

# SANE Sustainability News



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Members of the **SANE Community Network** who wish to contribute to **SANE Community Views**, please send your contributions and/or proposals to [chairman@sane.org.za](mailto:chairman@sane.org.za). **SANE Community Views** will be published on an occasional basis at the discretion of SANE.

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## EDITORIAL

This issue's *Transition Tips* suggests ways individuals can conserve transport fuel and presents ideas and experience related to designing sustainable cities that are less dependent on cars.

Recent *World News* has been dominated by two issues. The first is the Euro-zone debt crisis, which continues to rattle markets despite a range of measures being taken by the EU, IMF and European Central Bank. The second issue is the devastating oil spill in the Gulf of Mexico. Four attempts to stem the leak by BP have failed, and the spill is now the worst in US history.

In *SA news*, economic growth has picked up and inflation has dropped, but unemployment has risen in the first quarter. Demand for credit by the private sector continues to fall, indicating that domestic consumption is still struggling under the burden of debt. There are encouraging developments in renewable energy and alternative transport fuels and technologies, although they are still on a very small scale.

*Sustainability Matters* considers the long-run historical context of a shift towards a sustainable economy.

Jeremy Wakeford, Research Director

# Transition Tips

## Pathways to sustainability and a post-carbon economy

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### *Driving economically makes sense (and rands)*

Conserving fuel while driving is easy to achieve and brings several benefits:

- it saves you money;
- it conserves depleting oil reserves;
- it reduces pollution and CO<sub>2</sub> emissions; and
- it helps to increase safety on the roads.

There are many simple ways for individuals to increase fuel efficiency and conserve fuel:

- use a bicycle or public transport where possible;
- plan trips to combine activities and so eliminate unnecessary driving;
- reduce driving speed;
- try to avoid traffic as much as possible;
- inflate tyres to correct pressure;
- use appropriate gears;
- avoid unnecessary idling;
- buy a more fuel efficient car (if you can afford one).

### *Reclaiming the streets*

*by Lester Brown*

Cars promise mobility, and in a largely rural setting they provide it. But in an urbanizing world, where more than half of us live in cities, there is an inherent conflict between the automobile and the city. After a point, as their numbers multiply, automobiles provide not mobility but immobility, as well as increased air pollution and the health problems that come with it. Urban transport systems based on a combination of rail lines, bus lines, bicycle pathways, and pedestrian walkways offer the best of all possible worlds in providing mobility, low-cost transportation, and a healthy urban environment.

<http://tinyurl.com/2vuf3nw>

### *Designing Livable Cities*

*By Lester R. Brown*

Urbanization is the second dominant demographic trend of our time, after population growth itself. In 1900, some 150 million people lived in cities. By 2000, it was 2.8 billion people, a 19-fold increase. Now more than half of us live in cities—making humans, for the first time, an urban species.

Mayors and city planners the world over are beginning to rethink the role of the automobile, seeking ways to design cities for people, not cars. The integration of walkways and bikeways into urban transport systems anchored by public transportation makes a city eminently more livable than one that relies almost exclusively on private automobiles. Noise, pollution, congestion, and frustration are all lessened—and we and the earth are both healthier.

The ratio of parks to parking lots may be the best indicator of the livability of a city—an indication of whether the city is designed for people or for cars.

One of the most remarkable modern urban transformations has occurred in Bogotá, Colombia, where Enrique Peñalosa served as mayor for three years.

Peñalosa realized that a city with a pleasant environment for children and the elderly would work for everyone. In just a few years, he transformed the quality of urban life. Under his leadership, the city created or renovated 1,200 parks, introduced a highly successful bus-based rapid transit system, built hundreds of kilometers of bicycle paths and pedestrian streets, reduced rush hour traffic by 40 percent, planted 100,000 trees, and involved local citizens directly in the improvement of their neighborhoods.

<http://tinyurl.com/39gs5fc>

# World News

## Global events and research from a sustainability perspective

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### Economy

#### *There is no universal economic theory*

A remarkably distinguished group of economists gathered recently for the inaugural conference of the Institute for New Economic Thinking, an initiative of George Soros. They were soul-searching over the failures of economics in the recent crisis.

