

National Planning Commission Dialogue on the Transition to a Low Carbon Economy

Liliesleaf, 28 February to 1 March 2011

OPENING AND DINNER

Minister Manuel's Welcome

The role of the commission is largely advisory. The NPC can be bold; it is not sitting in a silo and constrained, as with other ministries, it can reshape the way government responds to development challenges. It will take steps to having a clear plan for the country on the table by December. There are very few big planning commissions in the world and so little to compare with.

We have come here to have a dialogue on one of the most pressing issues affecting the world – climate change. We have to respond by reducing our emissions and in order to do that we need to be informed. SA made bold commitments in Copenhagen. Policy choices to deliver on these commitments are important. We need to understand our economy and be realistic about change. Change is a complex process – it is not linear and we must position ourselves.

There are great opportunities for change in our country, but our biggest focus is on poverty, inequality and unemployment.

Lord Stern

Managing the impacts of climate change and reducing poverty in a developing context: the contradictions and challenges

There are two defining challenges facing the world and these are poverty and climate change. We can't fail on the one without failing on the other. Failing to halt climate change will result in halting development.

When we talk about policy we have to understand the nature and scale of the problems. We are emitting more CO₂ than the planet can cope with and part of the problem relates to the concentration of emissions. The climate temperature increases because of the increase in concentration of CO₂ in the atmosphere. The problem of climate change is about people – thus we must both mitigate and adapt.

Climate change is a market failure because unlike other aspects of a market driven economy we don't pay for the emissions in the atmosphere. In all other areas you expect to pay for what you use or what you want. But in terms of emissions we don't pay and that is where it is a market failure. It is important to see this in terms of building good markets and not about breaking capitalism. It is about making markets work.

Let's look at the numbers: business as usual (BAU) will result in 730 ppm CO₂ equivalent by the end of the century. On this basis we are looking at a 30%-40% chance of a 5°C increase in temperature against pre industrial levels. To hold to a 2°C we must bring emissions down considerably. If the world economy increased by a factor of 3, emissions per unit of output would have to be 13 or 14% of what they are now. So what we need is an industrial revolution – we need a radical economic transformation.

We know change is possible, but the scale implies an industrial revolution and this will involve change and dislocation. We have to act everywhere – agriculture, buildings, power, industry and transport - it is not just about the power sector.

Mitigation, adaptation and development are intertwined and so the response must be everywhere. The industrial revolution is cross cutting and not just about the work of an environmental minister, but involves other ministries at government level. That is why planning and presidents' roles are important.

This change must be led by government policy – it can't work without government action. The other level of leadership must come from industry. The private sector is the vanguard of action and government the vanguard of policy. It is a partnership.

High carbon investment is risky and we must make it riskier and so regulation is important. Information is critical. SA has huge renewable potential and land. It is a country with natural endowments and a country that has demonstrated creativity and engineering skills by coal to liquids during the apartheid era. South Africa is in a good position to make new and far reaching changes.

At the international level there is a need for all political figures to take this seriously. Copenhagen was not a failure because out of that meeting came the Copenhagen Accord which was agreed to in Cancun. This laid a fragile platform, but stronger than most thought possible. The BASIC countries got together. Big countries of the developing world are taking leadership, often in the form of internal commitments, such as the twelfth Chinese 5-year plan, and this is important and South Africa is at the heart of that story.

The story is a growth story. High carbon will kill itself and so it is essential we move to low carbon. It is not about trade-offs but about making major investments and therefore is ultimately about commitments.

SESSION ONE: OVERVIEW OF THE SCIENCE

GUY MIDGLEY

What the science is saying: current thinking and research from an international and South African country perspective

Human actions are causing green house gases in the atmosphere and this is leading to climate change. 80% of CO₂ comes from fossil fuels and 20% from deforestation and land use. The extent of CO₂ in the atmosphere has been monitored since the 1950s and is increasing.

In 2009 the emissions dropped slightly because of the economic downturn however, the projection for next year is an increase largely due to developing countries.

The IPCC report states clearly that warming is due to the use of fossil fuels. Science is able to measure and record the amount of emissions going into the atmosphere, oceans and land. The ocean and land act as a sink in terms of absorbing emissions and slowing down climate change. Sinks remaining strong provide us with a powerful 'free' service. Evidence suggests that the ocean sink is weakening and as a result the planet is faced with a speeding up of climate change and global warming, increasing the urgency of the issue.

