

The Economic Impact Of The Carbon Tax And Renewables In South Africa

The introduction of a carbon tax and the rapid move to renewables will have a substantial negative impact on goods producing sectors, namely mining, manufacturing and agriculture. These decisions will slow economic growth and reduce employment opportunities, particularly for the relatively unskilled and the less privileged.

Policy Objectives

Three key priorities of policy are firstly, alleviating poverty and creating employment, secondly, focusing attention on developing its goods-producing industries and thirdly making South Africa more productive by ensuring that we remain globally competitive. The impact of cost increases in electricity supply is therefore of critical importance to the country.

Proponents of the move to renewables and a carbon tax list a number of potential advantages. In summary, they will help reduce the emission of greenhouse gases, and hence contribute to a reduction in global warming by encouraging energy suppliers to make use of lower carbon techniques and users to move to alternative lower carbon sources of energy.

The Electricity Sector

The electricity sector is responsible for approximately 48% of South Africa's carbon emissions as a result of its dependence on coal. As far as domestic users are concerned, it may well be possible, at a cost, over a relatively short period of time to move to other sources of electricity, primarily solar energy. However domestic use accounts for only about 26% of total electricity usage. The primary users of electricity in South Africa are the all-important mining and manufacturing industries. The important agricultural and agri-processing industries are also electricity intensive. These industries certainly can and will improve their efficiency, but this is a long-term process. This generally involves new investment in more expensive and more efficient modern plant and equipment. Notwithstanding this, there can only be a slow improvement on the side of industry and they are limited by their electricity sources, as Eskom is their sole supplier for their base-load power. In this country, over 80% of electricity supply is coal fired. Levying a carbon tax on Eskom will have little impact in the short term on South Africa's energy mix. In the long term, as set out in the Government's Integrated Resource Plan for Electricity, there will be a movement towards other energy sources. In this case, the plan is to move to much more expensive wind, solar and nuclear electricity sources. Gas is another potential source that needs to be considered as it could prove to be a far cheaper and abundant alternative. In the short term, the additional cost of the tax will simply be passed on to consumers in the form of higher tariffs. In the long term, there will be the higher costs of the more expensive sources of electricity.

Competitive Pricing

Notwithstanding the claimed advantages, one must preserve a competitive cost structure for industry. South Africa is not in the same position as European countries, which can hook into a vast electricity power grid with alternative energy sources when shortages of electricity from less reliable sources of power arise. The European power grid has many alternative sources of power generation ranging from coal-fired power stations in Poland, nuclear stations in France, whilst some countries such as Norway, Sweden and Switzerland are dependent on hydropower. Already the selected wind powered option in Europe is proving to be uneconomic and highly unpopular. There are numerous and expensive delays in delivery of supporting infrastructure, whilst supply is proving to be unreliable and

expensive. A recent article in "The Economist" highlighted the problems facing Germany's "*Energiewende*". The aim of this policy is to phase out fossil fuels and nuclear power and move to renewables, primarily wind and solar. The article stated that the process "undermines Germany's claim to efficiency, threatens its vaunted competitiveness and unnecessarily burdens households". Costs are expected to double "as prices for natural gas and electricity in North America are plunging, thanks to the shale revolution, so Germany's most energy-intensive industries are now eyeing expansion on the other side of the Atlantic". Security of supply and competitive pricing are critical elements of base load power for these all important goods producing industries.

Many people are taking a lead recently given by President Obama, whereby the USA is to impose a tax on carbon emissions of coal fired power stations. How this eventually plays out and whether this will be a good thing for the USA, only time will tell. However, the USA is very different to South Africa. It currently has a plentiful and growing supply of gas. Energy prices have as a result already fallen significantly, and this is leading to a renaissance in its manufacturing and industrial sector.

Economic implications of the carbon tax and renewables

The introduction of the carbon tax in South Africa will increase prices and place the country at a considerable competitive disadvantage. This is particularly important for the goods-producing industries, especially the mining, manufacturing and agricultural sectors and industries. It is proposed to introduce in 2015 an initial carbon tax of R120 per tonne on carbon dioxide emissions above certain threshold limits. Thereafter this tax will increase by 10% per annum until the end of 2019. The initial proposed tax, because it will be passed on to customers, implies an approximately 18% increase in the cost of electricity supplied to users. By the end of 2019 this would amount to an increase in the real price of electricity of 29% for the average consumer. Even with the proposed discounts of 60% to selected industries, this implies that the carbon tax alone will result, by 2020, in an increase in the real price of electricity of approximately 12%. The tax, together with the shift to renewables, could conceivably lead over the next seven years to a doubling of the real price of electricity to both business and households.