Such failures are most evident in two areas: the inadequacies of the efficient market hypothesis, the bedrock of modern financial economics, and the irrelevance of recent macroeconomic theory.

The environment actually faced by investors and economic policy makers is one in which actions do depend on beliefs and perceptions, must deal with uncertainty and are the product of a social context. There is no universal economic theory, and new economic thinking must necessarily be eclectic.

<http://tinyurl.com/39rwqa5>

#### *US money supply plunges at 1930s pace as Obama eyes fresh stimulus*

The M3 money supply in the United States is contracting at an accelerating rate that now matches the average decline seen from 1929 to 1933, despite near zero interest rates and the biggest fiscal blitz in history. The M3 figures began shrinking last summer.

<http://tinyurl.com/36ttfj3>

#### *EU Commission pushes for crisis levy on banks*

The European Commission unveiled a framework on Wednesday for a levy on banks to make them pay now for future crises, setting the stage for a showdown on the tax at a meeting of G20 world leaders in June.

<http://tinyurl.com/37pqk5z>

#### *Huge new bailout in Europe*

Policymakers announced a \$1 trillion emergency package to stabilize the currency and eurozone central banks began buying local government debt.

The aid package, hammered out by European Union finance ministers, central bankers and the International Monetary Fund, was the biggest since Group of 20 leaders rolled out support measures after the collapse of Lehman Brothers in 2008.

<http://tinyurl.com/37ft63h>

### Energy & Resources

#### *Why China holds 'rare' cards in the race to go green*

From electric cars to wind turbines, environmentally-friendly technology around the world needs rare earth metals. But China - where over 90% of these minerals are mined - is saying it now wants to keep more for its own industry.

Rare earth metals are relatively abundant in the Earth's crust, but they are difficult to extract. Most came from the United States in the 1960s but tightening environmental regulations and a price war closed the last Californian mine, handing China a virtual monopoly.

The Chinese motives are pretty clear. They want Western users to do their manufacturing in China and they need supplies for their own ambitious wind energy programme.

<http://tinyurl.com/2wuj8pk>

### *European Dream of Desert Energy Takes Shape*

Can the Sahara Desert really meet Europe's voracious appetite for energy? The Desertec solar power project aims to do just that, but a host of obstacles remain. Overly optimistic expectations are now being scaled down as the project starts to take shape.

The plan foresees Europe deriving almost all of its electricity from renewable sources within 40 years from now, with a sizable portion of it coming from the Sahara. For many people, the dream is even more momentous than the Moon landing. But, at an almost inconceivable estimated cost of €400 billion (\$492 billion), it would also be more expensive.

<http://tinyurl.com/38y7ufo>

*Editor's note: This figure pales into insignificance in comparison to the recent financial bailouts.*

### *Spiraling Costs Threaten International Fusion Reactor Project*

The planned ITER fusion reactor in France is supposed to replicate conditions inside the Sun to produce limitless clean energy. But skyrocketing costs are putting the international project at risk.

Proponents of the project argue that what is at stake is nothing less than the energy of the future -- a process of energy production that uses a fuel that is available in almost infinite quantities, and that produces nearly no waste.

Opponents, however, see the multi-billion euro project as a modern white elephant. Now it has been revealed that ITER's construction costs are exploding. In a worst case scenario, the whole project could be at risk.

<http://tinyurl.com/35xwamx>

## Environment

### *Gulf Spill largest in US history*

New data has showed that the oil spill in the Gulf of Mexico is the worst oil spill in U.S. history. Government scientists now estimate that the oil may have been flowing at a rate up to four times higher than previously estimated by BP. The new estimates suggested the oil was gushing out at a rate of between 12,000 to 19,000 barrels a day — much higher than the previous estimate of 5,000 barrels a day.

President Barack Obama has placed a moratorium on any new deepwater oil exploration for six months and suspended some permits and lease sales off the vulnerable coasts of Alaska and Virginia.

