



Heat up or cool down?

The Steve Miller band song could be Mother Earth's lament. One we cannot ignore. Global Warming needs to be halted, soon. How? That's what we want to examine in this issue of "Our Choices". According to Marga Edens, Vice President Corporate Responsibility of RWE AG, energy efficiency is the fastest solution.

♦ TEREK MARGA EDENS ♦ FOTOGRAFIE CHRIS DE BODE

I heat up, I can't cool down
You got me spinnin'
'Round and 'round
'Round and 'round and 'round it goes
Where it stops nobody knows

ARRACABABA, STEVE MILLER BAND

"Hey, my feet are getting wet. I need to move my beach chair back. But I thought I was already above the flood line! I can't move back any further or I'll be sitting on the boardwalk." Minor discomfort during my holiday last year on Borkum, one of the German Wadden islands. It was explained by an unfortunate series of events: a strong sea wind, chasing the waves onto the beach, which had eroded during the previous autumn storm. Easily addressed by deciding not to have lunch on the beach, but on the boardwalk. Seated there, I wrung the last drops of water from my

socks and looked out over the stormy sea. The boardwalk was designed to deal with it. It was even ready to face higher water levels. The same could not be said of many other artificial and natural embankments elsewhere in the world. If sea levels rise further – and according to the most recent IPCC report, they will likely rise another 16 to 82 cm this century – large tracts are in danger of disappearing underwater forever. Countries like Bangladesh and the island of Tuvalu have to yield area or disappear beneath the waves. What boardwalk can their inhabitants seek out?

Rising sea levels are a symptom of global warming. Seawater heats up as a result of higher temperatures and expands (about one meter rise per degree Celsius). Melting land ice nudges absolute sea level rises along. The warmer climate also has other negative side-effects: extreme weather (heat waves, persistent drought, heavy rainfall, flooding, off-the-charts hurricanes) which in turn have a negative impact on living conditions for humans (food and water shortages, tropical disease epidemics and plagues), animals and plants (shrinking biomes and decreasing biodiversity). If the world is to remain inhabitable in the face of these mechanisms, global warming must be limited to no more than 2 °C above the pre-industrial level by 2050. This is the limit defined by EU leaders in 1996 based on the international Climate Convention drawn up in 1992 in Rio de Janeiro. The conference marked the first time the question was asked explicitly: heat up or cool down?

That the question was formulated as a choice suggests a relationship between climate change and human activity. That relationship exists. The 2013 IPCC report notes that it is 95-100% certain that humans – that means us – are the primary cause of climate change. By emitting increasing amounts of greenhouse gases into the atmosphere, we have raised global temperature by 0.8 °C, and according to the International Energy Agency (IEA) and the World Bank, are on course for a 3.6 to 4 °C increase by 2050, far beyond the planetary boundaries. If we hope to turn this tide, Greenhouse Gas (GHG) emissions must peak by 2015, and then quickly drop, preferably to 0 by 2050. Two-thirds of global GHG emissions are currently caused by the energy sector. The combustion of fossil fuels for energy production generates carbon dioxide (CO₂). If we consider the amount of CO₂ we may emit in order not to exceed the 2 °C limit a budget, we have 800 billion tons available worldwide. That may seem like a lot, but since 1870 – the start of the industrial age – we have already burned through 50%, at increasing rates. Additionally, the available coal, oil and gas reserves are so large that the remaining budget can easily be exceeded many times over.

Furthermore, the IEA expects global electricity consumption to increase by over two-thirds between 2011 and 2035. If nothing changes, the energy sector will meet growing demand with an energy mix dominated by a 57% fossil fuel share (mostly coal). Corresponding CO₂ emissions will rise from 13 gigatonnes in 2011 to over 15 gigatonnes in 2035. This is hardly the road to achieving a 2 °C temperature increase by 2050.

So what can we do? We need to switch to a low/no-carbon energy system. This transition costs money (currently, 2% of the global gross social product, a percentage which increases the longer we wait) and time (while greenhouse gases accumulate in the atmosphere and we continue to invest in long-lasting high-carbon infrastructure which locks in future emissions). That is why we must begin addressing our energy consumption today. How? By seriously addressing energy efficiency. In all sectors of our economy (within or outside of the European Emission Trading Scheme) and all levels of society (households, businesses and governments). Higher energy efficiency will result in less primary fuel or power consumption for a product or service of equivalent quality. We are not (yet) talking about adjusting our standard of living, but modifying our behaviour and our processes. Dealing with energy more efficiently delivers environmental, social and economic advantages: lower CO₂ emissions (better for climate and health), lower energy bills (households with more disposable income, businesses with a stronger competitive position), more innovation and investment (in buildings, transportation systems, electricity networks, etc.), providing a stimulus for the economy. That the potential of energy efficiency is insufficiently being harnessed is due to misaligned financial incentives (the investor does not always benefit), high up-front investment, combined with insufficient financing opportunities, different investment or consumption priorities, and lacking information and transparency.

Unfortunately, some governments are losing sight of the importance of energy efficiency. The European Union in particular is showing a



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shift in priorities. In March of this year, European government leaders must decide on new (binding) agreements for the period after 2020, when the current EU climate and energy package lapses. Despite the urging of the European Parliament and a number of European governments to define strict energy efficiency goals, it appears likely the European Commission no longer wishes to spearhead energy efficiency – a missed opportunity! If European government leaders were to confirm energy efficiency as a key instrument for achieving our long-term climate goals, it would be a clear signal that all of us need to contribute. Households and companies by making consumption and production more energy efficient, governments by facilitating households and companies with information, regulations and financial incentives. But also by investigating whether energy efficiency measures can be introduced in sectors not covered by the Emissions Trading Scheme, such as transport and buildings. Energy efficiency can make a key contribution to the decarbonisation of our world on the road to 2050. Even greater efforts will also be required, but energy efficiency is something all of us can start with today. We have no choice in the matter. This is about more than a beach chair and a pair of drenched shoes. The response to global climate risks can only mean one thing: reducing emissions. That is why we must begin using our energy more efficiently, starting today. ■