



Beyond Kyoto: Shaping a New, Universal Climate Agreement for Moving to a Low Carbon Economy

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“National authorities should endeavour to promote the internalization of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the cost of pollution, with due regard to the public interest and without distorting international trade and investment”.

Principle 15. Rio Declaration on Environment and Development (1992)

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Dr Ted Christie has been involved in the climate change discussion since the early 1980s. Initially, as an Associate Professor (Applied Ecology) as an invited participant to a UNEP Workshop convened by the late Swedish climatologist, Dr Bert Bolin, at Stockholm. Later, in the 1990s as an environmental lawyer, articles were published in international law journals dealing with science and regulatory control of carbon dioxide emissions to tackle climate change ;and legal liability for coastal town planners and environmental professionals for advice related to sea level rise and climate change. In more recent years, a series of article on climate change issues - providing a cross –disciplinary perspective (law/science/ADR) - have been published on a number of web sites.

International Climate Change Agreements

- The international treaty the *United Nations Framework Convention on Climate Change* (“UNFCCC”) was a cooperative approach by countries, in 1992, to address the potential impacts of the global problem of climate change.
- In 1997, the Kyoto Protocol was adopted in order to strengthen the global response to climate change under the UNFCCC.
- The first stage involved countries being involved in negotiating the subject matter of the Kyoto Protocol; then, to become a *signatory* to it.
- The Kyoto Protocol like all - international treaties – becomes legally binding when a country consents to be bound by the treaty through the process of *ratification* (or *acceptance* or *approval*).
- ***191 Parties (190 States and the EU) have ratified the Kyoto Protocol. Australia did so in December 2007. The United States, although a signatory, has never ratified it. Canada withdrew its ratification in 2012.***

GHG Emission Reduction Targets and the Kyoto Protocol

- The Kyoto Protocol placed a heavier burden on developed countries to reduce GHG emissions.
- Kyoto recognized that the current high atmospheric concentrations of GHGs arose from the impact of more than 150 years of industrial activity.
- There were historical differences in the contributions of developed and developing countries to GHG emissions; also, differences in each country's economic and technical capacity to combat climate change.
- *Notwithstanding 'common responsibilities', there were important differences between the 'stated responsibilities' of developed and developing countries.*

SOURCE: The principle of 'common but differentiated responsibilities'. http://cisdl.org/public/docs/news/brief_common.pdf

Kyoto Protocol (“Kyoto”) Commitments

- **The first internationally binding emission reduction target set under Kyoto was for the five year period, 2008 to 2012.**
- **GHG emissions were to be reduced “by at least 5 per cent below 1990 levels (Article 3)”.**
- **However, this Kyoto emission reduction target only applied to 37 industrialized countries and the EC.**
- ***Large developing countries, such as China, India and Brazil, who had all ratified Kyoto, were excluded from emission reduction commitments.***

Outcomes from the UN Climate Change Conference, Doha, Qatar, December 2012

- **No agreement was reached to further reduce GHG emissions. Instead, existing emission reduction targets under Kyoto were simply extended for a second commitment period of eight years, 2013-2020.**
- **Measures to address the looming “climate fiscal cliff” were reviewed: agreement was reached on a possible new mechanism to compensate for the “loss and damage” in developing countries severely impacted by climate change. The deadline for its completion is 2015.**

SOURCE: “Climate fiscal cliff”.

<http://www.oxfam.org/en/grow/pressroom/pressrelease/2012-11-25/climate-fiscal-cliff-developing-countries-if-doha-no-new-money>

- ***Agreement was reached on a timetable tracking towards a new, universal climate agreement for all developing and developed countries. A new treaty is to be drafted by 2015 and to come into force by 2020.***

Response by Science to the Doha Outcomes

- **Simply maintaining existing Kyoto GHG emission reduction commitments for a further 8 years did not resonate with science as an appropriate springboard for future action to reach the agreed UN goal of a temperature rise below 2°C by 2100.**
- ***Without an acceleration towards higher emission reduction targets, science raised the spectre of projected temperature rises of 4-6°C by 2100.***

What is Australia's Present Position on GHG Emission Reduction Targets?