Restrictions on exploration and production from deepwater oil fields have important implications for future crude oil supplies, since such fields account for an increasing share of world oil production and remaining reserves. The moratorium will likely result in supply shortfalls in about 6-8 years time, just as global production is likely to enter terminal decline.

<http://tinyurl.com/2u9u9pf>

### *Man-made climate change blamed for 'significant' rise in ocean temperature*

The world's oceans are warming up and the rise is both significant and real, according to one of the most comprehensive studies into marine temperature data gathered over the past two decades.

Measuring the temperature of the oceans has not been easy, but the scientists behind the latest study believe there is now incontrovertible evidence to show that the top few hundred metres of the sea are warming – and that this temperature rise is consistent with man-made climate change.

<http://tinyurl.com/3xwy6n7>

## Food & Water

### *No-Till Farming Improves Soil Stability, Research Finds*

A joint Agricultural Research Service (ARS)-multi-university study across the central Great Plains on the effects of more than 19 years of various tillage practices shows that no-till makes soil much more stable than ploughed soil.

No-till stores more soil carbon, which helps bind or glue soil particles together, making the first inch of topsoil two to seven times less vulnerable to the destructive force of raindrops than ploughed soil.

<http://tinyurl.com/354q765>

### *Indian State of Kerala Starts 10-Year Conversion to All-Organic Farming*

The southern Indian state of Kerala has officially announced a new farming policy which aims to convert all agriculture in the state to organic methods over the next ten years.

In order to facilitate the transition, the policy highlights the need to provide interest-free loans to small and marginal farmers.

<http://tinyurl.com/337g8xj>

## Transport

### *Toward sustainable travel: breaking the flying addiction*

Flying dwarfs any other individual activity in terms of carbon emissions, yet more and more people are traveling by air. With no quick technological fix on the horizon, what alternatives — from high-speed trains to advanced videoconferencing — can cut back the amount we fly?

<http://tinyurl.com/34vjnh7>

## Geopolitics

### *Brazil and Turkey Near Nuclear Deal With Iran*

Brazilian and Turkish government officials said that their leaders had brokered a tentative compromise with Iran in the international standoff over Iran's nuclear program, a development that could undermine efforts in the United Nations to impose new sanctions on the Iranians.

The Brazilian and Turkish leaders have been trying to revive a deal reached last October in which Iran would ship much of its stockpile of enriched uranium abroad for further processing; the uranium would then return as fuel rods for a medical research reactor.

<http://tinyurl.com/2b8fg6e>

# South Africa News

## Sustainability issues on the domestic scene

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### Economy

#### *SA first quarter GDP up 4,6% q/q*

South African real gross domestic product (GDP) increased by 4,6% quarter-on-quarter for the first quarter of 2010, according to Statistics South Africa (StatsSA).

StatsSA says the largest contributions to the increase was the manufacturing (1,3%), mining and quarrying (0,8%) finance, real estate and business services (0,5%), wholesale, retail, motor trade and accommodation industries (0,4%).

<http://tinyurl.com/32ew9o4>

#### *SA CPI for April 2010 up 4,8%*

The annual CPI rate for April 2010 was 4,8%. This is 0,3% down from March's rate of 5,1%, Statistics South Africa (StatsSA) said. On average, prices increased by 0,2% between March 2010 and April 2010. The headline inflation rate is at its lowest in four years.

<http://tinyurl.com/2vhcrfx>

#### *Local debt levels remain too high - SARB economist*

Local debt levels were still too high for South Africa to be able to "proudly confirm" that it was out of the woods in terms of the global economic recovery, South African Reserve Bank chief economist Dr Monde Mnyande said recently.

Mnyande warned that the developments in Eurozone countries could potentially lead to a reversal of capital flows to emerging market economies.

<http://tinyurl.com/2vqemer>

#### *Unemployment rises by almost 1%*

The unemployment rate for the first quarter of 2010 increased 0,9% from the previous quarter to 25,2%, according to Statistics SA.

<http://tinyurl.com/2fdkqzz>

#### *South African's demand for credit dropped 0,8% in April*

The SA Reserve Bank says demand for credit by South Africa's private sector fell by 0,86% year-on-year in April, after a 0,69% decline in March. April growth in the broadly defined M3 measure of money supply quickened slightly to 1,67% year-on-year compared with 1,55% previously.

