



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Bundesamt für Energie BFE
Office fédéral de l'énergie OFEN
Ufficio federale dell'energia UFE
Swiss Federal Office of Energy SFOE



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ENERGY RESEARCH OF THE SWISS FEDERAL OFFICE OF ENERGY (SFOE)



AGENDA

- **Organisation and duties of the energy research of the SFOE**
- **National und international connections**
- **Finance**
- **How to get funding**



DUTIES OF THE ENERGY RESEARCH

Coordination and supervision of energy research related tasks

- strategic – Elaboration of **the master plan** of the Confederation and of the SFOE

- coordinative – [Overview](#) about national and international **research projects and activities**
 - [Linking](#) Swiss research community, contacts
 - [Statistics](#) about the Swiss energy research
 - Representation of the SFOE in **national and international [committees](#)**

- operative – **Acquisition, evaluation and supervision of [projects](#)**
 - Leading the secretariat of **CORE**
 - Conferences, workshops, seminars, etc.

- administrative – Contracts, [budget](#) planning, etc.
 - Letters of citizens, perpetui mobili etc.



RESEARCH PROGRAMS OF THE SFOE

Renewables (~7.5 million CHF)

- Bioenergy
- Geoenergy
- High temperature solar energy
- Photovoltaics
- Solar heat and heat storage
- Hydro
- Hydrogen
- Wind energy

Society and economy (~2.1 million CHF)

- Energy–economy–society
- Radioactive waste
- Dams

Energy efficiency (~9.0 million CHF)

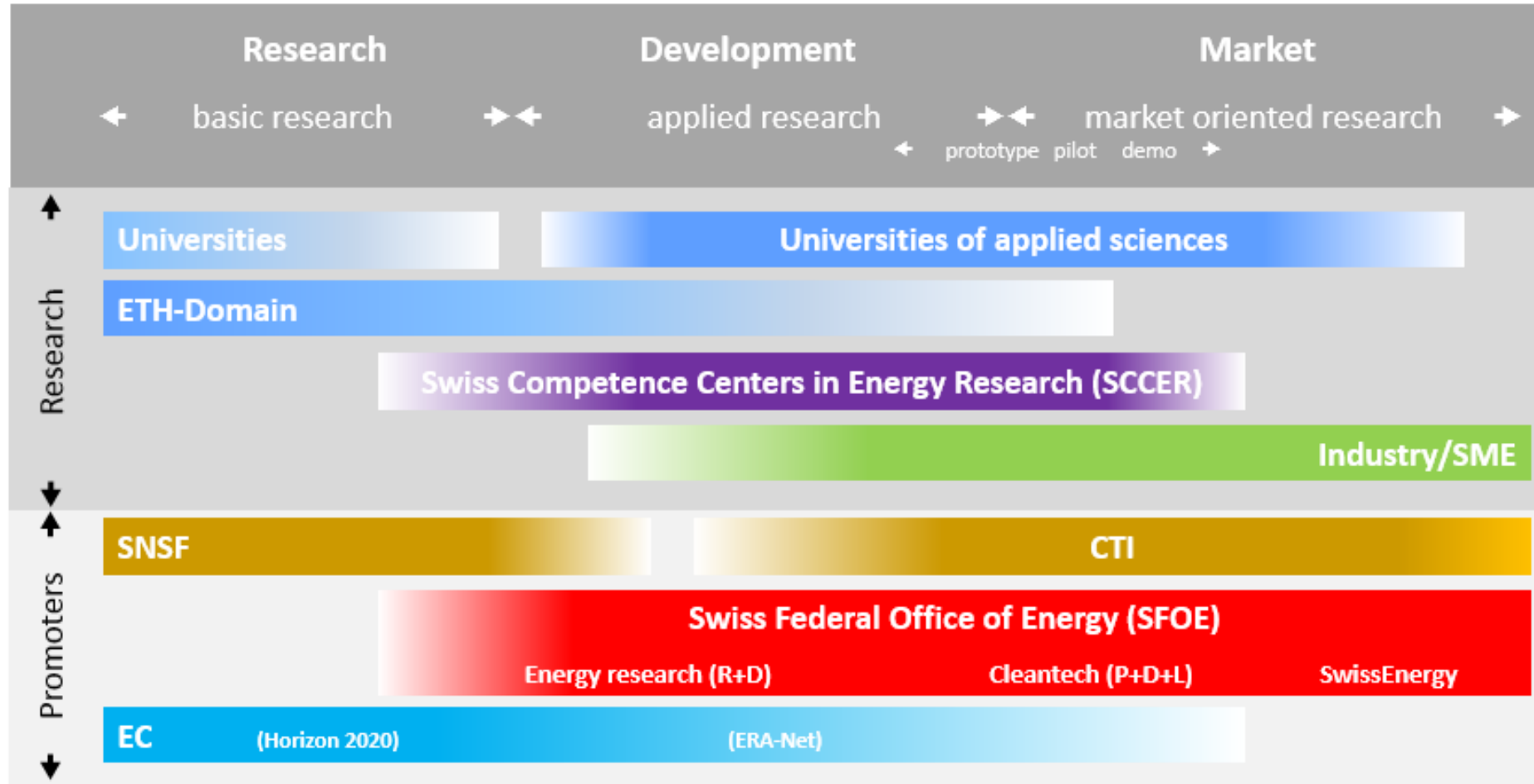
- Fuel cells
- Electricity technologies
- Buildings and communities
- Grids
- Combustion
- Industrial processes
- Mobility
- Heat pump technologies