Evidence of warming is extensive and varied, including the melting of the ice mass in the Antarctica and Greenland. Because of its position straddling the tropics, Africa has warmed more than the global average. Global averages also include the oceans, which warm more slowly than land, meaning that average temperature increases on land will be higher than global averages.

Decisions made now will affect climate and impact projections. The IPCC reports between 2001 and 2007 point to increased danger of global warming and of the issues becoming more and more urgent. Even so, the IPCC leaves out the top curve of potential temperature rise. This is where politics and science start interacting, producing its own set of difficulties. As the science improves, however, it shows the issue to be more and more urgent.

In terms of South Africa there is clear evidence of changes in extreme weather conditions and fires which are impacting on water, agriculture and human health. Initial estimations show the economic impact of extreme events and climate impacts in South Africa to be around R1 billion/annum. It is important to note that climate impacts are substantially *local* events, concentrated spatially; they can take out poor communities.

Thinking through the complexity of climate impacts on the economy and development:

- growing conditions for export fruits in the Western Cape are changing (just not getting the cold spells they need) and farmers are starting to rely on growth hormones to keep production levels up, however, these are not liked in the EU, seriously affecting markets and rural jobs;
- bleaching is starting to take place in the corral reefs of Sodwana Bay in December, not March, impacting the reefs and the fishing livelihoods of local communities;
- we are starting to see serious bush encroachment in the Eastern Cape with the rise in CO₂. This is producing substantial shifts in iconic African open plains that evolved thousands of years ago. Is there some opportunity here in harvesting this biomass?

We don't fully understand the economics of poverty in this respect.

In conclusion, the science is defensible and there is cause for urgency. Climate mitigation and adaptation actions are an opportunity for South Africa. We need also to be wary of geo-engineering and the possibility of 'crazy ideas being unleashed'.

The discussion raised a number of issues – of which the key are outlined below.

The science makes it clear that we must act now. The current ambition of most countries within the COP process is to curb temperature rise to a 2°C rise in temperature. Some developing countries are saying it must not be more than 1.5°. For South Africa a 2°C would probably mean a 3-4°C rise inland. In other words for Africa the temperature levels will be higher.

The science should be able to describe the degree of risk and explain the urgency in a way in which the world will be more ready to respond. Depending on the data used the outcome and emphasis will alter. The scientists must be honest and tell the story and give warnings. The issue is how to get the message across. Many of the models don't consider the extreme situations as the outcomes are so dire. Politicians tend to focus on low risk and not high risk. The interface between the science and politics is an issue.

SESSION TWO: THE ECONOMICS OF CLIMATE CHANGE AND THE SOUTH AFRICAN POLICY RESPONSE

LORD STERN

The economy in a resource constrained world

The costs of inaction could be as much as 5-20% of consumption each year as opposed to 1-2% for prompt action. But it is important to look beyond a rather static cost-benefit approach, as the situation is enormously dynamic. This requires us to look at risk management and understand the economics of transformation. We underestimated the risks and costs: a lot of the effects of climate change are coming through faster than predicted; the absorptive capacity of the earth is decreasing while the rate of emissions increasing faster than predicted.

We must describe the risks in such a way that people can understand the relationship to the planet. We have to explain what will happen. Given the extent of the problem people will be moving from their homes either from close to the ocean due to sea level rises or rural to urban moves – with this comes the risk of conflict as people moving means conflict. How do we best manage those risks and implement policies? This is not about doing the things we did before in a less expensive way. It is about a radical transformation of the economy. How do we promote and manage a new industrial revolution that transforms how we produce and consume. Policies must support an alternative economic system. It is about promoting a radical change and sharing the investments. Sharing new technologies and seeing development as a different way of doing things – seeing the economy as a whole and not split into sectors, seeing mitigation and adaptation as, operationally, the same thing. This produces huge opportunities, but there will also be some 'blood on the carpet. This is not discarding what went before, but encouraging a necessary shift.