<http://tinyurl.com/359o3ft>

#### *Gauteng outlines green-economy plan*

The Gauteng Department of Economic Development said on Friday that it had developed a green economic development strategy for the province, to foster the development of manufacturing capacity and job creation.

Economic Development Member of the Executive Council (MEC) Firoz Cachalia said that Gauteng's main green-economy challenge would be to turn the climate change "crisis" into an opportunity ensuring that jobs were being created rather than displaced.

The national government has said that a green economy would play a key role in South Africa's shift to a "new growth path", with the government focusing on more labour-absorbing industries.

<http://tinyurl.com/34y5t86>

## Energy & Resources

### *South Africa studies compressed natural gas as a transport-fuel alternative*

South Africa is a net importer of final petroleum products, which costs the country R18,5-billion a year. A new refinery is expected to be built and be operational by 2014, but this will not completely relieve the current dependence on imports of white products. Alternative fuels need to be sourced to mitigate the rising shortage and price of liquid fuels.

South African National Energy Research Institute (Saneri) green transport programme manager Dr Titus Mathe says that South Africa has to start using alternative fuels now and not wait for a crisis to take place. To promote the switch to alternative fuels, Saneri is supporting a number projects aimed at introducing alternative fuels, such as compressed natural gas (CNG), into the South African transport sector.

<http://tinyurl.com/3ak8vam>

### *GridCars' electric vehicle project hopes for transport revolution*

Carel Snyman, who headed up power utility Eskom's electric vehicle programme for many years, says his team developed a prototype electric vehicle which was exhibited in France. Snyman and business partner, technology evangelist and Advanced Energy Foundation CEO Winstone Jordaan, are working to get a concept called GridCars off the ground.

Snyman and Jordaan want commuters to buy the use of a three-wheel electric car like they would pay for a cellphone contract: they pay only for what they use. "The car is a three-wheeler," says Snyman. "It is basically a one-plus-one seater, with room for a little bit of luggage."

<http://tinyurl.com/2w2k5xr>

### *First solar geysers by June from new E Cape plant*

The Eastern Cape Development Corporation (ECDC) has confirmed an investment worth R20-million into an East London facility able to produce 300 000 flat-panel solar water heaters, as well as more affordable vacuum tube-based systems, yearly.

<http://tinyurl.com/354j629>

### *Construction - Wind turbine building starts*

Electrawinds Belgium started building the first of 25 wind turbines at Coega in the Eastern Cape, a project that aimed to produce 45 megawatts of electricity by next year if granted a generating licence, the company said yesterday. Power from the first 1.8MW turbine is due to be delivered free to the Nelson Mandela Bay municipality in time to provide energy for Port Elizabeth's World Cup stadium.

<http://tinyurl.com/384kj15>

### *Nersa considering four near-term IPP contracts worth 413,5MW*

The National Energy Regulator of South Africa (Nersa) has confirmed that it is currently considering four separate power purchase agreements (PPAs) concluded between State-owned power utility Eskom and independent power producers (IPPs), involving a total of 413,5 MW.

<http://tinyurl.com/38wg6u9>

## Environment

### *Plan to protect facilities in Durban*

eThekweni's environmental watchdogs are looking at ways to protect and relocate key infrastructure in the Durban South area as sea levels are expected to increase by 2.7mm a year for the next 100 years.

Waste water treatment works and public recreation areas will be at risk of sea level rise (SLR) and will have to either be moved away from the coastline or reinforced with sandbags or with natural vegetation.

One of the ideas, adopted from international practices, is to build using stilts along the coastline.

<http://tinyurl.com/3yvxynt>

## Society

### *Sewage systems collapsing*

Water Affairs Minister Buyelwa Sonjica says her department needs at least R23 billion, and probably closer to twice this amount, to sort out South Africa's collapsing municipal sewage treatment works. The Green Drop Report highlights a looming crisis in sewage treatment in South Africa, especially in rural small towns.

