



Turning the Tide on Climate Change:

a foreword by Rajendra K. Pachauri

A potential for major improvements in energy efficiency

The Fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) released in 2007 presented the global community with several reasons for concern and a clear conclusion that warming of the climate system is unequivocal. Global average air and ocean temperatures are increasing, snow is rapidly melting and global average sea level is rising.

The Fourth Assessment Report found that most of the increases in global average temperatures since the mid-20th century are very likely due to the observed increase of caused by human activities (anthropogenic) greenhouse gas (GHG) concentrations.

Even with current climate change mitigation policies and related sustainable development practices, **all indications are that global GHG emissions will continue to grow over the next few decades.** This continued anthropogenic reinforcement of the greenhouse effect could lead to very negative impacts worldwide, including the increased occurrence of extreme precipitation events, heat waves floods, droughts and other natural catastrophes.

In order to combat the potentially catastrophic effects of climate change, the development of innovative technologies is essential. As stated in the Fourth Assessment Report, there is high agreement and much evidence that stringent efforts to reach GHG stabilisation levels can be initiated by the deployment of technologies that are either currently available or expected to be commercialised in coming decades.

The chemical industry can play a major role in tackling the challenge of climate change by developing solutions that reduce energy consumption. Through the development of new technologies, the chemical industry has the potential to bring about a major improvement in the energy efficiency of every sector of the economy.

I therefore warmly welcome the publication of this book written by Robert Kandel and sponsored by Cefic. A native New Yorker and Harvard graduate in astronomy, Kandel is emeritus senior scientist at the Laboratory of Dynamic Meteorology (LMD, Ecole Polytechnique, Palaiseau). In addition to his research and lectures at Ecole Polytechnique, he has served and continues to serve on numerous national, European, and international science councils, steering committees and working groups. He was awarded the Prix Roberval in 1990 and a Prize of Scientific and Technical Culture of the Ministry of Education, Research and Technology (France) in 1999.

In this book, Kandel details some of the innovative solutions that the chemical industry can contribute to the solution of the myriad of problems raised by climate change in a range of fields such as insulation, farming products, lighting, and vehicle manufacturing.

Kandel's book provides a call to action to the chemical industry. **Through the development of innovations that would improve energy efficiency, the chemical industry has the potential to move to the forefront of both mitigation and adaptation efforts.** Kandel's book is a step in the right direction. I encourage the industry to seriously practise what it preaches.

Chairman, Intergovernmental Panel on Climate Change