PECC 22nd General Meeting Beijing

Economic Cooperation in Asia Pacific: 2014 and Beyond

The Energy Challenge of Sustainable Development and Energy Security

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Liberté • Égalité • Fraternité
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du Développement
durable
et de l'Énergie

A new energy transition is necessary

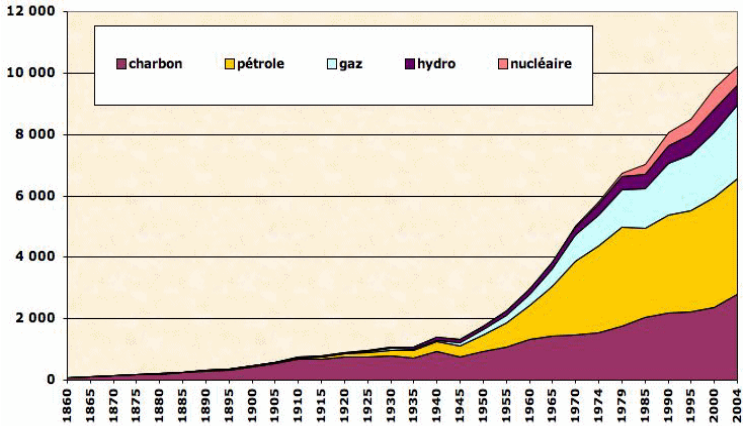
- While the first and second industrial revolutions , largely based on the exploitation of coal and oil, opened a century and a half of global growth, a new energy transition is necessary .

- Today, two billion people left behind by the growth model , do not have access to modern energy.

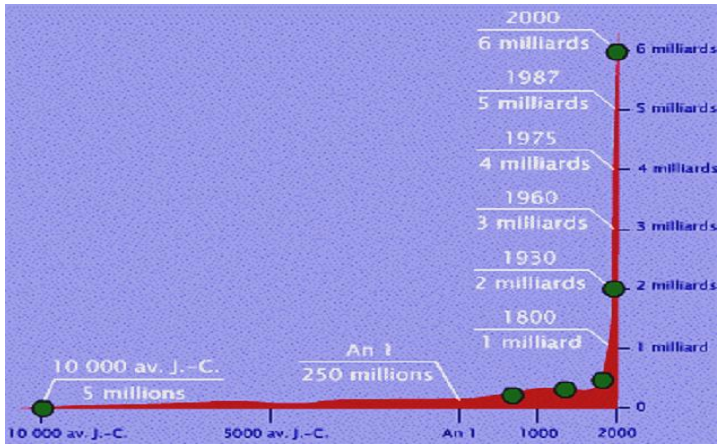
- Moreover, this model still consumes more energy in conditions less sustainable. Energy resources to meet this consumption, which are 80 % of fossil fuels (oil, gas , coal) are both finite , unevenly distributed , tendentiously increasingly expensive and a leading cause of global warming.

Non sustainable trajectories for energy and environment

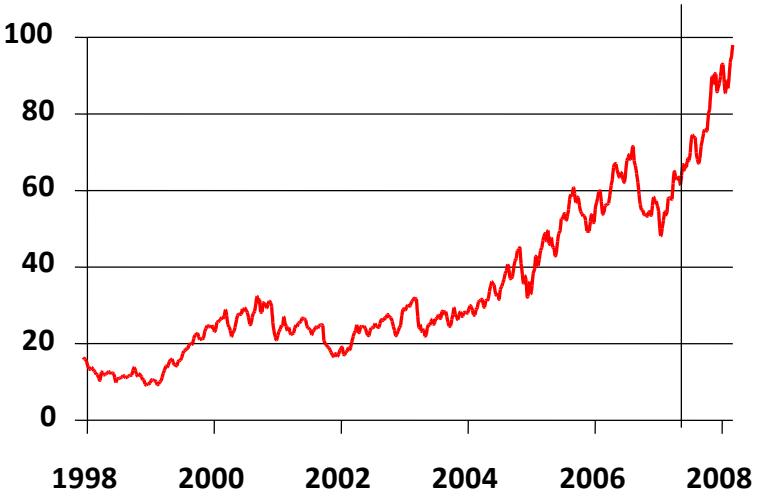
World energy consumption (Mtoe)