A comprehensive government audit had revealed that 85 percent of South Africa's sewage system infrastructure was "dilapidated" and the overall neglect of the country's water and sanitation systems "will cost R56 billion to repair".

<http://tinyurl.com/2dcwy4x>

### *Subsistence farmers get a hand*

*by Tina Joemat-Petersson (Minister of Agriculture)*

"This year we will launch an extensive mechanisation programme to provide tractors to small-scale and subsistence farmers. R100-million has been allocated to Mpumalanga and KwaZulu-Natal for mechanisation and in the remaining term of government the rest of the provinces will receive R50-million each.

"The government will support local fresh-produce markets, processing facilities and additional market access for the surplus produce of subsistence and smallholder producers.

"This is in line with the Freedom Charter's call to help those working the land with seeds, implements, tractors, infrastructure for irrigation, fencing and other forms of material support."

<http://tinyurl.com/39o154u>

# Sustainability Matters

## Commentary and analysis

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### *The historical context for sustainability*

Human socio-economic systems have evolved over thousands of years in concert with changing environmental conditions. Three primary “techno-economic bases” or “modes of subsistence” are commonly identified by social scientists, namely: hunter-gatherer, agrarian and industrial. Several critical ecological drivers are now forcing our globalised industrial society to undertake a third transition to a ‘sustainable’ mode of subsistence. The emergence of a new dominant suite of energy sources will be an integral part of this transition.

A relatively new school of thought pioneered by a group of mainly Austrian researchers (e.g. Haberl, Fischer-Kowalski, Krausmann, Weisz and others) studies the interactions between humans and the natural environment in what they term “social-ecological systems.” In this view a society is sustained by flows of energy and materials and can thus be seen as having a “socio-economic metabolism.”

A specific type of metabolism supports a certain mode of subsistence, which refers to a form of societal organisation characterised by distinct patterns of population growth, consumption of resources, economic systems and institutions, technologies and human culture. A transition from one mode to another could be driven by socio-economic factors or environmental conditions, or by interactions between them. A historical perspective on modes and transitions can help us to understand humanity’s current situation as well as the critical role played by energy.

Hunter-gatherer societies are generally dated back to the emergence of *Homo sapiens* roughly 100,000 years ago. Their primary energy source was passive solar energy captured indirectly via photosynthesis, i.e. through ingesting plants and animals. This energy

was supplemented by a small amount of wood for cooking and heating.

Population size was limited to the local carrying capacity of the land and remained very small. Social organisation consisted of nomadic bands and small tribes possessing very few artefacts and having very little division of labour.

The “agricultural revolution,” which ushered in the agrarian mode of subsistence, began about 10,000 years ago at the end of the last Ice Age and involved the domestication of certain plant and animal species. The socio-economic metabolism relied chiefly on the deliberate management of solar energy via agricultural crops, with wood again playing a supportive role.

Agriculture enabled and necessitated settled populations that gradually grew over time on the basis of raised food productivity. Permanent settlements and agricultural surpluses gave rise to more complex societies involving division of labour, such as the emergence of a ruling class, military, and artisans, while the majority of the population was involved in food production.

Many agrarian societies in the past ran into problems when practices such as irrigation gradually resulted in loss of topsoil and declining fertility, or over-harvesting of forests changed local climatic conditions.

The industrial era began in England *circa* 1750 with the advent of new economic institutions and technologies, such as factory production and steam-powered engines.

Fossil fuels emerged as the principal power source for industrial economies, beginning with coal in the

18<sup>th</sup> and 19<sup>th</sup> Centuries and followed mainly in the 20<sup>th</sup> Century by oil and natural gas. The current scale of societal dependence on fossil fuels is starkly revealed in Figure 1, which shows that about 80 per cent of the world’s primary energy supply is provided by these non-renewable sources.