There have been six market failures that need to be addressed:

- Costing GHG emissions: this has been a free service
- The power of ideas: it is important that the system capture and support the value of ideas (traditionally it does not pay for business to share ideas, but here we can gain from others implementing our ideas)
- Networks and infrastructure underpinning the economy, transport and communication
- Capital markets: this is about financing risky business, which involves creating the right incentives, reducing and sharing risk and increasing investment. High carbon investment needs to be made far more risky in order to lead to change
- Property markets have not engaged in energy efficiency, planning and building regulations and this has not yet helped to force change
- Information: we need to think about where information fails to produce 'rational' action, for example where energy efficiency investment doesn't take place because people wait for the next technology – this produces a good case for regulation; on the other hand information can result in changing values about what is responsible and this can be hugely transformative, such as with drinking and driving.

South Africa is in a strong position to be a leader in such an economic transformation. The country has natural endowments for renewable energy development, land and labour, high technology and skills and a sophisticated financing sector. The country has shown innovation in the past and now needs to do so again.

PROFESSOR TOM HELLER

Business strategies for transitioning to a low carbon economy

With the caveat that business is hugely diverse – ranging from energy producers, to energy users, financial houses; differing across the world in terms of how they do fundamental things - Heller opened by asking three questions:

- **How does business react to climate change and a transformation in the economy – the general answer is: badly.** We need to understand what is driving a firm and if we expect change to be welcomed with open arms we are dreaming! Business as Usual is an adaptive response (policies, technologies, practices, organisations) to the last successful technological disruption. Business does not want to see assets become obsolete; they will defend it, protect it and tell government to pay them the full cost of changing if they demand this change. This is reinforced by politically retained and induced subsidies. The few small firms coming through with the new technology will have no political power developed and won't easily influence the complementary activities of policy, organisation and finance to come with it.
- **What are they reacting to – they tend to be reactive rather than making the changes that are needed and the international system is not providing nearly enough incentives for positive reaction.** Interestingly, the responses/changes taking place are not where they were expected to be – in the developed nations, with finance and technology flowing to developing countries. Rather, change has been in developing countries such as China, Brazil and Indonesia. These have been internally driven changes, with high growth and other changes underway, the transition costs of moving is lowest, and the money to invest in new technology greater. This indicates that the focus of investment, contrary to the standard business school models, should look at where markets are changing. Another important aspect of this is that these are economies looking to the future, not trying to recapture a glorious past.
- **How ought they respond – governments develop policies to facilitate transformation and business has a huge role to shape those policies.** Business must get on board because they will know better than government whether those policies are effective.

There is an enormous potential for productivity increases with the resources we have and the by-product of that is a reduction in emissions. Business must lead in investment not policy. If government builds a proper policy structure business will respond. They require regulation to enforce that response.

Looking at the example of the lack of progress of energy efficiency in developed countries, it is worth noting that firms don't believe in long term policy. They believe that government will yield to business practice. In Europe efficiency is now being mandated (rather than using price mechanisms); in China the reduction of energy intensity is a commitment with mandates and targets for the top 1 000 firms. The cost of meeting these commitments is paid for by the state.

It is important to identify the country goals, such as poverty reduction, and how to hit those goals because growth always triumphs. Put welfare of people first then identify interventions that support broad goals of climate protection and development, e.g. putting degraded land back into production, paying for agricultural extension and cushioning the poor from the transition costs.

ROB DAVIES

A South African perspective on the economics

South Africa has very high emissions because its energy mix is fundamentally dirty. Because the build programme for electricity into the future is still going to be coal dominated it will be important for other sectors to achieve the Copenhagen accord targets of 34% and 42%. It is also worth noting that investment in the IRP2 'Revised Balance Scenario' does impose a slight cost on the economy because the cost of investing in clean energy technology requires more investment, so some crowding out in the economy (about 2% by 2035).

Carbon pricing will have an impact on relative prices and on the production structure. Work is underway on getting the price of carbon right for achieving the maximum amount of emissions reductions for cost imposed.

This must also look at the impact of such a tax on growth and jobs. Some findings include:

- best carbon pricing seems to be in the region of R150 – R250/tonne carbon dioxide. Modelling indicates that at R400/tonne the effect on emissions actually diminishes due to the tax impositions strangling business' ability to invest in new technologies and changes.
- Pricing of carbon does appear to slow down emissions growth, but BAU path doesn't include the negative functions from climate change.
- South Africa is a 'climate taker', meaning that we won't benefit from our own efforts on climate mitigation. However, action may make sense due to potential negative feedback from inaction, such as other countries imposing trade barriers.
- Consumption tax appears to be better in achieving emission targets for lower loss of GDP, BUT some debate here as consumption tax (vs production tax) provides greater opportunities for abuse.
- There does seem to be a correlation between emission intensity and employment intensity of sectors, with more labour intensive sectors showing themselves to be lower emitters.

