by:

- (a) Setting ambitious targets and timetables for reducing carbon emissions from the non-domestic public buildings we procure in our countries, reporting back to the G8 Summit in [2007]
- (b) Inviting the International Energy Agency (IEA) to lead a programme on transforming the market for energy efficient buildings. To do this we ask the IEA to:
 - undertake a study to review existing global building standards and codes
 - use its analysis to develop and implement a programme to promote the transformation of the market for the G8 and other interested countries
 - submit a progress report to the G8 in [2006]
 - develop a Technical Assistance Facility to assist in the development of better policy frameworks for buildings in developing countries

Transforming the way we use energy: Appliances

21. Residential appliances and equipment use 30% of all electricity generated in OECD countries. We should ensure that appliances on the market are designed to minimise energy use. In particular, we should look for opportunities to address the high levels of energy consumption from appliances on standby: across the G8, standby power consumes the equivalent of the output of twenty full-scale power stations.

G8 Commitments

- 22.** Recognising that innovation in energy efficiency will be encouraged by coherent international policies on labelling and standards, G8 countries agree to:
- (a) Fully endorse the IEA's 1 Watt Initiative, and pledge to support the IEA in establishing frameworks for reporting on these commitments by G8 countries
 - (b) Publish, through the IEA, their national priorities, product standards and participation in co-operative initiatives
 - (c) Work nationally and in co-operation with other countries to improve the environmental performance of products in priority sectors, including through the UN Marrakech process
 - (d) Explore the potential for further co-ordination of standards, including with non-G8 countries

Transforming the way we use energy: Road transport

23. Transport energy use is expected to nearly double worldwide by 2030. However, improvements in fuel efficiency and new technologies offer the opportunity to reduce both local and global pollutants. Policies such as vehicle labelling and tax incentives can encourage consumers to take up these technologies.

G8 Commitments

24. We agree to take actions to develop and promote the uptake of cleaner vehicles, by:

- (a) Setting ambitious targets and timetables for future sales of clean, low carbon vehicles in our countries and consider similar targets for the public procurement of these vehicles
- (b) Raising consumer awareness of the environmental impact of their vehicle choices. We will support initiatives such as the energy efficiency labelling of new cars, and where possible we will develop plans for the introduction of energy efficiency labels in our own countries
- (c) Agreeing to co-operate on technology development in areas including hydrogen vehicles, battery performance, and cleaner fuels including biofuels, with a view to making improvements in greenhouse gas emissions and local air quality
- (d) Welcoming the United Kingdom's initiative in hosting an international environmentally friendly vehicles conference in November as part of its G8 Presidency, following up on a previous Japanese event, and calling on all countries to attend and contribute to it at a high level

Transforming the way we use energy: Aviation

25. Aviation makes a significant and rising contribution to emissions of both local and global pollutants, although improvements in technology and in operational issues have the potential to limit emissions growth. In 1999 the Intergovernmental Panel on Climate Change published a Special Report on Aviation and the Global Atmosphere, which is the seminal work on aviation climate science; there would be great benefit from updating this work to take into account recent research.

G8 Commitments

26. The G8 commit to:

- (a) Undertake a programme of collaborative work to explore and accelerate the potential for operational advances that will improve fuel efficiency and reduce emissions in air transport
- (b) Commission [organisation] to conduct an assessment of the latest scientific understanding of aviation's impacts on the climate
- (c) Provide [\$X] for additional climate science research, aimed at improving our understanding of specific issues such as contrails and cirrus cloud effects, with the intention of using this to inform technological and operational responses

- (d) Work to co-ordinate our existing national research programmes on long-term technologies

Transforming the way we use energy: Industry

27. Each year commercial banks and international financial institutions (IFIs) invest, lend, mobilise or support capital expenditure valued at billions of dollars in a range of industrial and power projects. Commercial banks and IFIs are ideally placed to help their clients to reduce energy consumption, thereby cutting costs and emissions, and offering the potential for carbon credit sales under the Kyoto mechanisms.
28. The European Bank for Reconstruction and Development, for instance, has introduced an energy savings assessment for investments in energy intensive sectors as part of their credit approval process. Although client action on the results of the assessments is completely voluntary, the rate of client uptake of audit recommendations is around 80%.
29. There is also significant value in benchmarking the energy efficiency performance of different technologies in key sectors. Making this type of information widely available is a powerful way to promote the take-up of more efficient technologies.

