

The logo for the European Science Foundation features the words 'EUROPEAN', 'SCIENCE', and 'FOUNDATION' stacked vertically in a bold, sans-serif font. The first letter of each word is a large, green, stylized character that overlaps the word below it. Below the main text, the tagline 'SETTING SCIENCE AGENDAS FOR EUROPE' is written in a smaller, black, sans-serif font.

EUROPEAN
SCIENCE
FOUNDATION
SETTING SCIENCE AGENDAS FOR EUROPE

Dr. Marc HEPENER
Director of Science and Strategy Development

Bruxelles, 29 November 2010

About ESF

- Independent association of European Science Organisations
- Established in 1974
- Offices in Strasbourg, Brussels, Ostend
- Budget: 52M€ in 2008
(incl. COST)
- Staff: 151 (incl. COST)



ESF mission

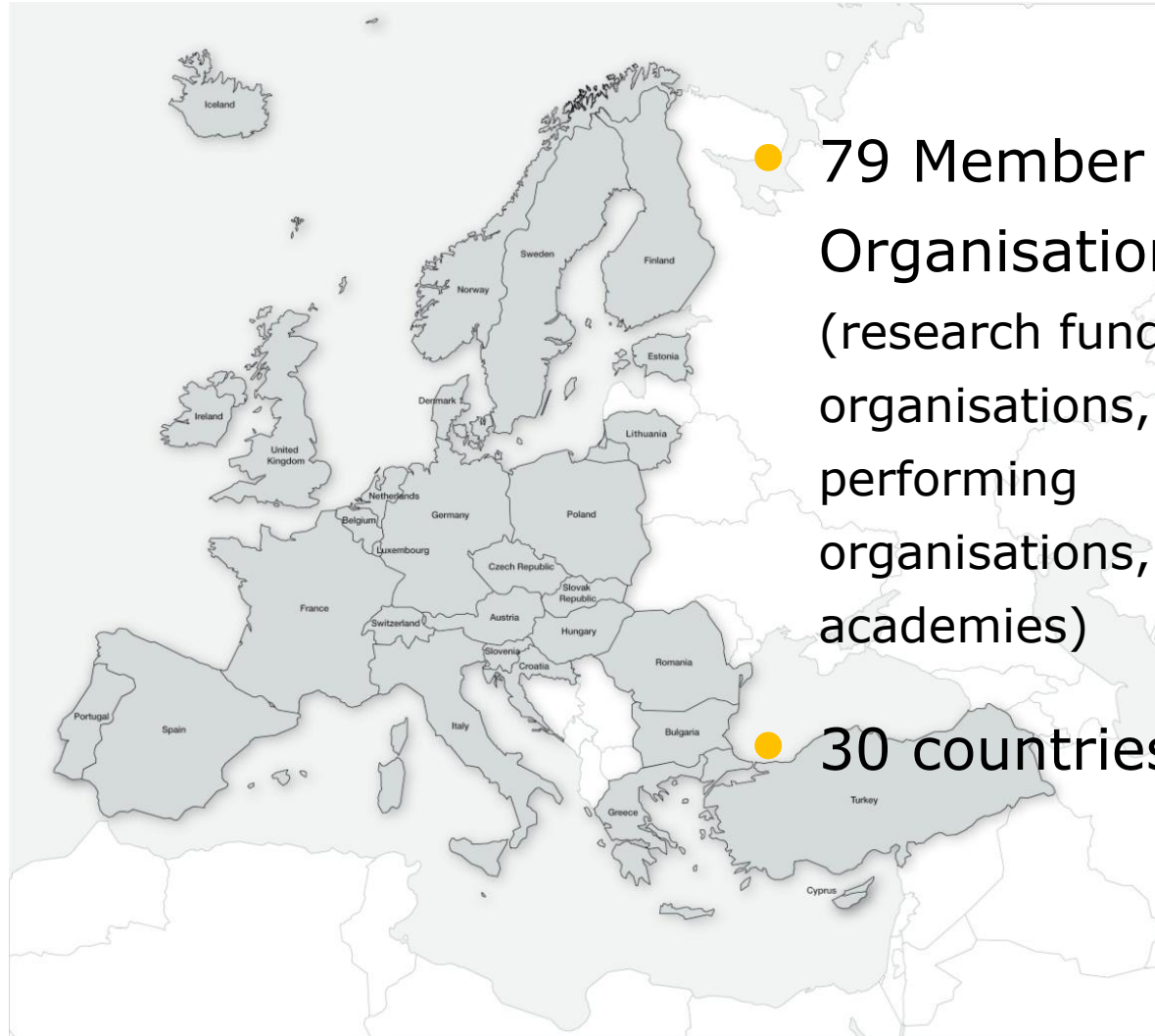
The European Science Foundation provides a common platform for its Member Organisations (MOs) in order to:

- **Advance European research**
- **Explore new directions for research at the European level**

(from Strategic Plan 2006-2010)

Through its activities the ESF serves the needs of the European research community in a global context.

