

Durban workshop notes  
Thursday 27 July  
Botanic Gardens Conference Room

Agenda:

1. **Rob Hounsome, CSIR “The science of climate change”**
2. **Patrick Bond, CCS: “South African energy policy and politics”**
3. **Graham Erion, LRC “International policy responses: Kyoto, CDM, COP12”**
4. **Des D'Sa, SDCEA “Linking climate change to local eco-justice campaigns”**
5. **Trevor Ngwane, APF “Climate change and local energy struggles”**
6. **Break-away Group Discussion**

### The Science of Climate Change

Rob Hounsome

CSIR: Natural Resources and the Environment

### **What is Climate Change?**

Climate change is defined as the serious disruption of the world's weather and climate patterns with impacts such as extreme weather events, significant rainfall variability and potentially sea level rise.

### **Greenhouse gas increases**

- The concentrations of greenhouse gases are increasing (carbon dioxide, methane and nitrous oxide)
- Atmospheric aerosol (suspended solid & liquid particles) concentrations are changing
- GHG's
  - Carbon dioxide (CO<sub>2</sub>): 1
  - Methane (CH<sub>4</sub>): 21
  - Nitrous oxide (N<sub>2</sub>O): 310
  - Hydrofluorocarbons (HFCs): 150-11700
  - Sulfurhexafluoride (SF<sub>6</sub>): 23900

### **Why is CC Happening?**

The world has grown dependent on non-renewable fossil fuels (WRI)

- Strong evidence that most climatic changes over the last 50 years are attributable to human activities: referred to as human-induced climate change
- Combustion of fossil fuels at the source of the problem
- World energy consumption increased 4.3 % in 2004, the biggest % rise since 1984 and the largest volume increase ever

All models agree that under all GHG emission scenarios the world will be warmer this century

### **Rainfall patterns:**

- A drying trend is evident over the sub-tropics

- Scenario modelling indicates that globally rainfall increases, but some places will get drier
- Most models indicate a drying in southern Africa

### **Some additional impacts.....**

- Globally, there has been a 2-4% increase in extreme weather events together with higher economic and insurance losses
- Sea level has risen at a rate of 0.1 - 0.2 mm/yr over the last 3000 yrs but has increased 4-8 cm over the past century

### **Implications in Africa**

- Africa will be worst affected by climate change
- IPCC predicts that “the effects of climate change are expected to be the greatest in developing countries in terms of loss of life and relative effects on investment and economy”
- Climate change is likely to intensify problems of poverty, inequitable land distribution, water availability and food security
- 14 countries in Africa are currently subject to water stress and a further 11 countries will experience the same problem in the next 25 yrs because of higher temperatures and a decrease in precipitation
- People will become increasingly vulnerable to natural disasters (such as storm events, flooding and droughts)
- Climate change is also expected to place an additional 80-120 million people at risk of hunger and 70-80% of these people will be in Africa

### **Impacts in Durban**

#### **Monthly Means of Daily Maximum & Minimum Temperatures, Present & Future**

- For the period 2070-2100, Durban is likely to experience an increase of 2-3 °C in daily maximum temperature for all months
- Daily minimum temperatures are expected to increase by 3-4 °C for all months
- Water availability is likely to become an issue particularly as evaporation rates increase with increases in temperature (Schulze, 2005)

#### **Ratio Future: Present of Occurrences of Daily Maximum Temperatures > 30°C**

- In Jan & Feb it is likely that Durban will experience 5-6 more days with temperatures higher than 30° C
- There are likely to be 12-14 more days with temperatures higher than 30°C in March, October & November (Schulze, 2005)

#### **Rainfall Events Per Month > 10mm & > 25 mm**

- Data indicates that overall average rainfall does not deviate much from present rainfall patterns, for the period 2070-2100
- Although rainfall does not deviate from the average, the distribution of rainfall is likely to change i.e. longer periods of no rainfall and shorter periods of intense rainfall (Schulze, 2005)