P+D+L (~35 million CHF)

- Pilot, demonstration and light house projects



INNOVATION CHAIN: FROM BASIC RESEARCH TO MARKET



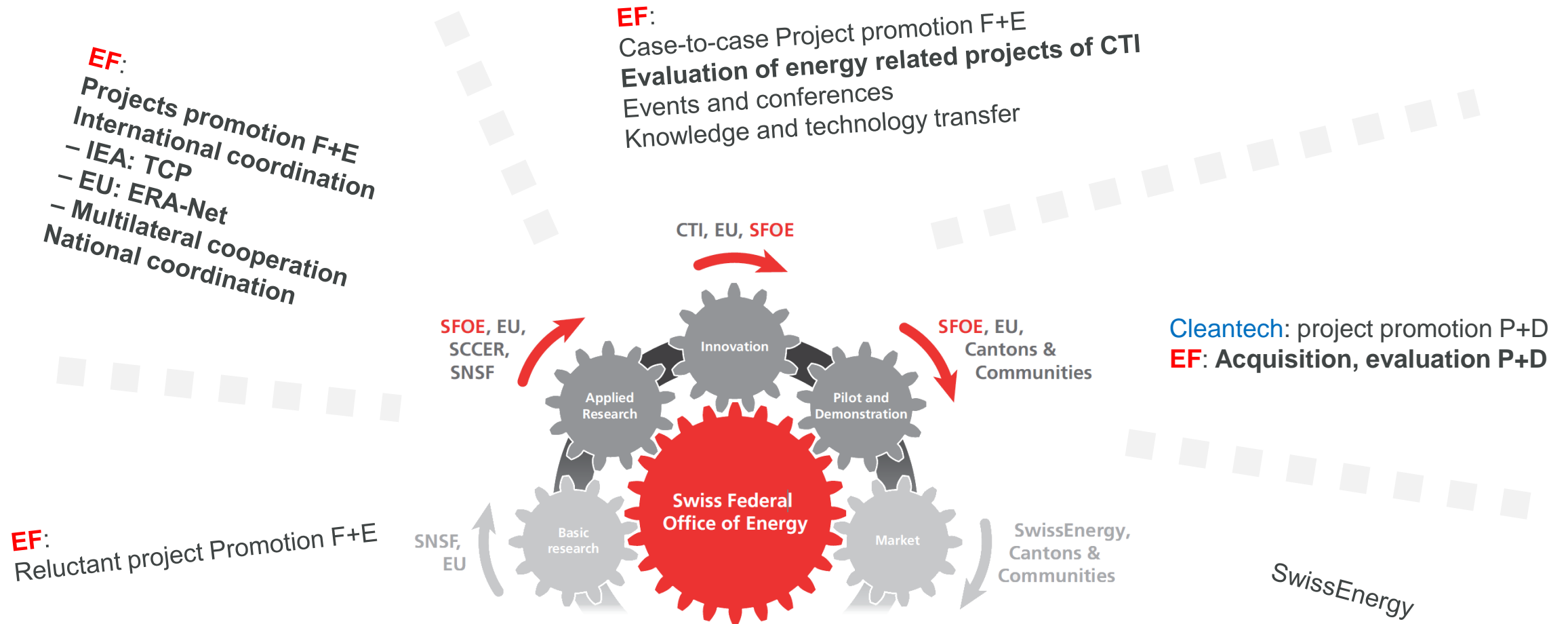
SNSF: Swiss National Science Foundation
CTI: Commission for Technology and Innovation

