

**Talk for Fossil Fuel Foundation Conference, 28<sup>th</sup> July 2010**

**The future of coal lies with itself and not by waiting and seeing**

Saliem Fakir

Firstly, let me thank you for inviting me to share some thoughts on the work we are doing in thinking through what it would take to make a transition to a low carbon future.

I would like to think that some of the ideas about the future I will share with you is also a future that you would like to see as well - a place or world in which you have had a hand in rather than watch the shaping of this new world from a distance by others.

I really do think that the coal industry should not focus on the immediate only – but more importantly the future and your role in creating that future. I have previously articulated a vision in which we see two parallel worlds: this idea of two stages to a low carbon future.

We see both the intensification of fossil fuel use, discovery and extraction happening at the same time as we have the intensification of use of low carbon solutions, development and investment in new options.

In the immediate future the picture for coal and oil looks rosy. In fact it is boom times but one needs to see this for what it is because the other options available are coming through but not at scale that will entirely displace coal or oil at the present.

It is clear it is not feasible to just unwind from fossil fuels in the immediate future and neither is it feasible to have the blind-sight that the fossil fuel world will last forever.

We are in the throes of a transition to a new energy system and the pressures within the existing system and pure social and economic pressures are forcing the creation of the new energy world. It is not happening as fast as we like but it will happen.

Modelling work been done presently show that a 100% renewables future by 2030 is feasible but it comes with a rider: it will cost \$100 trillion dollars.<sup>1</sup> A recent report by ESTELA (The European Solar Thermal

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<sup>1</sup> See paper by Jacobson, M.Z and Delucchi, M.A A Path to Sustainable Energy by 2030, Scientific American, November 2009, pp58-65.

Electricity Association) says that Solar Thermal Electricity costs can be brought down by 50% by 2025.

Social pressures against coal are nothing new. If, you study early English history, especially, at the time when the burning of coal smogged out places like London there were movements aimed at trying to stop coal.<sup>2</sup>

But England had no option but to increase its reliance on coal as the English had used up most of the trees available to them.

This was the time of Samuel Pepys. He wrote extensively in his diaries about the smog and squalor associated with the industrialisation of the Britain.

His contemporary John Evelyn wrote a famous book called *Fumifugium* – seeking innovative solutions to deal with London smog by planting trees across corridors creating a sort of urban lung to deal with the smog and smoke that was spewed out of chimney stacks.

In the early 1900s a group of middle class to upper crust housewives led a movement in New York to deal with coal related pollution coming from burning of coal in households.

They were successful in getting the City to pass laws that ensured that coal smoke was reduced or used in ways that did not lead to smog and accumulation of soot. It was part of a larger drive not to have New York go the way of Pittsburgh and Chicago. Cities regarded as too industrialised and dirty because of coal.

They led house-to-house campaigns bringing all sorts of people into the fold. They even worked with local engineers to find solutions to technical problems associated with burning coal in fire-places or coal stoves.

The opposition to coal is nothing new. Yet we have continued to use it and we shoved, as a result of the benefits of electrification, the problem of coal to some far off remote mine and power station. Far from the eyes of urban dwellers who no longer suffer smoke and smog problems.

The pollution persists and the pollution is now the cause of green house gas accumulations in the atmosphere. It has in a sense become somebody else's problem.

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<sup>2</sup> See the fascinating appraisal of this history by Barbara Freese in her book *Coal: A Human History*. Penguin Books, USA:2003.

Coal's new challenge is not smoke, soot or in the hey-day of London the problem of greying of blackening of clothing and buildings. The problem of coal today is the carbon intensity of our economy and the world's economy.

The future of coal is neither helped if we add the weight of the problems associated with its other natural sister: oil. And, the recent crisis around the Deepwater Horizon Rig has not been good for the fossil industry as a whole.

The intensification of the use of oil particularly the encroachment into more new and riskier resource locations like the deep sea, arctic circle, and tar sands only helps to mount the social pressure against carbon intense sources of fuels.

There is second feature about fossil fuels that is creating a certain bad faith between producer and consumer: the unruly nature of the markets. Price volatility associated with oil, and somewhat with coal, is leaving governments and consumers vulnerable, especially those who are highly dependent on the import of the resource.

The volatility – especially price rises as we have seen for oil in the past creates an inflationary spiral that is felt in the fuel tank and food. These are essential commodities for the continuity of life without some anxiety given all the other uncertainties that float about in people's normal lives.

This in itself is building social pressure. Some of these pressures are being mounted directly where consumers lobby against price hikes or indirectly in which labourers forced to carry the added burden of inflation go on strike to ask for higher wages – just as Eskom had experienced recently. Businesses who face a fierce consumer and worker in turn put pressure on government. And, all of this comes around in one way or another.

This cycle itself begins to put pressure on the providers of the basic resource.