- In a significant development for Australia, the Federal Government has already legislated for increased future emission reduction targets, independently of Kyoto.
- One statutory object (at section 3) of the *Clean Energy Act 2011(Cth)* is:
 - “*(i) To take action directed towards meeting Australia's long-term target of reducing Australia's net greenhouse gas emissions to 80% below 2000 levels by 2050; and*
 - (ii) To take that action in a flexible and cost-effective way.”*

Coal-Generated Power and the Global Environment

- **Coal-fired power plants have a key role in electricity generation generating about 41% of the world's electricity.**
- **But, in some countries, coal fuels a greater percentage of electricity: South Africa (93%), PR China (79%), Australia (78%), Kazakhstan (75%), India (68%) and USA (45%).**
- **The World's primary energy demand continues to rise. The key drivers for the growing energy needs are developing countries, particularly the largest and fastest growing countries, China and India.**

SOURCE: World Coal Association: <http://www.worldcoal.org/coal/uses-of-coal/coal-electricity>

- ***A recent study “argues that coal generated power will need to be part of Australia's power generation mix for decades to come”.***

SOURCE: Global Change Institute, University of Queensland: <http://www.abc.net.au/am/content/2013/s3693216.htm>

The Challenge for Coal-Generated Power for Moving to a Low Carbon Economy

- A nation relying on coal to be part of developing a strong, growing and diversified economy also requires a pathway which can enhance its capacity for environmental protection to combat climate change.
- The challenge for drafting a new universal climate agreement for moving to a low carbon economy, in these circumstances, is agreeing to the appropriate pathway. Two possible options are:

(i) Moving to a low carbon economy could mean that coal-fired power stations should be rapidly shut down and replaced with other energy sources?

SOURCE: <http://www.iiasa.ac.at/web/www.iiasa.ac.at/Admin/INF/PR/Archive/NCC-2020-Two-Degree.en.html>

OR

(ii) Moving to a low carbon economy may still be achieved with coal-generated power, if CO₂ emissions could be effectively reduced through technology developments and regulatory control as part of the mix of measures to reduce emissions?

SOURCE: Regulatory control of GHG emissions.

http://www.environment-adr.com/uploads/LexisNexis%20Blog_Climate%20Change_Reg.%20Control.pdf

Coal-Generated Power and Sustainable Development

- ❖ These two options for coal-generated power to be part of a low carbon economy represent a classic sustainable development problem.
- ❖ The new universal climate agreement would need to counter-balance the multiple objectives of:
 - (i) Deriving benefits from industrial growth, where coal-generated power continues to be a primary source of energy through international trade; with*
 - (ii) Offsetting the immediate and long-term risks to the environment and climate change posed by trade in coal.*

Moving to a Low Carbon Economy: International Trade in Coal

- In terms of trade, the world's top five exporters of coal (steam/coking) in 2011, in decreasing order, were: Indonesia, Australia, Russia, USA and Colombia.
- In 2011, the world's top five importers of coal (steam/coking), in decreasing order, were: PR China, Japan, South Korea, India and Chinese Taipei.

SOURCE: World Coal Association: <http://www.worldcoal.org/resources/coal-statistics/>

- *These direct and indirect sources of CO₂ need to be considered against the major CO₂ emitting countries in 1990 – the baseline year for Kyoto's 5% emission reduction - and 2012.*

Moving to a Low Carbon Economy: Climate Change & Major CO₂ Emitting Countries

- In terms of potential environmental impacts, the world's top five sources of global CO₂ emissions in 2012, based on their share of total CO₂ emissions were: China (21.4%), USA (16.2%), India (4.9%), Russia (4.8%) and Brazil (4.1%).

SOURCE: STATISTA – The Statistics Portal

<http://www.statista.com/statistics/179260/the-largest-emitters-of-co2-in-the-world/>

- In 1990, the world's top five CO₂ emitting countries were: USA (22%), European Union [EU-27] (19%), Russian Federation (11%), China (11%) and India (3%).

SOURCE: Which are the top-25 CO₂ or GHG emitting countries?

<http://www.pbl.nl/en/Which-are-top-25-CO2-or-GHG-emitting-countries>

- *Of particular significance is that 80% of the growth in emissions in 2011 came from the growth in emissions in China; with the remainder being shared among the rest of the emerging economies in the developing world.*

SOURCE: Dr Pep Canadell, CSIRO Global Carbon Project: <http://www.abc.net.au/am/content/2012/s3645714.htm>

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The Status of ‘Common but Differentiated Responsibilities’

- Post-Kyoto, 1997, the principle of *‘common but differentiated responsibilities’* needs to be reviewed against recent and projected trends in global trade in coal, global dependence on coal-generated power and primary CO₂ emission sources.
- *“Common responsibilities”* for moving to a low carbon economy remain.
- *But it is difficult to now argue that important differences still exist between the “stated responsibilities” of all developed and developing countries for moving to a low carbon economy – notwithstanding that any new commitments and the level of development must be balanced.*

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A Possible Framework for the New Universal Climate Agreement

One pathway in which coal-generated power could remain a part of the mix of energy sources in a low carbon economy, may be to consider the framework adopted by the UN for addressing another major global environmental problem: the conservation of biodiversity.