- Higher evaporation & higher water vapor capacity of the atmosphere (7% per °C)
  - Higher amount of water vapor in the atmosphere
- More water vapor per precipitation event
  - More extreme events
- Atmosphere warmer near the ground, cooler aloft
  - More convective energy available

#### **In Summary.....**

- Increases in vector borne diseases and their migration
- Increase in the frequency and intensity of floods and droughts
- Extinction and changes in the geographical distribution of plants and animals
- Increased infrastructure damage
- Increased erosion of coastal areas
- Decreased food security
- Decreased water availability
- Increased heat stress
- Higher energy consumption – e.g. increased use of air conditioners
- Increased economic losses due to property damage and decreases in tourism revenue and development opportunities along the coast

#### **Opponents also say that if global warming is real and man-made, no action need be taken now because:**

- Future scientific advances or engineering projects will remedy the problem before it becomes serious and for less money.
- A small amount of global warming would be benign or even beneficial, as increased carbon dioxide would benefit plant life, thus potentially becoming profitable for agriculture world-wide.
- There is a distinct correlation between GDP growth and greenhouse gas emissions. A cutback in emissions might lead to a decrease in the rate of GDP growth.

#### **TAKE HOME MESSAGE:**

- Climate change is real, observable and mostly human-caused
- 3 to 10 times greater climate change is unavoidable
- Impacts are already apparent and significant
- The greatest vulnerability is in the tropical developing world, especially Africa
- Acting now can only result in positive benefits – environmentally and socially

#### Dirty Politics: South African Energy Policies

Patrick Bond

School of Development Studies, Centre for Civil Society

University of KwaZulu-Natal, Durban

#### South Africa's eight energy policy problems

a) worsening access to clean energy by class, gender, race and geography;

- b) pressures to simultaneously commercialise and partially privatise Eskom and REDS;
- c) economic development strategies that remain energy-consumptive and capital-intensive;
- d) one of the world's worst contributions to global warming, measured by CO<sub>2</sub> per capita per GDP unit;
- e) a recently-launched, highly controversial World Bank carbon trading pilot scheme;
- f) the prospect of SA's intensified reliance upon nuclear-powered electricity generation;
- g) untapped potential in renewable energy, especially through solar and wind sources; and
- h) excessive South African influence over energy and development strategies across Southern and Central Africa.

#### SA energy apartheid (Jury)

- a) in rural areas of South Africa, approximately three million households burn fuelwood for their energy needs, causing deforestation, reduction of CO<sub>2</sub> sinks, and indoor health problems;
- b) the industrial sector consumes 2,6 quads of energy (57% of total primary energy consumption) and emits 66,8 M T of carbon (65% of total carbon emissions from fossil fuels), though industry's contribution to GDP is 29%;
- c) since 1970, South Africa consistently has consumed the most energy and emitted the most carbon per dollar of GDP among major countries. South African energy intensity measured 33,5 K BTU per \$unit (above), is nearly at China's level.

#### Disconnection epidemic

- a) municipal electricity disconnections over typical three months: 296 325
- b) electricity reconnections done over typical three months: 152 291
- c) number of households receiving electricity: 3 366 226
- d) 17% of households disconnected in a year

Source: latest 'Project Viability' statistics (October-December 2001), Department of Provincial and Local Government

#### A lifeline solution to access? the ANC's promise:

'ANC-led local government will provide all residents with a free basic amount of water, electricity and other municipal services, so as to help the poor. Those who use more than the basic amounts will pay for the extra they use.'

*(ANC campaign promise, 2000 municipal elections)*

#### SA greenhouse gas emissions (analysis by Mark Jury)

- South Africa contributes 1,8% of total Greenhouse Gases, making it one of the top contributing countries in the world;
- the energy sector is responsible for 87% of carbon dioxide (CO<sub>2</sub>), 96% of sulphur dioxide (SO<sub>2</sub>) and 94% of nitrous oxide emissions;

- with a domestic economy powered by coal, South Africa has experienced a five-fold increase in CO2 emissions since 1950;

### *The Extractive Industries Review*

Dec '03 RECOMMENDATIONS TO THE WORLD BANK, MANY OF WHICH WERE IMMEDIATELY REJECTED:

Phasing out lending in support of oil and coal and to invest its scarce development resources in renewable energy by setting lending targets of increasing renewable energy lending by 20% a year

SA GOVERNMENT'S EIR INTERVENTION, Feb '04:

Minister of minerals and energy Phumzile Mlambo-Ngcuka, argued to senior World Bank staff they should oppose 'green lobbyists'; instead promote African Mining Partnership.