I cannot see how the coal and the fossil industry in general will escape the twin pressures of social concern about the environment and the economic anxieties associated with the uncertainty about market conditions that govern present and future prices of coal and oil.

These are inherit given the nature of demand and supply shifts associated with fossil fuels either as a result of scarcity because of the natural depletion of the resource or insufficient investments being made to meet supply.

For oil companies like the international oil companies (IOCs) they face new market challenges: their oil business models are being put to the test by competition from national oil companies (NOCs) and oil field service providers who hold strategic skills in engineering, management and technology that have been whittled within the IOCs over the last 2-3 decades.

The volatility in price itself is not helpful for future investments in new resource acquisition and exploitation. If, prices are high they favour investment. If, they are too low they dissuade further investments.

This to and fro-ing of nervous investors was particularly evident for the exploitation of tar sands and the BP disaster has forced insurance companies to hike up the price of risk insurance. The result is that investors are beginning to place doubts on investing in stranded resources or resources located in fairly high risk areas.

Jeff Rubin in his book *Why your world is about to get a whole lot smaller* raises big alarm bells about oil and how its going to impact the global economy – it's a useful read if you watching what is happening in the oil markets.

Rubin argues: **‘Not only must we decouple our economy from oil but we must re-engineer our lives to adapt to a world of growing energy scarcity’.**

What is true for oil may be true for coal – for coal it may not be yet, through the natural depletion of the resource, but the redundancy may come sooner because of social pressure.

The game for fossil fuels is no longer straightforward. The early abundant and easily accessible resource gave some certainty to investments. And, it worked in a social milieu where the environmental and cultural norms that influenced our exuberant extraction and use of fossil fuels was somehow given ‘permission’ because of the extraordinary economic benefits that not only accrued to miners, industrialist but also

governments through tax receipts, royalties and consumers through better wages and availability of goods.

Although there was misery too and the this was quite effectively depicted by the works of George Orwell and Charles Dickens covering the very hard life early mine workers had to live to dig out coal from underneath the ground and many of our own workers did face and some argue continue to face in South African coal mines.

The economic benefits of mass goods and consumption were widely spread that we could not resist the addiction to both coal and oil.

And, then too low carbon alternatives were either non-existent or did not have the level of maturity and interest as they presently enjoy.

A new set of global norms regarding the use of fossil fuels have become strident. This combination of the development of low carbon solutions and future uncertainty regarding the availability of fossil fuels at the right price and quantities is going to put pressure on both the coal and oil industries.

The natural implication is to start hedging the future so as not to put all one's eggs in one basket.

Some countries are doing this better than others. Certainly, the developed economies look better suited to deal with this than others. But emerging economies like China, India and Brazil are developing policies, strategies and investment decisions that are trying to reduce the burden of dependence on fossil fuels.

The pressures on the coal industry and fossil industry will be at several fronts and their convergence is no longer nascent but active.

They are:

1. We live in a completely different normative world compared to the days of Samuel Pepys: the new social and environmental values are not going to ease off and the more we have of the BP like incidences the more likely the public reaction is going to be vitriolic;

2. Coal and oil also are sources of conflict with local communities and in the case of oil conflicts are national and geo-political in nature;
3. Energy security issues are the biggest single global issue in the present and future and energy itself is the source of major geo-political shifts. Countries that have the highest ratio of dependence on energy imports will seek to increasingly shift away from their dependency;
4. Some of the responses of governments on this question are visible through gaming and hedging behaviour as a way to lower fossil fuel dependence. For instance the South African government is looking instituting a carbon tax on fuel sources itself rather than end-of-pipe emissions. There will be two main objectives behind this: increasing new sources of revenue to fund the low carbon transition and changing industry and consumer behaviour to reduce vulnerability to future energy shocks;
5. Thirdly the growing confidence and maturity of investments and developments in low carbon technologies, like renewables, in itself generates organized special interest groups and alliances that will lobby hard for public and private spending to go in the direction of these low carbon solutions, they will have several influences;
  - a. They will play up the risks associated with fossil fuels;
  - b. They will lobby for the shift in subsidies;
  - c. They will welcome externality costing in order to bring price parity between fossil fuel technologies and low carbon technologies;
  - d. They will seek to crowd out investments away from fossil fuels;
  - e. And, they will open the space for the transition to a new energy future.

It is not the death of the coal industry but the world of coal 100 years ago is a very different world for coal today and the same assumptions by which it lived before cannot be the same assumptions it can live by today.

I think there is an opportunity for the coal industry to be receptive to the debates going on about a world that is post-carbon because it is a future that has take shape now.

The thing about it is that it is no longer fringe pressure by a few environmentalists the transition to a low carbon future is both a national security issue and a new source of business.

Serious investors and thinkers are behind this new energy revolution – think of Richard Branson, Bill Gates, Al-gore and others. This has already gone beyond climate change.