Two complementary treaties, having quite different goals, exist:

- (i) The “Biodiversity Convention (1992)” focusses on management measures for the conservation of endangered species as well as sustainability; and***
- (ii) The “Convention on International Trade in Endangered Species (1973)” aims to ensure that international trade does not risk the survival of any species.***

Moving to a Low Carbon Economy

Applying the Endangered Species UN Treaty Framework to the New Universal Climate Agreement

Applying this framework to move to a low carbon economy - where coal-generated power remained as part of the global energy mix - would mean:

- (i) That existing Kyoto management measures to reduce emissions, as well as emission reduction targets, need to be reviewed and updated for their cost- and climate change effectiveness; and**
- (ii) New commitments would be required to ensure that international trade in fossil fuels did not contribute to an unacceptable risk for the UN goal of a temperature rise below 2°C by 2100 from being achieved.***

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Reviewing Kyoto Emission Reduction Commitments

- A very wide and diverse range of national measures are outlined under Kyoto. This enables countries the flexibility to rely on a mix of measures to meet their emission reduction commitments.
- A priority, now, is for the mix of national measures adopted to meet a country's emission reduction commitments to be evaluated, to ensure Article 2.1, Kyoto is complied with: that *sustainable development* is promoted.
- Under Kyoto, two “national measures” – and an “additional means” the ETS - have figured prominently to date .
- Two “national measures”, renewable forms of energy and enhancing energy efficiency in the national economy ,will continue to have a significant role in the future.
- *The future will also see a move towards CO₂ emission reduction targets far greater than 5% - where continued reliance on carbon-trading systems may mean that the carbon price could soar to \$200-\$500 for each tonne of CO₂. Could the cost-effectiveness of the ETS for limiting GHG emissions, in these circumstances, be thrown into question?*

SOURCE: The social cost of carbon: <http://sei-us.org/publications/id/416>

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Updating Kyoto National Measures to Reduce Emissions

- The listing of national measures to promote sustainable development set out in Kyoto need to be updated to take into account global developments in legal principles and scientific knowledge on emission reduction measures.
- Post-Kyoto, the landmark decision in 2007 of the US Supreme Court in *Massachusetts et al. v Environmental Protection Agency* 549 U.S. 497 (2007); 127 S. Ct. 1438 is a case in point.
- *Could this decision's application by the United States EPA for regulatory control of GHG emissions be adopted as a global national measure to enhance energy efficiency and so form part of the future mix of national measures to limit emissions?*

SOURCE: United States EPA and regulatory control of GHG emissions.

<http://www.epa.gov/climatechange/EPAactivities/regulatory-initiatives.html>

Moving to a Low Carbon Economy

International Trade in Fossil Fuels and Climate Change

- **What form could the commitments take in the new agreement to ensure that international trade in fossil fuels did not contribute to being an unacceptable risk for climate change – and be consistent with *Principle 16, Rio Declaration on Environment and Development (1992)*'?**
- ***Two possible examples might be:***
 - (i) Countries could pay a levy on each tonne of coal they either exported or imported. The levy could be applied:***
 - ***For developed countries, into research into clean coal technology and new environmentally sound technologies;***
 - ***'Clean Development Mechanisms' in developing countries; and***
 - ***A financial fund for developing countries confronted by the threat of the climate fiscal cliff.***
 - (ii) Regulatory control, using national CO₂ emission standards that were both cost- and climate change-effective, could be another commitment for countries importing coal.***

Conclusion

- In moving to a low carbon economy, setting goals for the universal climate agreement requires shared vision from governments.
- The “fair treatment” element of the United States EPA’s strategy of environmental justice is a relevant consideration for goal-setting.
SOURCE: Environmental justice : <http://www.epa.gov/compliance/environmentaljustice/basics/index.html>
- Specifically, to achieve the global goal of a temperature rise below 2°C by 2100, no country should bear a disproportionate share of the negative environmental consequences resulting from the agreement.
- *“Sustainability: a pathway for balancing large and economically risky carbon emission reductions and the protection of jobs and economic activity”.*

<http://www.environment-adr.com/uploads/IGP-GHG%20Blog.Strategy%20for%20Obama.pdf>