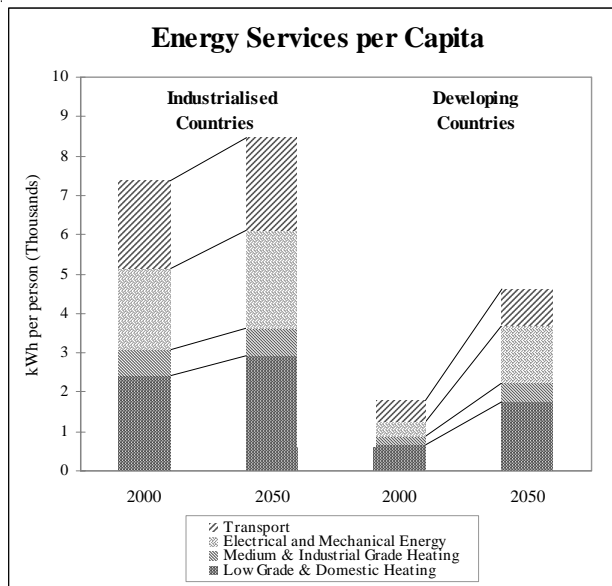
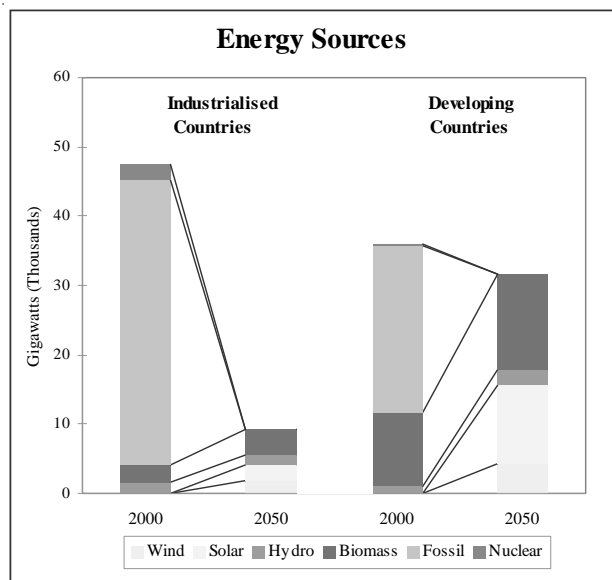


## Global Vision for Sustainable Energy



Development of energy services (heat, light, transportation, etc.) per capita in 2050 compared with those in 2000.



Combining the development of the energy service level with best available technologies in energy efficiency, it will be possible to cut demand to sustainable levels to be covered by local renewable energy sources. Quantities are shown in TWh/year.

## Sources for the Visions and Further Info

The global scenario for 2050 is from Low Energy Consumption Scenarios, Bent Sørensen et.al., Roskilde University, Denmark. See: <http://mmf.ruc.dk/energy/downloads.htm>

The European and national visions and their documentation are available at <http://www.inforse.org/europe/Vision2050.htm>

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*INFORSE-Europe is supported by the European Commission DG Environment - Civil Society Support in 2002, 2004-2006. This leaflet represents the views of INFORSE and is the responsibility of INFORSE and not of the European Commission.*

# GLOBAL VISION 2050 100 % RENEWABLES



**Sustainable Energy Vision 2050**  
 A proposal to achieve a sustainable energy system, following environmental & social imperatives



**INFORSE**

## Sustainable Energy Vision 2050: 100 % Renewables

In the coming 50 years, it will be crucial that the world's energy systems be made environmentally benign and sufficient to meet everybody's energy needs. We have better technologies than ever before to use energy efficiently and to use the world's renewable energy resources without harming the environment.

The purpose of the INFORSE's vision is to show how we can use these technologies to change the current unsustainable energy system into a worldwide sustainable system to meet the global imperatives of achieving environmental/ climate stability and of ensuring basic energy security for all.

### Global Scenario

Based on studies done by independent researchers and on proposals from the INFORSE network, a plan is proposed to supply the world with 100% renewable energy by 2050 and, accordingly, a 100% reduction of energy-related CO<sub>2</sub> emissions.