In conclusion Davies noted that energy data is hard to get hold of in South Africa.

PETER LUKEY

The South African Long term mitigation scenarios and the climate change response strategy green paper: translating the numbers into action.

We have a clear indication of where we need to go. The GHG inventory shows that our emissions are largely coming from coal and transport. The LTMS process worked on mitigation wedges and included costs. Escalating carbon tax was shown to be very important in shifting our emissions levels. The Copenhagen Accord figures were against BAU and would allow our emissions to peak, plateau and then decline by 2025. The peak for emissions was set at 550ppm CO₂ equivalent.

While policy has not put an actual number to its emissions commitments, there has been a level of consistency in the message over the past three years or so.

The climate change response strategy repeats the Copenhagen undertaking, but we now realise that our emissions are greater than estimated in the LTMS. In 2010 our emissions are actually tracking the growth without constraint path as outlined in the LTMS, which is far away from the required by science move that is needed – and our international commitments. Our GHG emissions have increased by 55% in 2010 against 1990 levels ranging from 350 in 1990 to 542 Mt CO₂-equivalent per annum in 2010.

There is a lot of talk in SA, but the big things have not been done. The IRP2010 keeps us on a current development path and is not moving significantly enough to RBS. We need not just an industrial revolution, but a development revolution.

The discussion was very fruitful and raised some of the following issues:

- How does government coordinate planning –we need to make the connections between the LTMS/CC Strategy/New Growth path/Green Economy, and connections to the countries development goals – jobs, inclusion, income. Reality in South Africa is that we are still putting our money into coal.
- We are currently driven by economic and financial measures – if we don't act soon there will be no planet left
- Our metros are set to double by 2025 with move from rural areas to urban centres – capitalist agrarian revolution
- What about financial support to SA, our Copenhagen pledge involved a commitment with money
- We need business to collaborate and we need credible targets. We need a proactive dialogue between government and industry.
- We need real action on the ground and guidance as to what we should be 'putting our shoulders to'.

- We are way off the Copenhagen commitments. How will this affect South Africa's credibility locally and internationally?

Responses from the speakers

If it is a race between growth and climate response in the short run, growth will always win. We have to show how we will break the link between production and consumption and emissions. There can be an increase in material standards in the world for a while. Ultimately we must break those links, but not sure yet how to do it.

We have to act now or the costs of transformation will increase significantly, so stop talking and act. The costs of inaction are the most regressive (i.e. largest impact on the poor) of all approaches. Identify important areas to get on with it – improving degraded land, changing industry, getting efficiency happening. We must use the pressure of regulation and price mechanisms and combine this with strong support for research and development – it is not about overcoming capitalism but doing it differently, costing GHG emissions for instance.

While the instinct is to deal with the challenge strictly through prices, this is not adequate. A carbon tax is good, but it won't deal with behaviour changes, land use problems, problems of innovation. Here we need complementary measures. We need to correct the signals around innovations, need technology breakthroughs, but this must be coupled with mandates (e.g for efficiency) and incentives. Rural economies are substantially dependent on remittances from urban centres – so, we need to build proper cities to help rural areas. We need labour intensive industries.

With regard to our credibility as a country in terms of international emissions reduction commitments, we must ensure that we do not keep readjusting the targets. Conditionality (our commitments reliant on international funding streams) is the right strategic approach and our commitments are dependent on the size and scope of support, but simply changing targets if not meeting them will send out a very bad signal.

To note: the LTMS is a piece of research – a scenario, robust and important. The IRP2010 is a real plan in process. We are not doing very well.

SESSION THREE: POLICY IMPLICATIONS FOR SOUTH AFRICA

Panel Discussion exploring the policy implications and 'tough choices' in the transition to a low carbon economy, with a focus on the coal and mineral, energy and electricity and transport sectors

ROGER BAXTER

Business accepts the precautionary principle. It needs practical issues to be addressed that would enable it to play a more meaningful role in responding to climate change. However it is important to note where we sit as a country and put into perspective our contributions to global GHG emissions. South Africa contributes between 1.1% and 1.4% of total global GHG emissions and 0.9% of GDP.