The economic impact of the price increases will insidiously be felt over a period of time, as decreased investment and other negative impacts filter through the economy. By 2021, it is estimated that the carbon tax alone would result in a -0.3% reduction in the potential annual growth of the GDP. This would be accompanied by a reduction in the cumulative potential employment creation of approximately 650,000 persons by 2021. If indeed the real price of electricity does double, these figures could increase by at least 50%. These are serious numbers, making employment creation targets of some 5,000,000 additional productive jobs for the economy by 2020 impossible to achieve.

The impacts on the mining, manufacturing and agricultural sectors are of particular concern. The mining and manufacturing industries are important contributors to the economy representing 9% and 14% of South Africa's GDP respectively. Their impact on the total economy, however, is far greater through their linkages with other important sectors of the economy. Importantly, these two sectors account for over 75% of the country's exports by value. Agriculture and agricultural processing is equally important and it should be noted that South Africa has now become a net importer of these products. It is not an understatement to say that the wellbeing of the country is critically dependent on the good performance and the growth of these three sectors. Their continuing and improving global competitiveness is vital if this is to be achieved. They are essential for the economic and employment growth of the economy, as the country is, and will continue to be dependent on their exports and their ability to limit the necessity to import goods.

The mining and manufacturing sectors are sectors which are highly electricity-intensive. Agriculture has also relative high electricity intensity. Their capability to affect short-term improvements in carbon efficiency will prove to be a slow process. In short, a price increase on the scale envisaged by the

introduction of the move to renewables and the carbon tax negatively impacts the entire economy with particularly severe impacts on the mining and manufacturing sectors. It is estimated that based on the introduction of the carbon tax alone:

- The mining sector would, by 2021, have a cumulative GDP contribution of 2.7% less than would have been the case if the carbon tax had not been introduced. Recent growth in the sector has been limited and it can be anticipated that, in the absence of other measures, these trends could continue and the sector could well show little growth.
- The manufacturing sector would, by 2021, have a cumulative GDP contribution of 1.1% less than would have been the case if the carbon tax had not been introduced.

The above would be accompanied by a reduction in the cumulative potential employment creation of approximately 8% or about 70000 less jobs in these two sectors alone. These numbers could easily increase a further 50% as a result of the cost of moving to renewables. The knock-on effect from these two important sectors leads to an extremely poor performance of the total economy. The fact is that global markets are extremely price competitive, their ability to pass on costs is at best limited, and exports will be impaired. At the same time, local production will be less import-competitive. The result is a double effect on the balance of payments. This will result in further deterioration in the current account of the balance of payments and further depreciation of the Rand, which would slow economic growth and have inflationary consequences for the economy.

Long-term negative economic impact

The negative impact on South Africa's competitiveness could lead to a withdrawal of investment or, at minimum, international investors would prefer to expand in more economically friendly and more competitive countries. It is also interesting to note that the higher electricity costs may result in the exact opposite of one of its key objective, namely reducing global greenhouse gas emissions. The mineral beneficiation industry is a case in point. This industry is of critical importance to South Africa, being a value added process, and an important contributor to South Africa's exports. International producers may plan their increases in capacity in other countries with possibly lower emissions standards than South Africa. Global carbon emissions could well rise rather than fall. It has been said that carbon finance should be a substantial opportunity for developing economies, as it is a way to promote new development projects such as renewable energy. It appears that, in reality, the benefits are at best difficult to achieve and at worst do not exist. In Europe many projects are falling behind.

The above discussion underlines the concern that the far too rapid movement towards renewables and the introduction of a carbon tax will slow South Africa's economic growth, reduce its employment potential and raise unemployment levels, whilst not achieving the goals its proponents claim will be achieved. It would certainly detrimentally affect South Africa's business sector and reduce the attractiveness of South Africa as an investment destination for its all-important goods-producing sectors. It could be an expensive price for South Africa to pay at a critical stage in its economic and political development. The problem of climate change is a global problem but South Africa, as an emerging economy, is going to pay a considerably higher price than many other emerging and advanced economies. Our contribution to reducing global climate change will be less than measurable, but our sacrifice will be enormous. Unfortunately, the major sacrifices will be paid for by the already disadvantaged, not the privileged few, who in general are those most in favour of its introduction.