



**Sustainable Energy Solving the Economic & Environmental World Crisis  
Preparations for the World Sustainable Energy Year by WSEC Congress**

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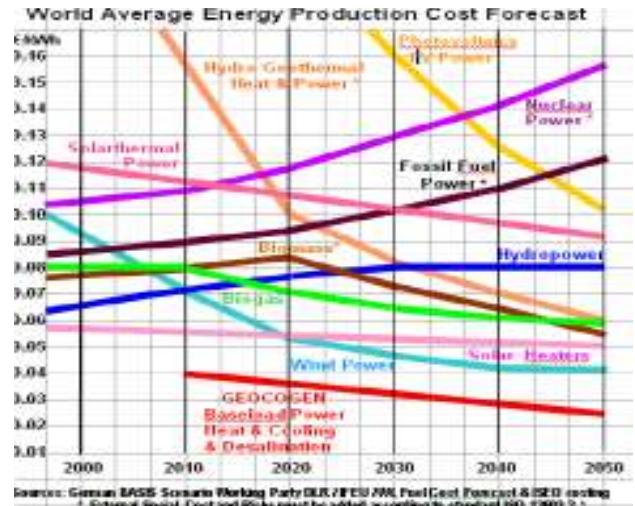
World Sustainable Energy Conference ► [Leading the Way to Global Prosperity in Balanced Nature](#)

**World Sustainable Energy Conference**

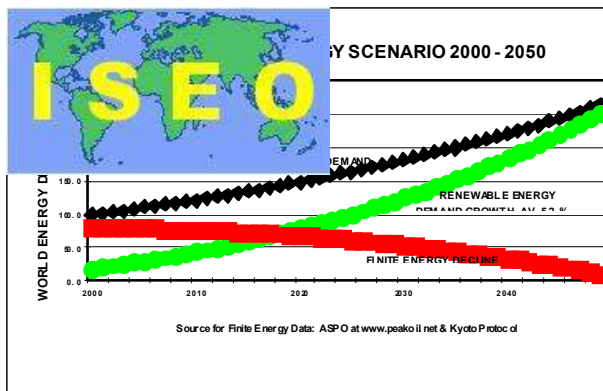
Preparations for the World Sustainable Energy Conference WSEC from 10 to 12 January 2012 are in full swing. It will start the World Sustainable Energy Year 2012 and deliver a proficient energy strategy input to the Rio+20 Summit to celebrate the 20<sup>th</sup> anniversary of the historic UN Summit in Rio de Janeiro on Environment & Development (UNCED). It was in Rio where the predecessor of ISEO, the World Sustainable Energy Coalition proclaimed the Global Energy Charter for Sustainable Development. See [www.uniseo.org](http://www.uniseo.org). Enrolments on [www.wsec.ch](http://www.wsec.ch).

The world society is at a turning point “to be or not to be” after a century of irreparable destruction, wars, ruthless exploitation of finite resources, sea level rise and disasters from climate change, poisoning of life, radiation and the eradication of rare species.

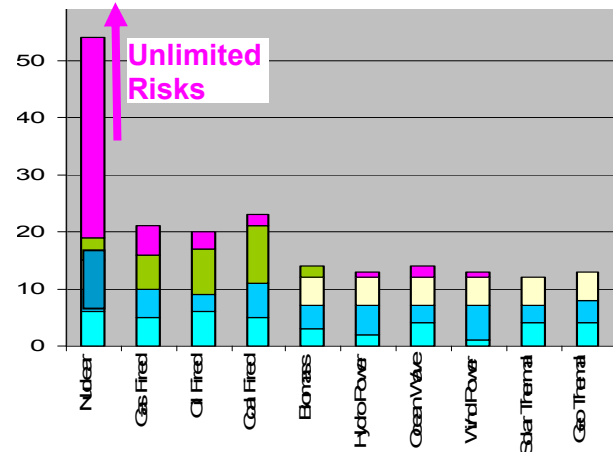
The main task of WSEC is to discuss and update the renewable energy forecasts and cost prediction of the following diagrams:



The energy cost estimate prediction

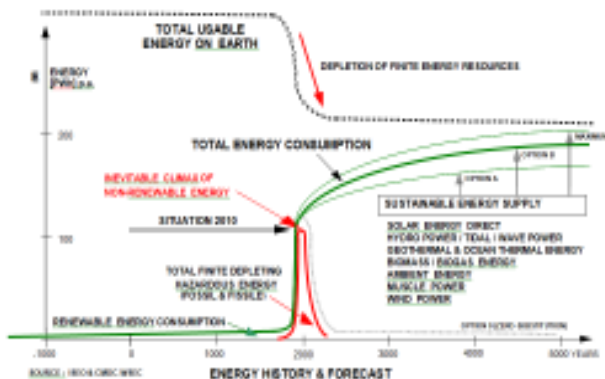


The inevitable depletion scenario



Energy systems comparison with the production costs ranging from the estimated minimum (light blue) to the maximum (dark blue) depending on the system type, size and location.