Claim: 'We are already implementing sustainable development programmes'

Reality: massive corruption and eco-destruction in countries like Angola and Nigeria, and a failure to trickle benefits of mining down in even the best-case country, Botswana.

### **Pretoria's CDM policy**

Department of Environmental Affairs and Tourism National Climate Change Response Strategy, September 2004:

"South Africa, as a non-annex I country, is not required to reduce its emissions of greenhouse gases. However, the South African economy is highly dependent on fossil fuels and the country can be judged to be a significant emitter due to the relatively high values that can be derived for emissions intensity and emissions per capita. Such calculations put South Africa as one of the world's top 15 most energy intensive economies, with a significant contribution to greenhouse emissions...It should be understood up-front that CDM primarily presents a range of commercial opportunities, both big and small. This could be a very important source of foreign direct investment"

Instead...

- a) Radically new industrial policies.
- b) Tough state regulation of emissions.
- c) Massive investment in renewables.
- d) Waste reduction.
- e) Grassroots carbon reduction initiatives.

### **International Climate Policy Responses**

Graham Erion (For Questions: [graham@erion.ca](mailto:graham@erion.ca))

#### **1. Kyoto Protocol**

- Response to failure of "voluntary targets" in UNFCCC
- signed in Kyoto, Japan at COP3 in December 1997
- divided world up into Annex 1 (advanced industrialized countries) and Annex 2 (developing countries). Doctrine of common, but differentiated responsibility

- Annex 1 averages 5.2% reduction over 1990 levels on average b/t 2008-2012
- Annex 2 reaffirms commitment to “prevent dangerous climate change”
- 2 controversial aspects:
  1. Size of reduction (substance): 5.2% = completely inadequate. Argument of both environmentalists and sceptics. But it’s a baby step. Shows developed countries can take first step.
  2. Process for achieving reductions: carbon trading
    - modelled on US Acid Rain SO<sub>2</sub> trading regime
    - appears 3 different ways in text of Kyoto:
      1. Emissions Trading
      2. Joint Implementation
      3. Clean Development Mechanism
        - a. Additionality requirement
        - b. Sustainable development requirement
        - c. Carbon market trends:
        - d. **Role of the World Bank:** largest public sector investor and growing
        - e. **Low hanging fruit:** As of last June, 74% of emission reductions certified to date were for either methane capture (landfill) or HFC23 destruction (big deal just announced in China for 100 million MT). By contrast, traditional energy efficiency and renewable energy projects, which were initially expected to represent the bulk of the CDM, to now account for less than 5% of the market.
        - f. **concentration in middle income countries:** notably India, Brazil, and Chile. Emerging countries in the carbon market are China and Mexico. By contrast poorer countries, especially in Africa, have almost entirely been left behind.

## 2. Progress since Kyoto

### Montreal 2005

#### Mitigation Track

- adopted Marrakech Accord
- better funding for CDM executive board
- Post-2012: 2-tracks:
  1. MOP: parties that have ratified KP (so no US/Saudi) will commence discussions intended to extend reductions regime post-2012:
  2. COP: US and everyone else who didn’t ratify will take part in ‘non-binding’ talks that explicitly rule out any new commitments
    - a. Idea is that MOP can maintain global carbon market and US will eventually set up own domestic market and eventually “opt-in”

#### Adaptation Track

- day of high-level plenary: first 100 climate refugees from the Lateu settlement on Tegua island in Vanuatu

- Funding issue: Cost estimates to protect Tanzania's coastline are 50% more than the country's total GNP
- Policy Response: Adaptation Fund: distributed by GEF
  - o Problem of allocation: what countries get this money? Ones with most reduction potential for least amount of money.
  - o Problem of funding: 2% levy on CDM transactions: developing country tax on their own adaptation
  - o Problem of administration: World Bank?
- Solution? Five-year working group on adaptation

### Bonn 2006

- concerted effort to minimize progress at COP12:
  - o "no major decisions mandated" for the meeting; nothing significant will probably happen until 2008-2009
  - o Have already decided to limit the available time for meetings;
- Meeting observer: "a deliberate intention to slow down the process amongst some parties...none of the major actors had an interest or the political momentum to push for rapid progress at this stage."