The MEC has formed the foundation of the SA economy for the past 120 years and continues to play a significant role. It was responsible for galvanising development in our country. It accounts for 20% of GDP, 94% of the country's electricity production, 30% of liquid fuels production and about 2 million direct and indirect jobs in the economy. The government's New Growth Path and IPAP are targeting a growth in employment and a growth in the MEC. Despite being relative energy/carbon intensive South Africa has the largest in situ mineral value in the world. With no constraints this could realise 4% growth. This requires energy security and cost competitiveness. How to we address this conundrum?

The Chamber believes that SA can be a world leader in addressing the challenge of climate change but not necessarily in terms of reducing CO₂ emissions or the introduction of high carbon taxes. They advocate pushing for a collective global agreement.

The country needs a much higher level of economic growth to tackle the country's high unemployment and poverty rates.

Structural transformation of SA's economy from the MEC is not simple and would require a huge leap into new areas. To shift to a manufacturing green economy will require incentives, skilled human capital and an enabling framework. Instigating a carbon tax would have a negative impact on SA competitive edge and lead to investments in other countries.

It is very hard for us to go from our existing industrial base to a new industrial base – we must be practical, face reality – such as a need for energy security and understand our situation. Time and expense will be needed to make such changes and thus a long phase in period should be considered.

ZAVAREH RUSTOMJEE

The NIRP2 assumptions are based on a reduction in the energy intensity of the economy. The plan forecasts require 34% more energy efficiency in every investment from 2010 onward. However, if industrial policy is promoting regeneration of its industrial base then the decline in energy intensity will be slower than predicted. The focus is on reducing emissions and growing the economy by 2025 through a shift from coal and developing EEDSM. Energy intensity in SA peaked in 2008 and then declined in line with the global economic downturn.

The MEC dominates our national electricity consumption at 39.2% in 2008, with mining being the largest consumer at 13.8%. Of this gold (hoisting and cooling technologies) accounts for 50% of electricity consumption, platinum (smelting activity) 33% and coal 10%. Intensity here is likely to increase. The answer is for us to turn to gas as an alternative.

In looking at investments going forward, the MEC contribution to GDP, based on 2006 figures, has grown; non-MEC manufacture (though the horizontal linkages between MEC and manufacture so strong this divide doesn't really make sense in our economy) has stagnated (notably the motor industry) and the finance and insurance sector is increasing.

Our industrial structure is focused on a MEC because that is the way in which our political economy has evolved – it has been our development path, the focus of successive government industrial policies. Energy intensive reduction targets for MEC may be unrealistic going forward.

To shift towards a low carbon growth path will require industrial policy diversification out of the MEC. We need to consider, for example, should business have the same access to electricity whether they are energy intensive or creating a million jobs?

JEREMY CRONIN

Transport is responsible for 25% of our national energy demand. It is the most rapidly growing source of GHG emissions in SA. The challenges, which relate to our relative, but skewed 'distance from markets' (no regional markets in Africa, etc), are:

- 95% of our exports and imports are sea borne
- Our mining centres and industrial heartland are far from sea ports
- Tourism depends on long haul flights

We need to prioritise our markets better and have a better balance between road and rail freight.

A huge factor in our transport sector relates to our urban form and the fact that our cities are characterised by low density urban sprawl. Mobility, access, democratising and deracialising our urban areas is vital. We must transform our geography so that it facilitates inclusion, economic development, jobs and resource efficiency, climate and environment protection.

Transport represents a huge challenge for our democracy. Government has no comprehensive handle on land use planning. Infrastructure continues to be biased towards cars. Factors contributing to this relate to our country being relatively sparsely populated, the apartheid era and its impact on urban form – segregated townships, white car-ownership and so on. Since the end of apartheid, there have been 1 million farm evictions, the development of 3.1 m RDP houses on the periphery of cities and all of this is framed by poor planning.

The percentage of household expenditure on transport is high in poor households and this discourages people from seeking work – largely because the cost of transport is too high and makes low paid jobs unattractive. In addition distances are far because of urban sprawl. "A fate worse than being exploited by capitalism is not being exploited by capitalism!"

Responses to the problem include:

- Modal shifts
- Travel demand management, parking and congestion charges
- Importance of planning
- Land use management
- Alignment of policies
- Devolution of transport and land planning to the local sphere

HARALD WINKLER

While we may only contribute 1% to global emissions, in terms of the Indian 'fair share' analysis, which allows 5Gt/capita, South African emissions are far too high.

