

## Vision for 2050: Dreams versus Reality

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There are just over 40 years from the present to 2050. In hindcast, the past 40 years from a global perspective have brought massive changes to communication and transportation technologies. It is not clear whether the past 40 years have seen increased education and significant reductions in poverty and certainly, the nature of human greed has become self-evident, particularly since the advent of the 21<sup>st</sup> century. So, where to for the next 40 years? Technologies, particularly energy technologies will certainly evolve. Whether an infrastructure that can match that of the current oil industry will be built and maintained is yet to be seen. At this time, there are strong advocations for nuclear as well as other alternative (e.g., wind, solar) energy deployment strategies. As the replacement of the horse and buggy for the automobile was touted to decrease pollution, care in the implementation of new technologies and geo-engineering strategies must be taken to minimize unintended consequences to human well-being and the climate system (e.g., what are the consequences of massive offshore wind turbines?).

It is through education on a massive global scale and narrowing the gap between the ultra-rich and poor thereby increasing that stable middle class a path towards sustainability may begin. To reach a sustainable human and environmental future by 2050 would require massive changes in political will as well as the will of the ultra-elite to maintain a lifestyle at any cost. These kinds of changes occur only when human perceptions of extreme adverse consequences to choices are acknowledged. Barring extreme world wars, or tipping points in the human/environmental Earth system, this is unlikely to occur.

By 2050, however, technologies, and particularly those that address medical needs and communication will be dramatically different from now. New energy technologies will be under rapid development and implementation. If we are lucky, very lucky, political will for clean energy technology transfer will be transparent with the successful deployment of clean energy technologies from entrepreneurial and developed nations to those in need. This can only be attained through education, education and education. As long as there is an ill-informed, irrational, impatient with complex issues constituency, poorly formed decisions will be the outcome of any future.