### COP12 in Nairobi

- plans underway to have large grassroots presence from across Africa, especially South Africa
- activists want to put pressure on meeting to address some of the following:
  - o need for better/more adaptation funding
  - o highlight corporate climate criminals in Africa (i.e. Shell, Alcan, etc.)
  - o highlight failure of carbon trading (dubious CDM projects in Africa)

### The struggle for clean air in South Durban

Des D'sa, South Durban Community Environmental Alliance

- discussed strategy on outing Shell and working with international solidarity networks
- Incidents in South Durban
  - o On the 18<sup>th</sup> of October 2002 a fire broke out at Bresman, a Bitumen chemical factory in Jacobs resulting in an explosion where one worker died & one was injured
  - o On the 18 January 2005, there was a fire at the Benzene tank at the Engen Refinery.
- Problems with Flaring in South Durban – Shell & BP (Sapref)
  - o Children suffering from leukemia
- South Durban Community Supports Protests to Address Pollution
- "When we breathe the air of freedom we do not wish to choke on hidden fumes"  
Judge Albie Sachs

### Small Group Discussion

Participants were divided into 3 separate groups: policy, industry, and ecology. Here are their report backs:

### **Policy:**

- need more discussion of what policy is and how it relates to the constitution, etc.
  - o learn more about the processes and limitations
  - o more participation in policy process: grassroots/people driven approach
  - o legislation seen as an exclusive process; people wanted a stronger say in how their government runs/feel more ownership over the process

WSF: motivate for global simultaneous actions

Connecting with other struggles:

- housing: houses are for the poor, architects are for the rich; need green houses as shack dwellers are most vulnerable to climate impacts
- water: getting clean supply for all with droughts, etc. (connected with toilets issue)
- electricity: clean alternatives

Strategies

- make use of 2 powers: refuse to produce, refuse to consume

### **Ecology**

- concerns: ecosystem services: water, land, issues of landlessness, amount of arable land for food, spread of alien plants, jobs
  - o poor are most vulnerable communities to environmental destruction
- resources:
  - o knowledge
  - o tools (viable technologies)
  - o schools
  - o empowering opportunities (as opposed to fear-mongering, but that too)
  - o public opinion
  - o personal stories around climate change
- Action:
  - o education, spreading “appropriate awareness” how to get information to people around droughts (giving people tools: appropriate languages, don’t fear-monger: make information empowering, not scary)
  - o Public transport campaigning
  - o Ward meetings in Durban: get active community groups in meetings to meet with councillors and air issues
  - o Smashing corporations while building alternatives (don’t support those who don’t “walk the walk, not just talk the talk”)

### **Industry**

- Challenge: talking with the same language: disagreements around capitalism, wants v. needs
- strategies:

- general awareness of how CC affects people's lives in their future and their children's future?
- Connect pollution globally = pollution locally
- Alter industry? Completely different approach?
- go after advertising industry
- Civil action: stop corruption in civil service (?!?)
- Track impact of industry on species diversity and climate change
- Rural fisherman: changes in species of fish that you can now catch on-shore (i.e. jellyfish now in harbour)

**Final Plenary:**

- Some suggestion to target transportation around 2010 (very racialized discussion)
- CC is "new" for many people: education, awareness should come first and then campaigns/action come from those empowered (bottom up, instead of top down)
  - Need for more workshops
  - Link CC to existing struggles/social movements: zero waste, organic agriculture, anti-GE, renewable energy, legislation, biodiesel
  - KZN social movements forum: SMI