It is important to look at how we make decisions around energy. The IRP2 represents a major investment program. This does not come along often and we must ask 'are we investing wisely?'

There are three broad areas in which we can reduce our GHG emissions and these are through; energy efficiency, our fuel mix and in particular the production of electricity and our economic structure through a long term changes in the economic structure (shifting from carbon intensive industries).

The IRP2010 does call for energy efficiency, but from about 2018 it plateaus far below the identified potential with no predicted or expected increase in the amount of DSM. The question that needs to be asked and answered is why there is no growth anticipated in EE beyond 2018.

How do we avoid building more than we need? Over and under estimating demand is very expensive. DSM is crucial in reducing consumption and yet we are on the cusp of a major investment programme in electricity supply infrastructure and what we build now will be around for half a century and locks us in to a high carbon future.

In electricity supply there are three clear options, coal, nuclear and renewable. Both nuclear and solar are still expensive compared to coal (without carbon price). The IRP 2010 integrates carbon but not significantly enough. Clear case through modelling that renewable have a greater job creation potential than nuclear. There are opportunities and these include:

- Meet development objectives in more sustainable manner
- Manage energy demand
- Invest in low carbon electricity generation capacity
- Carbon tax at a level that will achieve GHG emissions under peak, plateau and decline
- Align low carbon and climate resilient economy with knowledge

It is important that we remember that the price increases in electricity that the country is and will continue to experience are due to new build and not carbon constraints at this stage.

“The climate is simply a physical system that we can’t negotiate with.”

The discussion raised a number of issues including:

The business sector needs to understand the emissions profile better, so that mitigation actions respond to this, as well as what they can do to shift towards a low carbon economy

Noted that while South Africa may have important advantages in raw materials and cheap power, the heavy industrial growth path continues to be subsidised, giving it an unfair advantage relative to other sectors.

There is market failure, but also mundane governance failure, in the form of a lack of capacity in key government departments and inability to enforce government’s own planning processes, for example while there is a good regulatory framework for energy planning (IEP and IRP) this simply doesn’t work - the IRP has been developed but the IEP has not yet happened.

Issue of embedded energy in exports, which is very high in South Africa as a proportion of our total emissions, raises question of whether we focus on consumption or production when targeting emissions reduction.

70% of the demand projections in the IRP are allocated to the MEC. We need to query this kind of assumption. Does it align with government’s climate commitments, growth and development plans?

Government is poised to make massive investment in the energy and fuel sectors and we need to think these through before committing such large amounts of public funds.

Four parallel discussion sessions to examine the implications of a low carbon economic transition:

Employment

Key questions and issues surfaced by the group

- We need a more job intensive growth path on the whole and will a low carbon economy complementary to this need?
- Are we prioritising people and/or planet?
- Shouldn't we be aiming for a low carbon economy regardless of job creation potential?
- Will we run the risk of sabotaging the successful implementation of a low carbon economic strategy by placing an unfair burden of job creation on it when our existing economic context is unable to address this? Particularly as our current economic system attaches greater value to capital investment than to people and the planet.
- We need to recognise that there are going to be huge costs for the few large emitters to make the transition and these are the companies that provide millions of jobs and therefore there could be a negative impact on employment numbers. In addition we are investing right now in long term energy intensive, low job creation and expensive electricity and transport programmes that will divert funds from employment programmes.
- The group recognised that there is an opportunity to address existing challenges of poverty and employment with a transition to a low carbon economy, and yes we should look out for opportunities to harness jobs during the transition, but the low carbon economy is but one means among many to address those existing needs and they will not go away simply by transitioning to a low carbon economy.

Opportunities and next steps

- **Plans should respond to what we have and what we need, not what we wish for.**
- **We should create an environment where renewable energy can flourish – simply because this is important from the climate mitigation perspective, not because it provides a solution to employment.**
- **It is easier for new businesses to set up as low carbon emitters from day 1.**
- **The NPC has to look at broad brush stroke solutions that can address large scale needs, can't consider small scale solutions now.**
- **Carbon taxes can be used to fund the skills levy fund i.e. don't tax companies on multiple levels. By the same token individuals can't be taxed for toll roads AND carbon taxes at the same time.**
- **We should be subsidising labour intensive industries rather than export production, energy intensive industries.**
- **Micro programs like domestic solar roll-out can create jobs.**
- **Ensuring enhancement of livelihoods and good infrastructure can lead to levels of wellbeing that are not dependent on employment e.g. growing food, accessing sun energy, spending less on transport, living in safe communities, having access to education that can lead to entrepreneurship can surpass the gains of employment of individuals.**

