

As a conclusion, it can be stated that the UIE 2024 congress was an inspiring event. The rather limited scale of the audience, together with the excellent accommodation and catering, facilitated social interaction.

Evolutions are intense, and the stakes are high. Therefore, it has been decided to organize the next UIE congress already in September 2026, together, for this time, with the Heating by Electromagnetic Sources (HES) conference at the university of Padua (Italy).

**About the author**



Koen Van Reusel received the degree of Master of Electrical Engineering from the KU Leuven (Belgium) in 1985, and the degree of Doctor of Engineering from the KU Leuven in 2010. Since 1992 he is at LABORELEC (Belgium), a technical competence center in energy processes and energy use. As senior expert he is member of the Power Networks Department. His current focus is on electrification of

industrial thermal processes, lightning protection in wind turbines, and measuring the effects of electromagnetic fields from a human health perspective. He is visiting professor at the KU Leuven, where he teaches “Electromagnetic Processing of Materials” and “Power Quality”. Koen Van Reusel is Member of the Management Committee of AMPERE; General Secretary to UIE, the International Union for Electricity applications; Member of the Board of Directors of FISUEL, the International Federation for the Safety of the Electricity Users; and Member of the International Electrotechnical Committee n° 27 “Industrial Electroheating and Electromagnetic Processing of Materials”.

***Ricky’s Afterthought:***

***Thoughts on COP29 and the climate change crisis***

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Last November Baku, Azerbaijan, hosted the 2024 Climate change crisis with most countries participating, with an estimate of some 70000 delegates taking part. However, not all the top leaders were present, notable absentees being the Presidents of the USA, Russia, France and the Peoples Republic of China, as well as the Chief of the European Union. It is very worrying when the

incoming President of the USA threatens to once again pull the USA out of the Paris Agreement promoting fears that many other countries might follow his lead and reduce their commitment to net zero policies. “Paris is one of those agreements where you need a critical mass of economic powers and emitters, past and present, to actually be able to address this challenge”, said Oli Brown, an associate

fellow at the London-based think tank Chatham House. What is more the President's Elect famous quote, of "drill baby drill" has reverberated throughout the meetings and seminars in Bacu increasing anxiety when he wishes to maximise profits through drilling for more fossil fuels. The only glimmer of hope was that the outgoing US administration promised to use their remaining couple of months in office to pull all stops to fulfil obligations that have been agreed. The leader of the US delegation in Bacu stated that the Administration is fully committed to meeting outstanding funding under the Biden Climate law.

Dr David King, ex Chief Scientific advisor to the UK Government and an honorary Fellow of St John's was invited to offer his comments at a Climate Change Crisis seminar at St John's College, Cambridge. His brief remarks concentrated on his time when he was in constant talks with the Foreign Office and Foreign Government agencies and alluded to the fact that since the important meeting in Rio in 1992 when climate change issues came to the fore, successive US presidents, both Republican and Democrats, supported by the powerful fossil fuel lobbies, not only did very little towards climate change but were actively blocking any attempt to do something to alleviate the problem. "We are losing 30 million tonnes of ice per hour and that water goes into the sea causing its level to rise by meters and it is irreversible" he started in desperation.

The powerful lobby in the USA consists of people going against what scientists have been saying all along about climate change and global warming. The sad aspects of all this is that the present economic system although has improved our wellbeing enormously at least in the developed world, and many would say driven by consumerism, one can also say that the same economic system is very bad for our ecosystem. He continued by stating that a few decades ago when global warming was becoming a major concern, the conventional wisdom was that China was the prime culprit as far as exhausting greenhouse gases into the atmosphere to be followed perhaps by India and South American countries. However, China in recent years has done much more than any other country to curb greenhouse gases by carbon capture and introducing massive renewable projects involving solar panels,

wind energy and hydropower as well as going strong on nuclear power. Apparently, there is no other country in the world that has done more to curb climate change than China, something that cannot be said about the biggest economy in the world, that of the USA. Of course, China needs to continue on such a path as it still is a big emitter of greenhouse gases.

Dr King concluded by stating that we cannot put a financial value on our ecosystem and we need a cultural revolution or cultural transition, that is, an ecological civilisation to succeed the one that was based on consumerism and if we are true to ourselves we ought to examine the damage we have done to our ecosystem\*, why we have done it and how we should move forward.

Another worrying aspect of COP29 is that first Azerbaijan is a heavy user of fossil fuels, with the President and chairman of COP29 stating triumphantly that "oil and gas are a gift of god", but secondly, my understanding is that nearly 480 carbon capture and storage (CCS) lobbyists were granted access to the venue. This signifies the worrying aspect that we still have many systems that emit harmful CO<sub>2</sub> gases onto the atmosphere and these lobbyists will inevitably promote CCS which hasn't proved to be as reliable as it has claimed in the past.

### **ClimaTRACESlab**

Another development emanating from my university entails the work of Dr Kamiar Mohaddes an Associate Professor at Cambridge Judge Business School and Fellow in Economics at King's College, who used the data from 174 countries to trace the link between temperature rise and income levels.

They modelled the world's economies under business-as-usual emissions, as well as a scenario in which humanity "gets its act together" and holds to the Paris Agreement and concluded that all countries will suffer economically under the current emissions trajectory, pointing to the fact that the US losing 10.5% of its GDP, and Canada over 13%, by the end of this century. Based on such research, a letter to the chair of the Federal Reserve was signed by 25 members of the US Congress suggesting that a link be established between climate risk and monetary policy. This year a new centre, the climaTRACES Lab was established with the view to spearhead data driven analyses at those who influence business and

policy. Mohaddes stated, “We want to work out how policy makers and businesses can best understand the cost of climate change and biodiversity loss. We need to take these communities with us through the right communications, and the right policy and product design.” ClimaTRACESlab will cooperate with the Boston Consulting Group on issues relating to climate change and economic policy stressing that an upfront investment of less than 2% of global GDP in additional efforts to prevent global warming will limit the temperature increase to under 2°C, avoiding the loss of an estimated 11% to 13% of cumulative GDP by 2100.

### **Financial help for developing countries**

Campaign groups suggest that the real figure needed should be around \$5 trillion for the developing countries to assist them with their transition to curbing climate change, however, these groups will accept \$1 trillion to 2030 followed by \$1.3 trillion to 2035. Alas such sums did not materialise but during last minutes negotiations at Bacu, beyond the scheduled two weeks, it was agreed that the richer countries will contribute annually only £300 bn until 2035 but in addition there will be assistance in the form of low interest loans and grants.

It remains to be seen how to apportion the agreed sum so that it is spread fairly to many developing countries. These sums should not be regarded as charity money and in addition no

provision is allowed for inflation. Some of this money will be used for protecting groups from the impact of climate change such as building defences against floods but the majority will be used for enhancing renewable schemes such as wind turbines and solar arrays for power generation. Most developing countries stated that this is a betrayal of promises made and with such relatively small sums they will not be able to keep temperatures to 1.5°C as per the Paris agreement. They argue that countries like China, USA, the European Union who have caused the problem in the first place should contribute more.

Finally, what are the consequences of all this following the US Presidential election when the incoming President does not believe that there is a climate change crisis? We all await with trepidation any pronouncements following his formal inauguration.

\*The ecosystem is an environment or a geographical area consisting of living organisms interacting with each other and the environment. It is limited to a specific area with local communities of living organisms.

\*\*The variety of life in the world or in a particular habitat or ecosystem