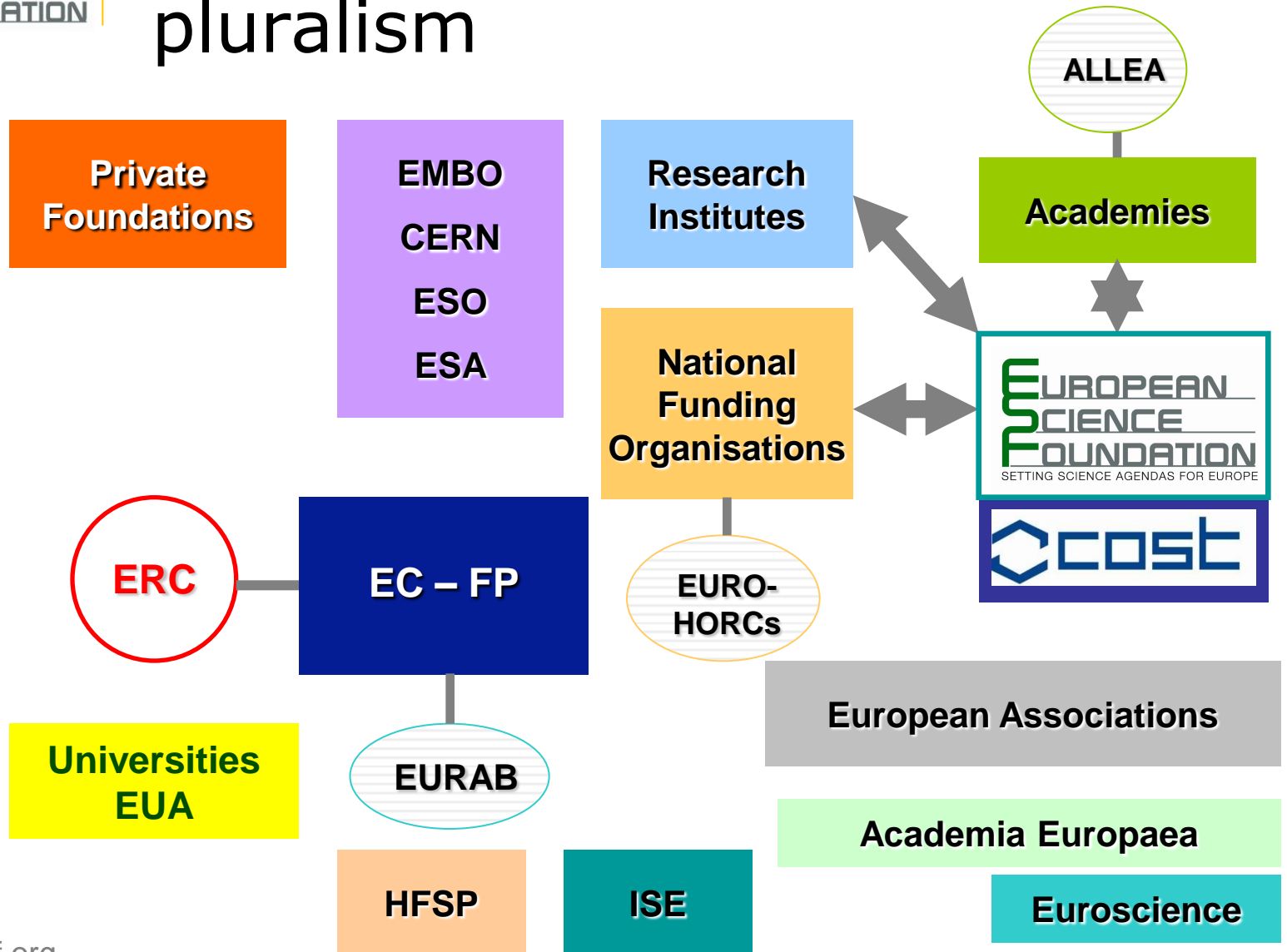
ESF Member Organisations



● 79 Member Organisations
(research funding organisations, research performing organisations, academies)

● 30 countries

ESF and partners in the ERA: pluralism

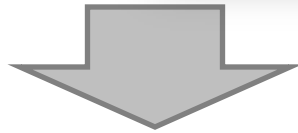


Scientific domains covered by ESF

- Humanities
- Life, Earth & Environmental Sciences
- Medical Sciences
- Physical and Engineering Sciences
- Social Sciences
- Marine Sciences
- Nuclear Physics
- Polar Sciences
- Radio Astronomy Frequencies
- Space Sciences