SME: Small and medium-sized enterprises
R+D: Research and development

ERA-Net CFA: European Research Area Network
P+D+L: Pilot, demonstration and light house projects



TASKS OF THE ENERGY RESEARCH





MANAGEMENT ENERGY RESEARCH OF THE SFOE

Section Energy research
8 heads of domain



Other sections
4 heads of domain



External persons
8 program managers



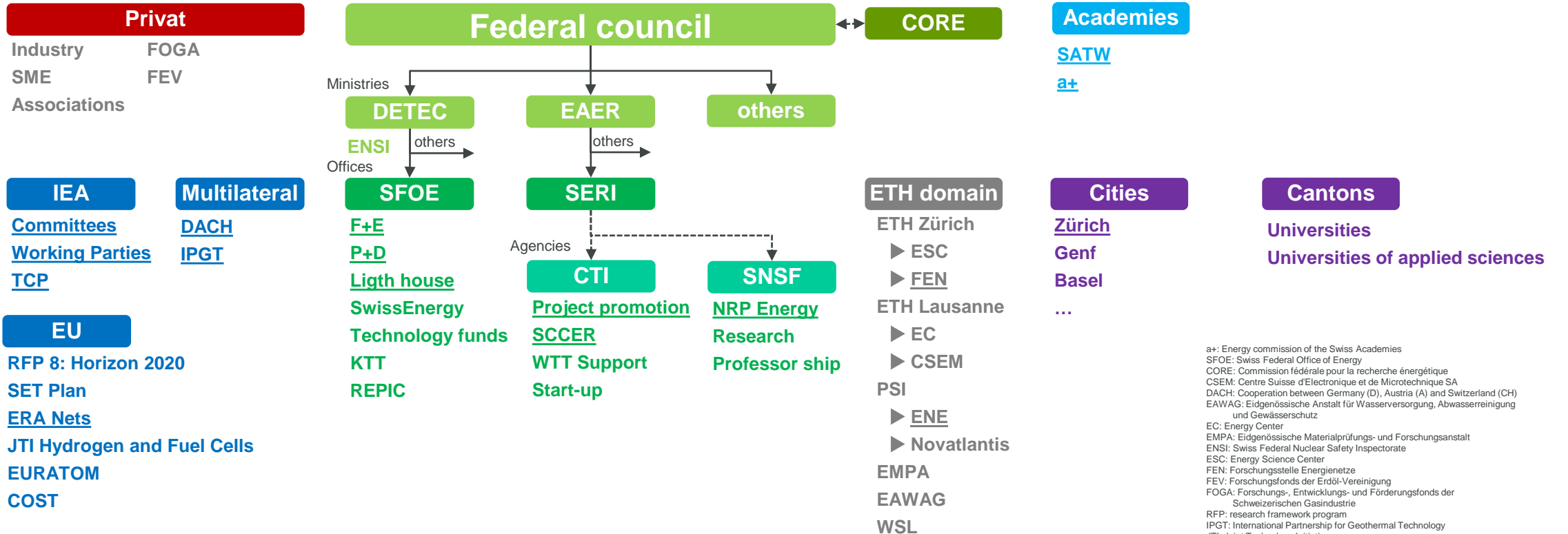


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NATIONAL AND INTERNATIONAL INTEGRATION