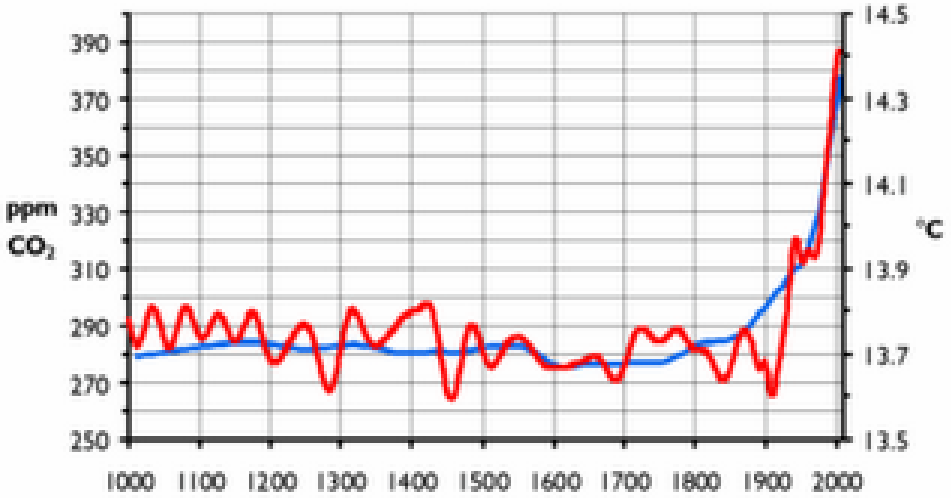
World population (billions inhabitants)



Oil price (US $/bl)