These issues are becoming mainstream and the more these new technologies become mature and widely used the harder it is too argue that a bunch of crazy people are taking us up some pipe-dream.

A future ironically is being shaped despite the intensity of growth and use of coal because at the same time this is happening there is a similar race to invent a new energy future.

For now they are mutually dependent on each other but be rest assured that the low carbon future is inevitable and when it is properly out of the blocks it will grow a distance from the fossil world. It may well displace coal even if there is lots of it in the ground.

In this I have no doubt.

Thank you.

The End.

### Concluding response final panel discussion

There was no formal agreement at the 2009 Copenhagen Climate Conference. *What will happen next?* How serious are the pressures to reduce emissions and the use of coal? Marie Saliem John

*SF Response: The formal agreement of the UNFCCC still dwells in uncertainty. We will have to wait for the next few rounds to really see what comes out of the climate change negotiations. It may retard to some extent this push to a low carbon future at a national level. The other is the availability of international climate finance. Here, the optimism is not that high. But I would not be entirely complacent. New coal fired power stations in the US at several states are coming under pressure. We also saw strong US Congress pressure on the World Bank when it tried to fund Medupi. The US Treasury guidelines for new capital allocations to the WB want the WB to be more involved in the clean-tech sector. But failures at the COP meetings should not give one comfort as you don't need an international agreement to pass domestic legislation. Political pressure on national governments to act in countries where the topic wins you elections will see some policy responses and in some cases it is already happening. Some of these responses we already see in mooted border tax adjustments and private standards and labelling. I see no option, if our economy's exports are to be competitive that we will be forced to lower our emissions intensity. Besides, being too coal dependent is not good thing. I have no doubts that, that dependence will still come down from the high 90% level we have now to somewhere between 60-70% in the future. Everything tells us we are moving in that direction. Eskom is already raising concerns about the security of coal supplies. There is pressure to diversify our energy mix. The good old days for coal fired stations are pretty slim.*

- South Africa is drafting policy and legislation for emissions accounting and carbon-related market-based instruments to be implemented by 2012. *What does this mean for coal?* Marie Saliem

*SF Response: I have a sense that we are moving more towards nuclear than coal. Analysis done on the IRP2 also points to that*

*direction. It is more than likely that Kusile could be the final coal fired power station. South Africa's international stance on carbon emissions point to the moral obligation that South Africa has set itself up for. I can't see how we would back-down without losing face and then also having to make some compromises for coal. Within Treasury itself, and this counts for more than anything, the discussion towards a carbon tax rather than an emissions trading systems in fairly conclusive. The question now is not what but how much.*

- The US and South Africa are talking about renewed nuclear programmes. South Africa has had some difficulty in raising finance to complete coal-fired Medupi due to environmental concerns related to climate change. *Will nuclear and renewable energy play a more prominent role in the future?* What are the realities and practicalities of these alternatives? Costs? When?

**S**aliem

*SF Response: Analysis done by IDASA of the IRP 2 and what we know of the level of lobbying going and what gov't Ministers have said that nuclear power is on the cards. In a sort of strange and ironic twist the PBMR shut-down is helping the nuclear industry. They crying about jobs and they are talking up the need for nuclear power that continues to support a local nuclear industry. They are now saying South Africa can't loose its strategic skills in the nuclear sector. I know there are already discussions with the International Atomic Energy Association to grant South Africa permission under the NPT to resume nuclear fuel making. Can't see how the nuclear debate will be won without a renewables compromise. What is most telling is how AREVA has moved into the renewables space. They now have AREVA renewables that owns off-shore wind and linear fresnel concentrated solar power technology. Their strategy is to sell a complete low carbon solution. Is there a lesson here for coal companies? Nonetheless, a strong package for renewable is being worked on by the Department of Public Enterprise. But like all of these things, whether it is coal, nuclear or renewables, the ability to pay for it by the gov't and consumer is going to be the key factor determining how this mix works and where coal is*

*pushed down and both nuclear and renewables is upped. For the present moment the proposal is to build 20GW of nuclear and figures put down for renewables is anywhere between 15-20GW by 2020. Nuclear's horizon is longer and there is an urgency to begin the process soon and complete plants between 2025-2030. But since both nuclear and coal take a long time to install renewables could easily be the interim quick solution that will boost the reserve margin without causing real stress on the grid system. I believe these solutions are quite feasible.*

- *Is there enough coal to meet the forecasted demand?* Rosemary
- Without significant increases in coal combustion efficiencies and successful carbon capture and storage, *will the industry survive to 2050?* What are the likely developments and their impacts?  
Rosemary John Paul
- The South African Coal Road Map is an effort by the major producers to address all the issues facing the supply of and demand for Southern African coal: *how will this influence South African coal's future?* Paul

Handwritten additional notes.