G8 Commitments

30. We agree to:

- (a) Call on the Multilateral Development Banks to conduct energy savings assessments for all investments in new or expansion projects in energy intensive sectors, drawing on a [\$X] fund to be established by the G8 for this purpose
- (b) Call on Export Credit Agencies to promote awareness of this facility among project developers
- (c) Invite the IEA to carry out an initial analysis of energy efficiency measures, technologies and national policies, globally on a sector by sector basis, covering industrial efficiency, buildings, appliances, and vehicles
- (d) Establish a clearing house open to all nations that contains information on available technologies, best practices and national policies to encourage deployment of energy efficiency technologies

Powering a Cleaner Future

31. Reliable and affordable energy supplies are essential for strong economic growth, both in the G8 countries and in the rest of the world. Access to energy is also critical for poverty alleviation: in the developing world, 2 billion people lack access to modern energy services.

32. We commit to taking action to improve the efficiency of energy generation and transmission, and to maximise the potential of alternative sources of energy. We will also work to ensure that these technologies are made accessible to the developing world.
33. We focus particularly here on actions around the cleaner use of fossil fuels and on renewable power, as well as issues around transmission. [Statement on nuclear power, to be added following discussions].
34. We express our support for research into the use of hydrogen as an energy carrier, and of the work of the International Partnership for the Hydrogen Economy in co-ordinating research efforts in this area.

Powering a cleaner future: Cleaner Fossil Fuels

Improving the efficiency of fossil fuel generation

35. The world has substantial reserves of coal, and this fuel will continue to be an important part of the global energy mix in the coming decades. However, coal power generation generates the highest greenhouse gas emissions of all power generation options, approximately twice that of gas power generation. There are also impacts on human health, through local air pollution and through the safety risks associated with coal extraction.
36. There is considerable scope to reduce emissions from coal plants by ensuring that existing plant operates to its best potential, and by encouraging the transfer and uptake of new high-efficiency technologies, which need to be made available at an economic cost. Many of these measures also have the potential to be applied to gas and oil generation.

G8 Commitments

37. We will support the efficient operation of existing and new power plants by:
 - (a) Working with the IEA to hold workshops in major coal using economies to review and share experiences of bilateral work on energy efficiency assessments for power plants, and to recommend options to make best practice more accessible.
 - (b) Contributing to a [\$X] fund to follow up on the workshops for a programme of further assessments and dissemination, co-ordinated by the IEA, and building on existing programmes
 - (c) Calling on the IEA to carry out a benchmarking study of recently constructed plants, assessing which have the highest efficiencies and lowest emissions, and to disseminate this information widely, with a view to helping decision makers understand the benefits of new higher-efficiency technologies

- (d) Implementing a programme of projects to demonstrate the potential of advanced technologies
- (e) Supporting the World Bank/IFC review of existing environmental guidelines for new build power projects, and encouraging them to include a stronger reference to greenhouse gas emissions, alongside references to other pollutants

Carbon Capture and Storage (CCS)

- 38. Capturing and storing the carbon dioxide emitted from fossil fuel power generation has the potential for emissions reductions on a very large scale. But many technical, economic and public acceptance issues are yet to be resolved.
- 39. The CSLF (Carbon Sequestration Leadership Forum), a US initiative, is the major international co-ordinating forum for research into this technology.

G8 Commitments

- 40. We agree to accelerate the development of CCS technology by:
 - (a) Agreeing to fund a [\$X] collaborative research programme to determine the viability of geological CO₂ storage in developing countries
 - (b) Inviting the IEA to undertake an urgent study on definitions, costs, scope and regulatory options for ‘capture ready’ plant, with a view to establishing the feasibility of aiming to build all new coal plants in a way which leaves open the option of retrofitting CCS in the future
 - (c) Implementing a programme of projects to demonstrate the potential of CCS technologies, to include demonstrating “capture ready” plant in a developing country
 - (d) Endorsing the objectives and activities of the Carbon Sequestration Leadership Forum, and agreeing to expand the work of Forum to work with broader civil society to address the barriers to the public acceptability of CCS technology, and to look at how planning and regulatory frameworks can be strengthened

Capturing energy from methane

- 41. Methane, a powerful greenhouse gas, is the major component of natural gas, and losses from natural gas systems account for an estimated 16% of worldwide methane emissions. If this gas could be used rather than wasted, there would be significant benefits for energy supply and emissions reductions. Coalbed methane is a further potential source of energy.
- 42. The World Bank hosts a major international partnership on gas flaring called the Global Gas Flaring Reduction Partnership (GGFR). In addition, the US leads the

Methane-to-Markets Partnership focusing on advancing cost-effective, near-term methane recovery and use as a clean energy source.