The scenario for 2050 is based on the following assumptions:

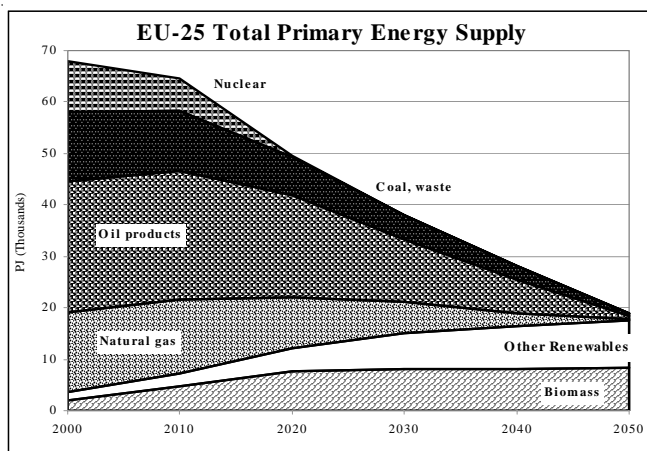
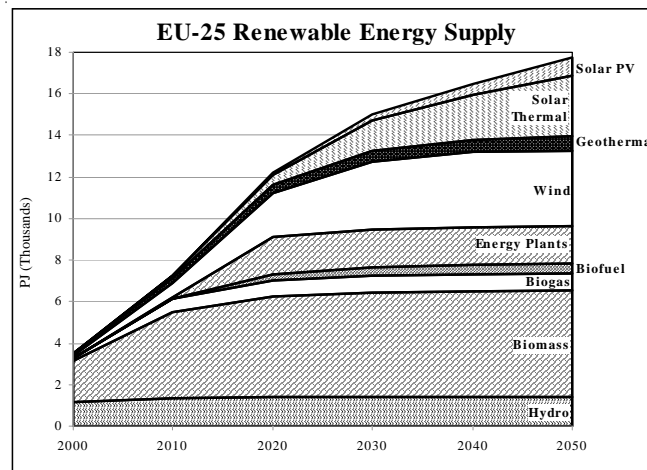
- That the world population will reach 9.4 billion in 2050;
- That all basic energy and food needs are met;
- That the best available energy-efficiency technology today is the average technology in 2050. This gives an efficiency increase of 4-8 times (efficiency seen as ratio between used energy and resulting energy services in the form of heating, cooling, light, transport etc.)

The proposed changes will have a number of beneficial effects. They will provide a more secure energy supply than the current situation and they are compatible with global equity. The additional costs to society will be small or even negative if the changes are well planned and if they are phased in as part of the natural transitions of power plants and equipment. They will require initial investments and long-term strategies, nationally and internationally. They will also require major shifts in the energy-supply system as well as in energy-consuming equipment and structures.

## Vision for the EU Countries

Within the framework of the global sustainable-energy vision, INFORSE-Europe and its member organisations are working on European visions, covering thus far the 15 "old" EU countries and the EU-25. They build on existing work and uses INFORSE's spreadsheet tool.

The vision follows the EU target of 12% renewable energy by 2010 and the target proposed by a large number of NGOs of 25% renewable energy by 2020. The shares of renewable energy in 2030, and 2050, respectively, are 40% and over 95%. In the first decades windpower and biomass are most important, while later in the period, solar technologies are expected to capture most of the growth. End-use efficiency is estimated to increase 4 times until 2050, except for houses where the increase is limited to 57%.



## National Sustainable Energy Visions

In cooperation with national members, INFORSE has developed a number of national visions, showing how a sustainable energy vision could look for the specific country, depending on renewable energy resources, energy consumption patterns, and priorities of the national NGOs involved.

Visions have been developed for Ukraine, Romania, Belarus, Denmark and other countries. While most of the visions follow the global vision of phasing out fossil fuels in 50 years, the Danish vision includes a transition of the local and national energy systems in just 25 years, from 2005 to 2030.