Technology, innovation and industrial development

Technology key issues and questions

- Can we look at technology as an enabler/dialogue to take us to a low carbon economy?
- Identify where emissions coming from, what kind of technology is needed to mitigate and adapt/ and what exists or not – how do you fill the gap?
- Clear technology pathway to drive an industrialisation plan – need linkages between the IPAP and the renewable energy policy directives
- Give strong signals to industry to innovate in a particular area
- What is the status quo of the emissions in South Africa? Where are the technologies going to come from? Need a baseline of what is available and establish R&D areas where this can be further developed.
- What is industry going to be doing vs. what is government going to be doing?
 - ♦ Industry is in a survival mode because of the embedded impact on competitiveness and there is a willingness – need a global and national framework from government
 - ♦ Real question is in order to develop industry onto lower carbon economy – we need to know what we can change?
 - ♦ Localised suppliers – is it the local financial institutions that place more reliance on international projects with long track record of commercial operation of this technology
- Difficulty is the funding strategy and the need to provide continuity of the funding – “it is the economic constraint”. Money is locked into MEC – there should be a strong funding strategy
- Policy changes needed for mainstreaming the issue of technology in existing planning processes for state bulk infrastructure programmes

Innovation – key issues and questions

- Consider an innovation approach that is step wise – CSIR, Innovation Hub etc is not happening
- Regulatory pressures may promote innovation – *PPP approach on research and private sector innovation and working through existing channels? Says that there is no channel for referring new ideas in SA Inc.*
- Cooperative Research Centres? Happening in pockets but PPP approach would work better because there is a guarantee that they will enforce

Industrial Development

- RE, locomotives issues around procurement are good examples – current IPAP is based on business as usual – how do we build sectors? Need to go back to high emission sectors and what technologies do we need to introduce to make the transition
- Need promotional regulatory frameworks to mobilise waste management and beneficiation of the waste management streams (Air Quality Act)
- Energy policy should drive industrialisation policy and vice versa (IEP)

Key action points

- **There is a need for formal planning to identify long term demand for specific components/technologies at scale – to give positive market signals**
- **Improve the granularity and disaggregating of the numbers for emission reductions and the quality of the data significantly for high potential reductions.**
- **Institutional mechanisms for risk allocation in terms of a funding strategy of innovation**
- **Flagship for technology and innovation roll out is to green the national infrastructure programme**

Infrastructure and the spatial economy

Summary points from a rich and expansive discussion.

What needs to change?

- The tension between mineral-energy complex versus a green economic agenda needs to be surfaced and addressed more explicitly.
- Governance arrangements – intergovernmental relation, regulatory systems and the skills base of the state – need to be addressed urgently if a new approach is to be pursued.
- Land-use regulations need to be reformed to counter settlement inefficiencies and the perpetuation of very low densities.
- Get a handle on the “imagination gap” that continues to hamper the sustainable human settlement agenda. Can we adopt a less glossy, more inclusive, even if gritty, conception of where we want to go?
- Recognize and augment the important changes that are afoot with regard to greater public (transport) investment and also changing attitudes of the private sector so as to foster larger coalitions of the willing and able toward a low carbon economy.

Next Steps:

- **Assemble and package public enthusiasm and political support in the wake of Cop 17 preparations. Such a package must specify the critical priority interventions and investments over the next 5 years to really shift the national terms of the debate and investment.**
- **In building the “jobs” rationale for a low carbon economy and society, keep in mind the different imperatives and pressures that arise from the pursuit of viable livelihoods (by the formally unemployed) and decent jobs in the formal economy.**
- **Interrogate and detail the medium-term infrastructure investment package announced by Minister Gordhan.**
 - ♦ **Let’s change the criteria to specify the programme.**
 - ♦ **Undertake a clear study on what this investment is about?**
 - ♦ **Answer whether it practically advances a low carbon/green economy?**
 - ♦ **If not, what about it should change to contribute to such a systemic shift.**
- **Develop a national infrastructure plan, even if only indicative.**
- **Specify how government and other public investments will be made climate-proof at the level of project design.**
- **Reorganise and recalibrate government in line with the broader infrastructure transition to low-carbon imperatives alluded to above.**
- **Reform critical regulatory instruments to foster a more efficient settlement form by using local land-use and zoning regulations.**
- **Be ambitious and offer regulatory certainty so that investors have time to adjust and can assess the medium-term risk.**
- **Develop appropriate financing policies and instruments to support the transition to low-carbon resource consumption settlement and logistics systems.**

The minerals and energy complex

Key issues and challenges raised to identifying action

- **Planning**

A Transitional Plan should be formulated to direct the process of moving towards a low-carbon economy and this might be a plan with time frames.

