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1077 [Engineering Global Warming Reduction: Will Technology Save Civilization?](#)

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Room 6E (San Diego Convention Center)

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The industrialization, originally started in the Europe and now extending to the entire planet, is based on the immense availability of fossil energy. The industrial output produced for many decades disastrous amounts of pollution of the environment and degradation of the biosphere. The recent discovered phenomenon of global warming of the planet is one of the consequences of the technological and industrial progress. In fact, *The Limits to Growth* as announced in the famous Report to The Club of Rome in 1972, appears now to be rather *The Limits to Sinks and Waste*. Reducing the impacts of global warming corresponds in reducing the GHG concentrations in the atmosphere to levels close to the pre-industrial period. Three actions are under consideration today for reaching this objective: mitigation, adaptation and remediation, the latter is better known as geo-engineering or climate engineering. Mitigation solutions are well known and are high on the agenda of governmental actions. Adaptation consists in correcting the effects of global warming, they do not contribute directly or indirectly to decreasing GHG concentrations. Remediation or climate engineering deals with large scale interventions-planetary- for decreasing rising average temperature. Scientific observations of the effects of global warming appear to behave along non linear paths, resulting in much stronger and faster threats to the biosphere. Humankind has to act now, fast and with resolution, for avoiding irreversible changes in the biosphere, and putting into the danger the destruction of millenniums of human civilization. However, the mitigation processes being under discussion will take too much time to show real effects on global warming. A planetary intervention -climate engineering- with specific technological solutions, represents an additional instrument for reducing the effects of solar radiation. Its implementation is considered to be fast and planetary. The so far proposed solutions are based on advanced technological approaches. However, this time, these technological fixes have to be in harmony with biosphere requisitions necessary for the survival of humankind. Indeed, humankind has to prove now its capability the invent and apply solutions compliant with Gaia's underlying mechanisms. Technological development cannot continue, as in the past, along the pattern of the previous industrial revolution.

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