a+: Energy commission of the Swiss Academies
 SFOE: Swiss Federal Office of Energy
 CORE: Commission fédérale pour la recherche énergétique
 CSEM: Centre Suisse d'Electronique et de Microtechnique SA
 DACH: Cooperation between Germany (D), Austria (A) and Switzerland (CH)
 EAWAG: Eidgenössische Anstalt für Wasserversorgung, Abwasserreinigung und Gewässerschutz
 EC: Energy Center
 EMPA: Eidgenössische Materialprüfungs- und Forschungsanstalt
 ENSI: Swiss Federal Nuclear Safety Inspectorate
 ESC: Energy Science Center
 FEN: Forschungsstelle Energienetze
 FEV: Forschungsfonds der Erdöl-Vereinigung
 FOGA: Forschungs-, Entwicklungs- und Förderungsfonds der Schweizerischen Gasindustrie
 RFP: research framework program
 IPGT: International Partnership for Geothermal Technology
 JTI: Joint Technology Initiative
 SME: Small and medium enterprises
 CTI: Commission for Technology and Innovation
 NRP: National Research Program
 PSI: Paul Scherrer Institut
 REPIC: Renewable Energy and Energy Efficiency in International Cooperation
 SATW: Schweizerische Akademie der Technischen Wissenschaften
 SCCER: Swiss Competence Centers in Energy Research
 SERI: State secretariat for Education, Research and Innovation
 SET: Strategic Energy Technology
 SNSF: Swiss National Sciences Foundation
 TCP: Technology cooperation program
 UVEK: Eidgenössisches Departement für Umwelt, Verkehr, Energie und Kommunikation
 WBF: Eidgenössisches Departement für Wirtschaft, Bildung und Forschung
 WSL: Eidgenössische Forschungsanstalt für Wald, Schnee und Landschaft
 KTT: Knowledge and Technology Transfer



INTERNATIONAL COORDINATION

International Energy Agency (IEA)

22 of 38 Technology Collaboration Programs

Advanced Fuel Cells

Advanced Motor Fuels

Bioenergy

Demand Side Management

Energy Efficient End-Use Equipment

Emissions Reduction in Combustion

Energy in Buildings and Communities

Energy storage

Energy Technology Systems Analysis Programme

Gas and Oil Technologies

Geothermal Energy Research and Technology

Greenhouse Gases

Heat Pumping Technologies

High-Temperature Super Conductivity on the Electric Power Sector

Hybrid and Electric Vehicles Technologies

Hydrogen

Industrial Technologies and Systems

International Smart Grid Action Network

Photovoltaic Power Systems

Solar Heating and Cooling Systems

Solar-PACES

Wind Energy Systems

4 chairs, 2 vice-chairs

EU: European Research Area Network

ERA-Net CFA Smart Cities and Communities (3 MCHF)

ERA-Net CFA Smart Grids (4 MCHF)

ERA-Net CFA CCS (5 MCHF)

ERA-Net CFA Solar (1 MCHF)

ERA-Net CFA Geothermie (5 MCHF)

ERA-Net CFA Energy efficiency in industry and services (? MCHF)

ERA-Net CFA Renewable energy in application industry (? MCHF)

ERA-Net+ Biomass (1.5 MCHF)

ERA-Net Geothermie

ERA-Net PV

Multilateral Cooperation

MoU D-A-CH zu Smart Grids (DACH)

MoU D-A-CH zu Smart Cities (DACH)

MoU International Partnership for Geothermal Technology
(IPGT: CH, USA, AUS, ISL, NZ)