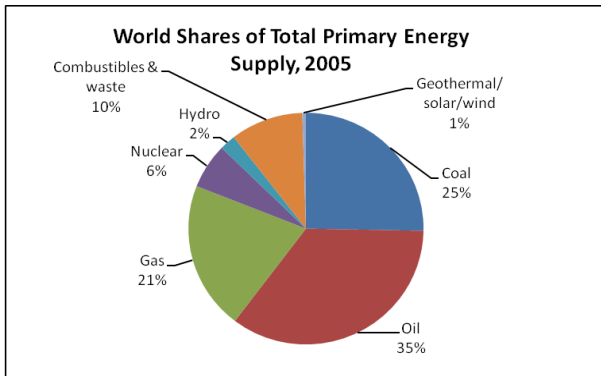


Figure 1: World shares of total primary energy supply by source, 2005

Source: International Energy Agency

The extraction of these abundant and dense fuels enabled prolific growth in the human population from around one billion in 1800 to over six and a half billion today. Simultaneously, oil in particular facilitated a rapid process of urbanisation such that about half of the world’s population now lives in cities.

The industrial economy has been spectacularly successful at raising living standards by producing diverse goods and services, albeit for a mere fraction of the population. This in turn has meant ever-increasing extraction and use of raw materials (see Figure 2). Breathtaking technological advancements, expanding transportation and communication networks and cultural changes have greatly enhanced the complexity of human society.

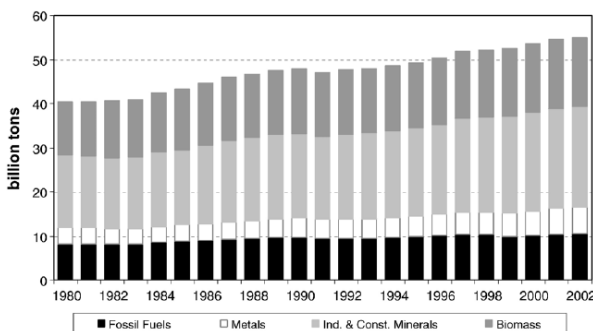


Figure 2: Global materials and energy usage

Source: Behrens, A., Giljum, S., Kovanda, J. & Niza, S. (2007) *The material basis of the global economy: worldwide patterns of natural resource extraction and their implications for sustainable resource use policies. Ecological Economics, 64: p. 447.*

However, all this progress has come at a very high price for the natural environment, in terms of both depletion of resources and pollution of environmental “sinks” that absorb wastes.

As discussed in the previous issue, it is increasingly clear that the fossil fuel based industrial regime cannot persist for much longer. Over the coming decades humanity will either make a successful transition to a sustainable mode of subsistence based on renewable energy sources, or our society will follow in the footsteps of its predecessors and collapse to a lower level of complexity. The next few years may well prove to be a critical tipping point in this endeavour.

# About SANE

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The South African New Economics Network (SANE) is a network of organisations and individuals developing new economic and financial models designed to promote poverty alleviation, community self-reliance, civic redevelopment, ecological sustainability, social equity, and economic justice for all South Africans.

SANE is organised as a free association of organisations and individuals who recognise the central role of economics in modern society and are concerned about the social and eco-systemic consequences of economics as it is conventionally taught and practised.

SANE challenges the narrow way in which most economists have tended to reduce people to economic agents, the environment to property, social institutions to markets, and progress to growth in production.

SANE questions the effectiveness and responsibility of the present world economic system in the face of widespread evidence of worsening income inequality, poverty, unemployment, violent crime, environmental degradation, unfulfilling work, and disintegration of traditional values and social systems.

SANE encourages dialogue on and experimentation with alternative economic theories, practices, models, systems, and choices which are purposefully designed to promote social and personal flourishing, economic equity and justice, community self-reliance, and eco-systemic sustainability.

## **SANE Activities:**

- Research, communication, civil society capacity building, and advocacy
- Internet discussion forum, email bulletins, and web site
- News Bulletins and New Economics newsletter
- New Economics study groups
- A monetary innovation think-tank group
- Promotion of local economic activity and community building through Community
- New Exchange & Financial Systems
- Accessing international New Economics literature and research, and running a New Economics resource centre
- Networking locally and internationally
- Experimentation with New Economic and Financial Models
- Open Participation for “Non-Experts”

To contact us, please email [info@sane.org.za](mailto:info@sane.org.za).

To join the SANE Community, please visit our website: [www.sane.org.za](http://www.sane.org.za).