The green cost portion shows the external social cost of health care, loss of air and water quality, loss of bio diversity and impacts on the climate. The white portion shows possible sales price reductions by CO<sub>2</sub> credits from the CDM or JI mechanisms and the violet parts are the estimated risk cost in terms of insurance premiums for the coverage of weather disasters, terrorist attacks, meteorites and state guarantees in cases of uninsurable risks like nuclear power radiation leaks and long term global warming damages such as melting glaciers and ice caps, loss of land and migrations caused by rising oceans.



The inevitable mineral energy peak

## The Economic Dimension of Energy

Energy is the backbone of all civilized societies and the top economic driver together with the vehicle and food industries. Renewable energy sources like wind, solar, bio, geo and hydro are now three times higher than the level they achieved 15 years ago.

Total annual global energy use is in the order of 12 billion tons of oil equivalent. Assuming an average oil price of 100 \$ per barrel, this results in energy expenditures of 8 trillion \$. In the world economy of about 60 trillion \$ the energy share is about 13 %.

**"A complete conversion to renewable energy by 2050 is possible from a technical and ecological point of view,"** said Jochen Flasbarth, president of the German Federal Environment Agency. "It is a very realistic target with technology that already exists – it is not a pie-in-the-sky prediction" he said and more renewable technology is on the way, like revolutionary modern physics and bio chemistry!

Flasbarth said the Environment Agency's study found that switching to clean, green electricity by 2050 would have economic advantages, especially for the vital export-oriented manufacturing industry. It would also create tens of thousands of jobs.

## China Clean Energy Revolution

The China Securities Journal reported recently that the country will soon release a plan for investing 739 \$ billion in "newly developing energy industries" through 2020 with millions of new jobs. China has already over 100 Million electric vehicles in use.

## The World Sustainable Energy Year

The history of the term "Sustainable Energy" started twenty years ago when the CMDC-WSEC World Sustainable Energy Coalition was founded at the first World Clean Energy Conference. The UN Commission of Sustainable Development (CSD) and many commissions became part of the ambitious Millennium development goals.

### Sustainable Energy = More Employment

In an economic and monetary crisis, employment is an important aspect of prosperity and survival for many nations. Of the 3 billion world labour force about 10 % might work in the decentralized sustainable energy sector in future, including energy efficiency systems and clean transport.

Driven by the climate crisis, the notion of "green jobs"- especially in the renewable energy sector - is now receiving great attention. Currently several hundred thousand people work either directly in renewables or indirectly for suppliers. The wind power industry currently employs over one million people; solar energy employs a similar number. More than one million jobs are found in the biomass and bio fuels sector, besides the positive impact on agriculture. Hydropower and geothermal energy are also growing employers, plus all the sub-contractors to the sustainable energy industry.

WSEC and ISEO are analysing the sustainable energy evolution by following matrix and by an employment questionnaire matrix – see agenda and full size questionnaire on [www.wsec.net](http://www.wsec.net).

Energy Forecast													
Country / Community													
Population		2010		2020		2030		2040		2050		2100	
Energy Type	Quantity	Av. Cost	Quantity	Av. Cost	Quantity	Av. Cost	Quantity	Av. Cost	Quantity	Av. Cost	Quantity	Av. Cost	
	GWh/yr	€/kWh	GWh/yr	€/kWh	GWh/yr	€/kWh	GWh/yr	€/kWh	GWh/yr	€/kWh	GWh/yr	€/kWh	
Total Final Energy													
Total Electricity Use													
01 Solar Thermal Energy													
02 Concentrated Solar Power (CSP)													
03 Photovoltaic Power (PV)													
04 Hydropower													
05 Wave Power													
06 Tidal Power													
07 OTEC Heat Energy & Power													
08 Wind Power													
09 Geothermal Heat Direct													
10 Geothermal Heat Pumps													
11 Geothermal Power													
12 Geothermal Cogeneration Heat													
13 Biomass and Waste (solid)													
14 Biofuels, Ethanol etc. (all uses)													
15 Biogas (all uses)													
16 Bioenergy Power (Electricity)													
17 Methanol (synthetic)													
18 Novel Energy Heat													
19 Novel Energy Power													
20 Coal Power Plants													
21 Coal for Heat													
22 Petroleum Power Plants													
23 Petroleum for Heat													
24 Petroleum for Transport													
25 Natural Gas Power Plants													
26 Natural Gas for Heat & Vehicles													
27 Nuclear Power													

Explanations Av. Cost = average energy production cost of different system suppliers converted into EURO Energy Consumption in GWh (final demand side energy quantity) 1 GWh = 3.6 TJ  
 03) PV on the ground, on buildings and in space  
 14 & 15) Including Algae  
 12) Heat part of geothermal power plants  
 18 & 19) Novel Energy from new systems like (cold) fusion, neutrinos, osmotic energy etc.