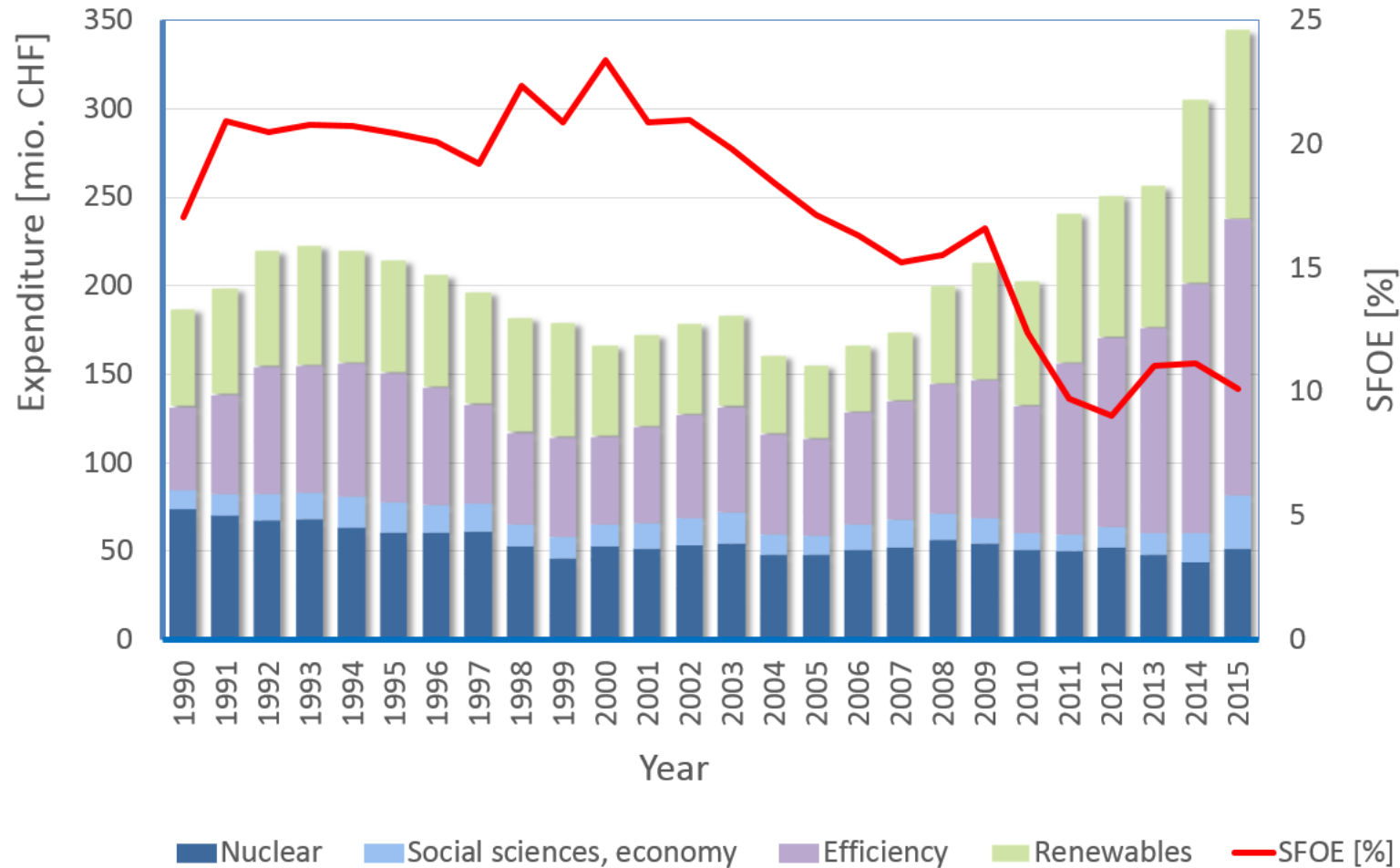


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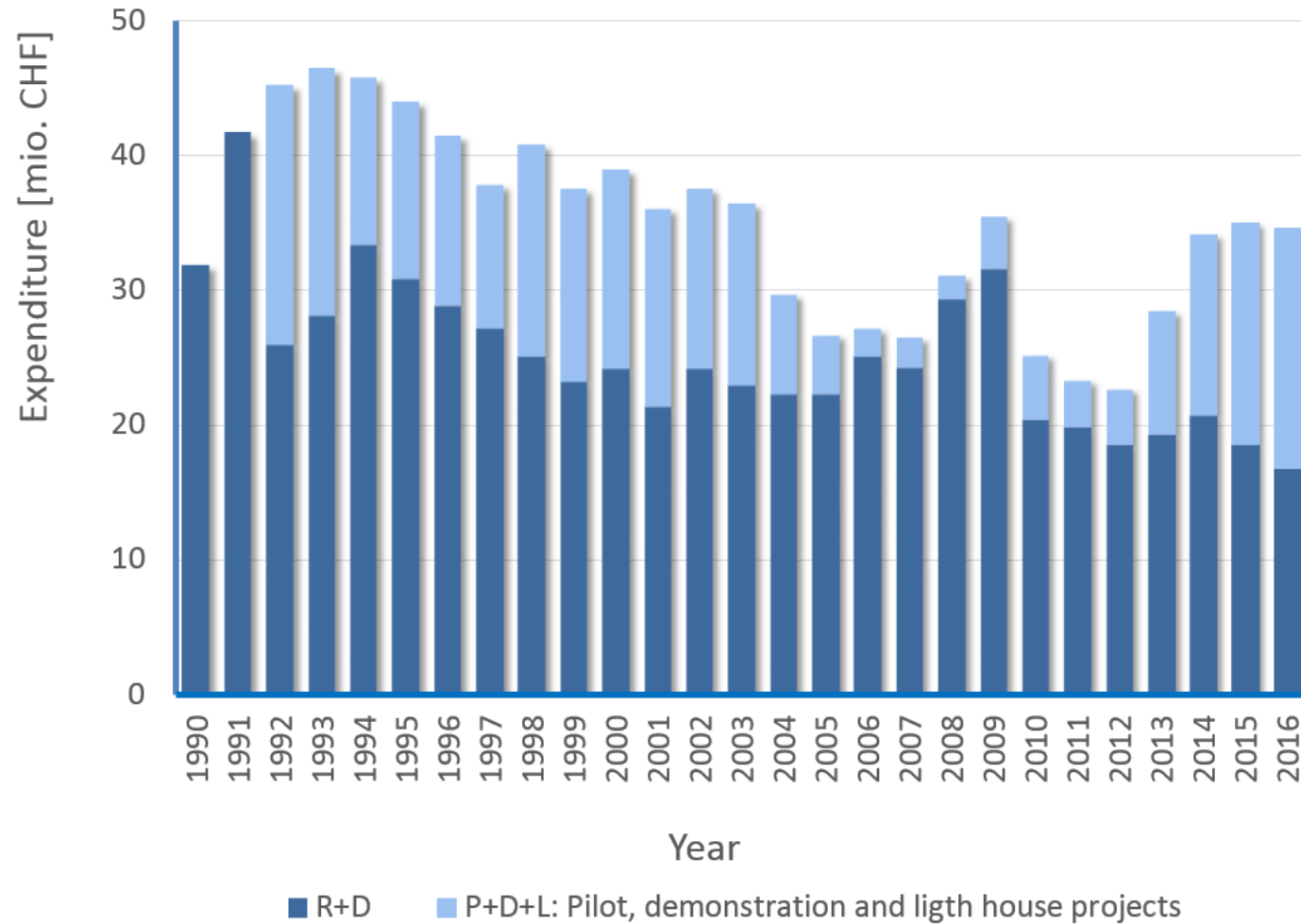


DEVELOPMENT OF PUBLIC RESEARCH PROMOTION





DEVELOPMENT OF PROMOTION OF THE SFOE

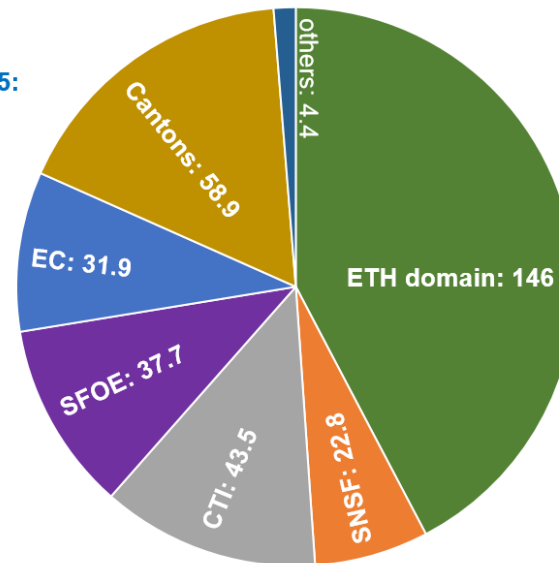




SOURCES OF PROMOTION OF THE ENERGY RESEARCH

Public expenditure for energy research 2015:
345.2 million CHF

- ETH domain (42 %)
- SNSF (7 %)
- CTI (13 %)
- SFOE (11 %)
- EC (9 %)
- Cantons (17 %)
- others (1 %)



Project evaluation by EF

Million CHF Ø per year

SFOE: F+E	18
SFOE: P+D	35
CTI:	10
SNSF	45 (2013–2018)
City of Zürich	1

International evaluation committees:
A, N, USA ...