G8 Commitments

43. We agree to:

- (a) Express our support for the Methane to Markets initiative and the World Bank Gas Flaring Reduction Partnership, and encourage expanded participation of all interested nations and of stakeholders
- (b) Work through the Bank to extend the GGFR Partnership beyond 2006

Powering a cleaner future: Renewable Power

44. Renewables have an important role in the future energy mix. The IEA estimate that, with the right policies in place, renewables could account for 32% of electricity generation by 2050. The G8 challenge is level the playing field with conventional technologies, and to reduce costs so that they become economically viable in both developed and developing countries.
45. Bioenergy has significant potential to contribute to a reduction in greenhouse gas emissions as well as providing a range of other benefits, including access to cleaner and reliable energy services for the poor, sustainable agriculture and land use, and waste management. There is significant potential to share experience, particularly from the developing world: Brazil, in particular, has developed a successful bioenergy industry. [Add reference to conclusions of Italian conference on bioenergy]

G8 Commitments

46. We will support the development of renewable energy by:

- (a) Creating a Review Mechanism to monitor the global uptake of renewable energy and to promote the achievement of Johannesburg Plan of Implementation and Bonn International Action Programme on Renewable Energy, starting with a Conference at the end of 2005, hosted by the Chinese government
- (b) [Subject to the forthcoming Italian conference]: Launching a major international Global Bioenergy Partnership as an ongoing effort to support wider biomass and biofuels deployment. In this partnership, we will work with developing countries on sharing best practice and case studies in biomass energy use, application, financing and national policy frameworks, including environmental safeguards.
- (c) Providing [\$X] to [the Partnership? – to be confirmed] to enable developing countries to build capacity, undertake R&D and assess opportunities for bioenergy

Powering a cleaner future: Electricity Grids

47. As well as changes to the way power is generated, there may need to be changes to the way power is transmitted. The growth of renewable and distributed generation technologies represent fresh challenges that the electricity networks of tomorrow will need to accommodate.

G8 Commitments

48. Today we agree to:

- (a) Commission the IEA to draw together research into the problems of integrating renewable energy sources into networks, and produce a report for G8 governments, which would be discussed at a conference in late 2006
- (b) Work with the IEA to identify and link “Centres of Excellence” to promote research and development in the developed and developing world
- (c) Promote workshops during 2006/07 aimed at overcoming technical, regulatory and commercial issues

Promoting research and development

We recognise the need to achieve faster progress in R&D and encourage full participation by developing countries. This means identifying challenges along the path for individual technologies, and adopting goals to move them further and faster.

Promoting research and development: R&D networks

49. There is a vast amount of research work across the field of energy technologies globally. There is clearly value to be had in joining up our efforts.

G8 Commitments

50. [Subject to outcomes of the WIRE meeting: We take note of the outcomes of the Energy Research and Innovation Workshop held in Oxford in May 2005, and agree to:

- (a) Create a global virtual network to identify energy research areas of common interest and facilitate ongoing cooperation
- (b) Set up and contribute to a global repository of energy research findings
- (c) Establish a [\$X] fund to enable developing countries to participate in relevant international research projects.]

Promoting research and development: International ‘Carbon Challenge’ Prize

51. There exist several areas in which traditional funding streams are failing and increased momentum could usefully be added. Prizes have been shown to raise the level of research into particular areas where other incentives may fail.
52. Russia currently administers an annual Global Energy International Prize that rewards scientists and researchers that have made significant advances in the field of energy production or conservation.

G8 Commitments

53. We acknowledge the value of the Russian prize in raising the awareness of the importance of energy research, and agree:
- (a) To build on this with a [\$X] G8 prize fund, administered by the IEA, to encourage new technology research achievements that will reduce greenhouse gas emissions

Financing the transition to cleaner energy

54. The IEA estimates that \$16 trillion will be invested in energy infrastructure worldwide before 2030. We believe that there is now a real opportunity now to shift a growing share of this investment towards cleaner energy technologies.

Financing the transition to cleaner energy: IFI and Export Credit Agency financing for clean technology

55. International financial institutions such as the World Bank are well placed to provide their clients with advice on improving their energy consumption. The World Bank has already announced that it would be committing to an average growth rate of 20 percent per year over the next five years for lending on renewable energy and energy efficiency projects. The G8 believes that the IFIs can do more to highlight the benefits of cleaner technologies to clients and increase their uptake, without imposing new conditionality.
56. In addition, Export Credit Agencies could have a key role in assisting in the deployment of renewable energy systems, if the higher upfront costs, longer payback periods and greater perceived risks associated with these projects can be addressed. Already, progress is being made, with the recent OECD agreement to extend credit terms for renewable energy projects to 15 years, in line with current provisions for nuclear power.

