

## The ISEO World Sustainable Energy Mix Scenario for Environmentally Compatible Energy Strategies

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The energy supply for a growing world population is facing fundamental change for three reasons:

- 1 – Depletion of the mineral energy resources coal, oil, gas and uranium within a few generations
- 2 – Hazards and risks from the emissions of conventional thermal power plants and engines
- 3 – Conservation of the fossil feed-stocks for the chemical and metallurgical industries

To cope with these serious problems, benign, renewable energy systems must be multiplied within a few decades to replace conventional thermal power and heating systems and vehicle drives.

Alternative solutions are investigated by an ISEO task force for the period 2000 – 2050, with a projection of the new, long-term sustainable energy mix for a prosperous survival on Earth.

The ISEO energy model, characterized by increasing sustainability, assumes that the annual world energy consumption growth will be limited to a cumulated average of 2 % as shown in the graph with the black curve, which means in practical terms a convergence of the energy consumption of affluent nations with developing nations to a reasonable average of some 20'000 kWh per capita.

The red depletion curve of mineral energy resources is based on current reserve assessments and the urgent need to reduce such consumption to safeguard the health, biosphere and climate.

For the resultant green curve comprising “Green Power & Heat” and “Clean Vehicle Fuels” detailed forecasts are shown for all energy options, enabling the transition to a sustainable energy mix, resulting in an annual world energy investment volume of some 1000 billion USD/EUR.