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The SFOE web site provides information about:

- Research programmes of the SFOE
- International activities of the SFOE
- **Project promotion**
- Contact persons
- Further links

FORSCHUNGS- UND MARKTBEREICHE BFE (2016)
DOMAINES DE L'OFEN POUR LA RECHERCHE ET LE MARCHÉ (2016)

Programme Programmes	Forschung Recherche		Markt Marché
	Programmleitung Chefs de programme	Bereichsleitung Responsables de domaine	Bereichsleitung Responsables de domaine
I. Effiziente Energienutzung <i>Utilisation efficace de l'énergie</i>			
Gebäude und Städte <i>Bâtiments et villes</i>	R. Moser	A. Eckmanns	O. Meile
Mobilität <i>Mobilité</i>	M. Pulfer	M. Pulfer	S. Walter
Industrielle Prozesse <i>Processus industriels</i>	C. Alles	C. Alles	E. Bötsch
Elektrizitätstechnologien <i>Technologies électriques</i>	S. Grigori	M. Moser	M. Grigorie / M. Bleuer / R. Phillips / M. Stettler ¹⁾
Netze <i>Réseaux</i>	M. Moser	M. Moser	M. Galus / B. Le Roy
Verbrennungsbasierte Energiesysteme <i>Systèmes énergétiques basés sur la combustion</i>	S. Renz	C. Alles	L. Gutzwiller
Brennstoffzellen	S. Oberholzer	S. Oberholzer	

Check also www.aramis.ch for specific project information. ARAMIS is the official data base which comprises all projects funded by Swiss Federal Offices.

Angebote der Innovationsförderung im Energiebereich

für Schweizer Firmen und Forschungsinstitute

(Ausführlicher Bericht inklusive Kurzfassung)

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FEDERAL ENERGY RESEARCH COMMISSION (CORE)

Areas of research for the period from 2017 to 2020

This section lists a selection of areas of research that are to be focused on in the period from 2017 to 2020.

Building shell and concepts, construction processes

New technologies and concepts

- Innovative construction concepts (longer useful life of support structures in order to conserve resources, more consistent use of renewable, separable, and recyclable building materials, lightweight construction), new technologies and construction processes
- Materials with minimal grey energy consumption and grey greenhouse gas emissions; development of criteria for grey energy consumption and technical installations
- High-performance insulation components and materials for renovating buildings that meet the requirements for processing on site (fitting) and significantly reduce the amount of labour required at the construction site
- Improvement of the thermal properties of glazing and windows; “switchable” glass, glass with variable g value, etc.
- Development of criteria for improving the flexibility of use of new buildings and comprehensively renovated existing buildings, for increasing the duration of use or reducing the requirement of grey energy in future renovations or changes in the use of the building

Calculation methodology, tools

- Planning instruments for reducing energy consumption and CO₂ emissions in renovated buildings throughout their entire useful life with the best possible cost-benefit ratio; development of an evaluation method
- Integration of energy-related aspects into building information modelling systems, and research into the possibilities for using such systems to reduce energy consumption throughout the entire useful life of the building; examination of the options for using energy-relevant geographic information system data

Building services system

Use of solar energy for the production of heat and electricity

- Solar façade elements (photovoltaics, solar thermal energy) with flexible geometric design and pleasing appearance for better integration into the building or suitability for use as a design element
- Simplification of solar heating systems in order to reduce costs and increase reliability
- Optimisation of the harmonisation of the energy requirements of the building itself vs. decentralised solar energy use and decentralised storage options

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HOW TO PROCEED?

Procedure

1. Check Energy Research **Masterplan** of the **SFOE** and/or **Federal government**
Contact responsible **programme manager** with project idea
(one-pager to check chance for support before writing full proposal)
2. **Research project** («Ressortforschung», programmatic): 0–100% funding possible for universities and industry (normal case: subsidiary funding), no appeal possible
Criteria: Must fit into master plan, programme budget available

P+D+L project (bottom-up): 40% of non amortizable costs possible (pilot in lab: 40% of project costs), universities and industry, appeal possible
Criteria: Renewable energies or energy efficiency
3. Fill-in applications forms for research or P+D project

Note: **Programme managers** may also help finding other sources for funding