G8 Commitments

57. We agree:
- (a) To call on the World Bank to increase the share of total energy sector investments made on lower carbon and energy efficiency technologies beyond existing targets

- (b) To further call on the World Bank to ensure that 'lower-carbon' development options are integrated into its Country Assistance Strategies for countries with the highest predicted energy requirements
- (c) To encourage the multilateral development banks to establish policy dialogues with borrower countries to look at how the economic incentives of energy suppliers and consumers can be better aligned with the efficient production and use of energy
- (d) [To be added: IFI initiative on new financing platform for clean technologies]
- (e) To support a successful replenishment of the GEF this year, and to encourage the GEF to examine how market based carbon finance mechanisms can be better harnessed in the deployment of clean energy technologies
- (f) That our Export Credit Agencies should work to lower the cost of capital for cleaner energy projects, increase the low carbon energy percentage of their portfolios, create favourable provisions for low carbon technologies and lift the ceiling for local content

Financing the transition to cleaner energy: Emissions Trading and Offset Mechanisms

58. Emissions trading schemes and offset mechanisms are an effective tool to find least-cost reductions in emissions of key pollutants. By providing a clear and sustained price signal to business and long-term policy certainty, they have the potential to mobilise significant investment. Consistency in the core design features of different schemes is important to reduce costs to business, and to facilitate links between schemes to increase market liquidity.
59. The US pioneered emissions trading with a sulphur dioxide trading scheme in 1995. The EU Emissions Trading Scheme is the world's first comprehensive carbon trading scheme. Preparations are already underway for a scheme in Canada, and are under consideration in Japan and Russia.

G8 Commitments

60. We agree to:
- (a) Promote a multi-stakeholder dialogue on the technical aspects of emissions trading for carbon and for other pollutants, in order to build institutional capacity, share best practice and identify opportunities at local, regional and national levels for enhancing schemes' compatibility to facilitate linking, with the aim of exploring ways to creating deep and liquid trading markets for emissions quotas
 - (b) Those of us who have ratified the Kyoto Protocol confirm that we attach great importance to the successful operation of the flexible mechanisms (Joint

Implementation and the Clean Development Mechanism), and undertake to work together to strengthen the implementation of these. As a first step, we pledge [\$X] by the end of 2005 to improve the funding of the CDM Executive Board

Financing the transition to cleaner energy: Capacity building for policy, regulatory and financial issues

61. Policy, regulatory and financing frameworks need to be developed to provide a commercially attractive balance of risk and reward to private investors. Organisations such as UNEP, the UNDP and IEA, and initiatives such as the Renewable Energy & Energy Efficiency Partnership (REEEP), MEDREP, and REN21, are already doing important work in this area, which the G8 can build on.

G8 Commitments

62. We recognise the need to establish solid policy, regulatory and financial frameworks, particularly in the developing countries, and agree:

(a) To commit [\$X] million to fund the post-Johannesburg partnerships to develop a facility dedicated to the development of markets in sustainable energy in the major developing countries, including the facilitation of innovative finance models

Managing the impact of climate change

63. We recognise that some degree of climate change is already happening, and that even with concerted efforts to mitigate greenhouse gas emissions, further changes are inevitable given the inertia in our climate system.

64. Potential risks include increased frequency of droughts and floods, economic damage to agriculture and infrastructure, water stress, health impacts, and risks to coastal populations due to sea level rises. The February 2005 UK conference in Exeter on “Avoiding Dangerous Climate Change” provided an up-to-date assessment of the scientific evidence on these and other impacts.

65. The adverse effects of climate change present significant risks to sustainable growth and development, and could undermine the achievement of the Millennium Development Goals.

Managing the impact of climate change: Risk Management

66. Development activities in relevant sectors (such as agriculture and infrastructure) need to take into account the potential impact of future climate risks. In some cases, climate-risk will be negligible, while in others it could be potentially significant. A systematic approach for distinguishing between such cases is

required, so that development activities can be adapted, if necessary, at the discretion of the lender-borrower.

G8 Commitments

67. We look forward to further discussions on how development strategies can be strengthened to build national resistance to climate impacts, including at the Millennium Review Summit in September 2005, and agree to:

- a) Invite the World Bank to develop and implement 'best practice' guidelines for screening its development portfolio for climate risks, as well as how best to manage those risks, in consultation with local communities. We call on the Bank to have these guidelines ready by the end of 2006
- b) Invite other major multilateral and bilateral development organisations to develop and implement equivalent guidelines, and to report back on progress in 2007

Managing the impact of climate change: Africa

68. Africa is already vulnerable to climate variability and, like many developing countries, is now starting to experience the impacts of climate change. There is a particular need for Africa to develop the scientific capacity that will allow governments to integrate climate factors into development planning and resilience strategies.

69. The G8 agreed at Evian to strengthen international cooperation on global Earth observations. This is being taken forward through the development of a coordinating framework (GEOSS or Global Earth Observations System of Systems).

G8 Commitments

70. We will continue to exercise leadership in the area of Earth observation, and agree to:

- a) Provide [\$X] to strengthen the Regional Climate Outlook Forums (RCOF) in Africa, through the Global Climate Observing System (GCOS), with a view to developing fully operational regional climate centres in Africa
- b) Invite these regional climate centres to report on progress made to the Board of GCOS in 2007