- **Understanding Risk to the South African Economy**

It was proposed that the risk of not making the transition to a low-carbon economy should be understood and clearly communicated.

- **Policy**

A key consideration was the coordination and integration of policy across Government to overcome the current incoherence and lack of policy alignment between departmental responsibilities.

It was necessary to fill the gap in policy that would guide action to the low carbon economy. In this respect it was suggested that a Policy Gap Register be formulated to guide action in this respect.

A commitment to energy efficiency should be hardwired into policy.

- **Leadership**

- The National Planning Commission should play a role in this respect; and there is a need for political will to guide the process of transition.

- **Transition from High-Carbon and High Energy-Intensive Industry**

Stress was placed on the need to move away from current levels of energy intensity in industry.

- A concern was expressed that the current path of energy delivery was based on the use of coal power. As much of this would be derived from new power stations, the transition away from a coal based economy such as increasing efficiency, would be hamstrung by a commitment to repay loans associated with these coal powered power stations.

- **Innovation**

Much emphasis was placed on the need for technological innovation to stimulate a transition to a low carbon economy.

- **Funding**

Consideration should be given to cross subsidising low carbon investments drawing from the taxing of activity such as mining.

Economic incentives were discussed, including suggestions to draw on carbon tax revenue, and forging agreements between Government and targeted industries which would draw on incentives.

Next Steps

- **There should be a continuation of the dialogue initiated at the workshop. The dialogue should maintain a broad base of involvement from all sectors, and the National Planning Commission should be encouraged to continue to facilitate it.**
- **The participants in the dialogue process should be broadened to include the media, especially the business media, and the financial sector.**
- **There is a need to consolidate information on climate change and the move to a low carbon economy to assist the dialogue. This should include identifying gaps in information, generating an inventory and database of available data, and making the information broadly available.**

Conclusion and summary from Minister Manuel

There is a fundamental bridge to build between where we are and where we need to get to. Today we talked through some of the science and it is clearly incontrovertible, we then moved on to look at the economy and market failure in terms of how we have treated carbon emissions. Government and business have a firm role to play here. We then looked at the SA perspective and the extent of our emissions. Peter Lukey showed us that we have failed in our commitments – a big wake up call. We are hosts of COP 17 this year and so the spot light is on us. The issues are about climate change but the context of holding the talks in SA presents the opportunity to put the key challenges of unemployment and inequality on the map.

The panel discussion raised important issues and began to look at some of the detail. The breakaway sessions looked at the issues in yet greater detail and came up with some recommendations of a way forward in the areas of employment; technology, innovation and industrial development; infrastructure and the spatial economy and the minerals energy complex.

The NPC is not here to take over the line management of the various government ministries. Our interest is to present the kind of SA we want for 2025, a plan for South Africa around which we can build the biggest consensus. We need to understand how our present actions can detract from that vision. We have 25 solid citizens as commissioners and our involvement here is to shape that future. It is about decisions, it is about what is happening now and the course we need to take to get us to that vision. We are all here to support the need for change, to determine the kind of change needed and the instruments to get us there.

We are committed to reconvening in June and all of us here remain part of that journey. We will distil two sets of issues as research papers to be distributed prior to the event. Let's engage in an electronic discussion going forward and through this we become foot soldiers for something else to happen.

We need a wider South African discourse about these issues. We need a stream of ideas to ensure that COP is not just about punctuation. SA must take ownership for a different life. We will place all presentations and reports of the breakaway sessions on our website and let us start a living document; bring your ideas and let's continue this engagement as a process leading to the next session.

Thanks were expressed to all the speakers for providing great learning and a base for the engagement to begin as well as to the organisers, to the donors the British High Commission and Evangelischer Entwicklungsdienst e. V. (EED) and Liliesleaf staff – as a great place to plan subversion.