ESF



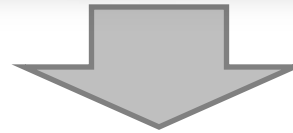
**SCIENCE
STRATEGY**

**Exploratory
Workshops**

Forward Looks

MO Fora

**Science Policy
Briefings**

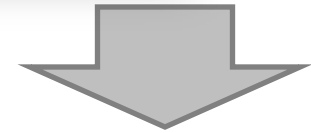


**SCIENCE
SYNERGY**

**Research
Conferences**

**Research Networking
Programmes**

EUROCORES



**SCIENCE
MANAGEMENT**

COST

**Other EC contracts
(e.g. ERA-NETs)**

**EUROHORCs
activities**

Peer review

Forward Looks



- Medium - long term scientific perspectives
- Multidisciplinary topics viewed from a European level
- Bring together scientists and policy makers from ESF Member Organisations
- Wide consultation
- Should result in major reports and action plans



www.esf.org/flooks

Science Policy Briefings



- Address selected science policy issues of key concern to the ESF Member Organisations and the wider scientific community
- By drawing on the advice and expertise of the ESF's membership, the briefings aim both to provide information and to promote discussion

EUROPEAN SCIENCE FOUNDATION
BETTING SCIENCE AGAINST EUROPE

SCIENCE POLICY BRIEFING • September 2008 34
Harnessing Solar Energy for the Production of Clean Fuel

Contents
1. Executive Summary
2. Introduction
3. Current Status of Solar Fuel
4. Environmental and Economic Aspects
5. Conclusions

Foreword
The quality of human life in the industrialised world has risen thanks to a wide variety of products of human history. In Europe, this development has been supported by a combination of political and economic stability and also because of an ever-growing diversity of energy sources primarily from fossil fuels.

The human population on this planet has risen from approximately 0.5 billion in 1850 to over 6 billion in 2005. In the same time period, the industrialised economies have expanded in terms of production and global trade. Additionally, population increases have exponentially risen (in our case in 1950 from approximately 1 billion to over 6 billion).

In the light of it is increasingly evident that our fossil fuel dependence has become unsustainable and dangerous. It is upon several crucial issues that we must focus our attention: the need to reduce greenhouse gas emissions, the need to reduce global climate change, the need to reduce global energy consumption, the need to reduce global energy dependence on fossil fuels, the need to reduce global energy dependence on fossil fuels, the need to reduce global energy dependence on fossil fuels.

Development of new technologies for clean energy. In order to improve environmental sustainability it is imperative for the world economy and for Europe, in particular, to conduct development and applied research in the production of clean fuel.

New technical aspects of energy systems are also highly relevant in bringing sustainable energy. Social and ethical research is needed to understand the implications of energy security and safety issues and of new emerging environmental concerns on our activities and way of life. Energy research in the EU's culture that leads to the impact of science and technology on economic efficiency and living standards. There is a need for greater engagement and cooperation of technical research with social sciences in the field of energy research.

The present ESF Science Policy Briefing provides an overview of the current status of solar energy and the challenges, opportunities and risks for solar energy production. The document also provides a number of recommendations for the ESF and for the broader community.

The Science Policy Briefing, 'Harnessing Solar Energy for the Production of Clean Fuel', is a contribution to the ESF's Science Policy Briefing Series. It is a joint effort of the ESF and the European Commission.

Professor Mark Malmgren
ESF Chair Executive

EUROPEAN SCIENCE FOUNDATION
BETTING SCIENCE AGAINST EUROPE

SCIENCE POLICY BRIEFING • March 2008 36
European Food Systems in a Changing World

Contents
1. Executive Summary
2. Introduction
3. Current Status of European Food Systems
4. Environmental and Economic Aspects
5. Conclusions

Foreword
Food is essential for human wellbeing. For millennia, food has been produced, traded and consumed locally, with little or no international trade. In Europe, this development has been supported by a combination of political and economic stability and also because of an ever-growing diversity of energy sources primarily from fossil fuels.

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Professor Mark Malmgren
ESF Chair Executive

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SCIENCE POLICY BRIEFING • December 2008 35
Advancing Systems Biology for Medical Applications

Contents
1. Executive Summary
2. Introduction
3. Current Status of Systems Biology
4. Environmental and Economic Aspects
5. Conclusions

Foreword
Systems biology is the systematic study of biological systems. It integrates the study of biological systems at the molecular, cellular, tissue, organ, and organismal levels. It is an interdisciplinary field that combines experimental and computational approaches to study the complex interactions between different components of a biological system.

Introduction
Conventional modes of medical and biological experimentation are primarily aimed at understanding the function of individual components of a system. However, the complexity of biological systems requires a more holistic approach. Systems biology provides a framework for understanding the interactions between different components of a biological system. It is an interdisciplinary field that combines experimental and computational approaches to study the complex interactions between different components of a biological system.

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Excellence Openness
Responsiveness Pan-European
Ethical awareness and human values

ESF Coordinates

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