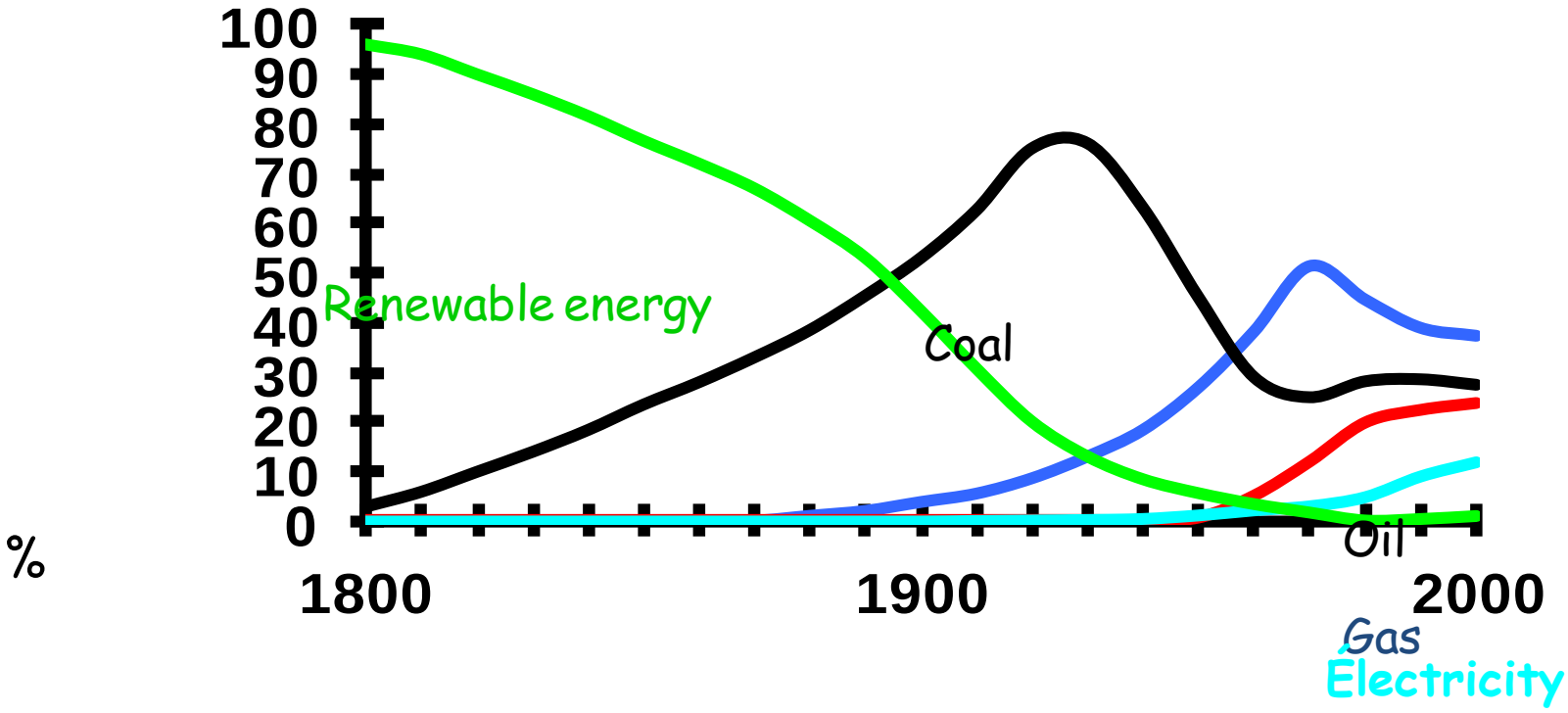


CO_2 concentration in atmosphere (ppm)



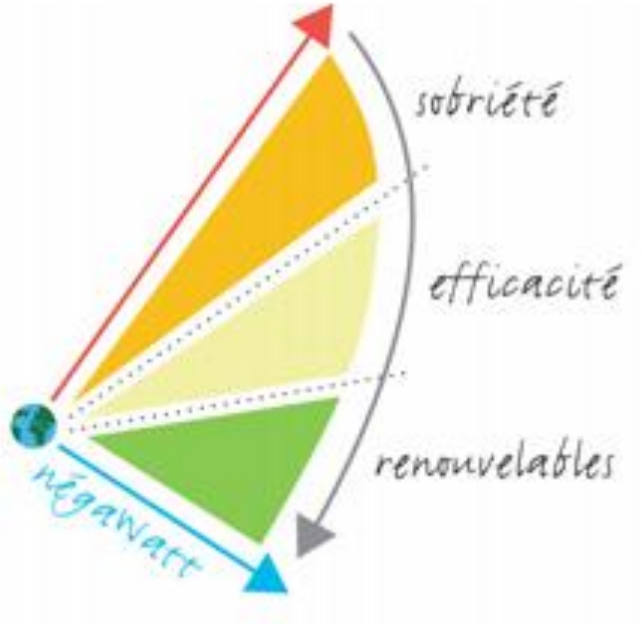
Renewable energy has dominated the history of humanity

19th century wood, water, wind, animal traction, slaves
19th century coal, steam 20th century oil, gas, hydro, nuclear



Can we go back to renewable energy?
And have power when you need it and not when it is available

The negawatt scheme



Sobriety

Efficiency

Renewables

(In this order, sobriety first)

Questions for an Energy transition

Imagine together our energy future ?
An unsustainable growth ?
What is the energy for to-morrow ?

The European commitments
In France : a new Law on Energy Transition

What are the costs of energy transition?
Which benefits and which funding ?

Development of Renewable energies

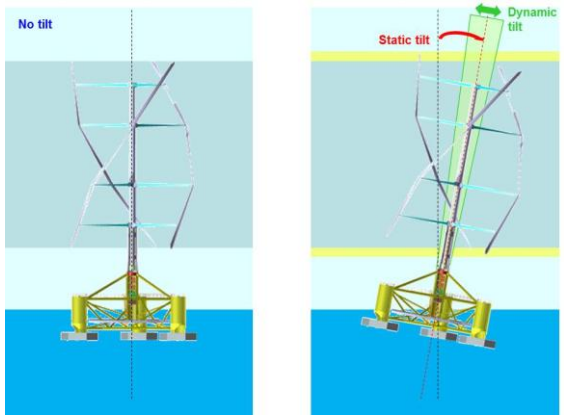
- Cost now, cost to morrow ?
- Financing ? Who pays, for what ?
- Feed-in Tariffs ? Or targeted grants ?
- For R&D, technologies and Projects,
- Innovation and Competitiveness
- Industrial Policy, Manufacturing.

Innovation in Marine Renewable Energy

Ocean huge energy resources: a major challenge for the XXI century? Ocean accumulates thermal energy, and returns it in many forms, Kinetic energy, potential energy, thermal energy .. Many new marine technologies Wind offshore floating windmills, Tidal currents, Waves and swell, OTEC,

Tidal Current

Offshore Floating Windmills



Ocean Thermal Energy OTEC Guadeloupe