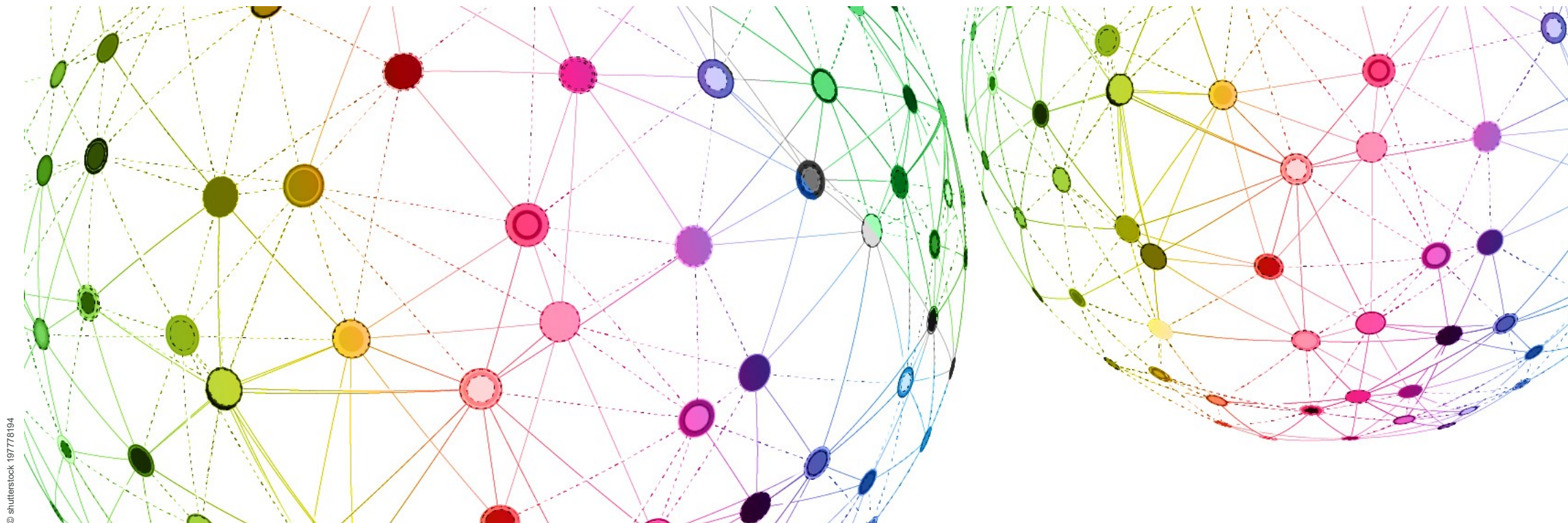




Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

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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DATA COLLECTION OF THE SWISS ENERGY RESEARCH STATISTICS



PURPOSE

«Swiss energy research statistics»

- Quantitative basis for evaluation of SFOE project funding
- Quantitative basis for Swiss (energy) (research) policy
- Quantitative basis to answer questions from parliament and the public
- Basis for IEA reporting

Publication channels:

- Tables on SFOE website
- Tables and graphs in SFOE annual publications
- IEA RD&D database



APPROACH

Basic requirements

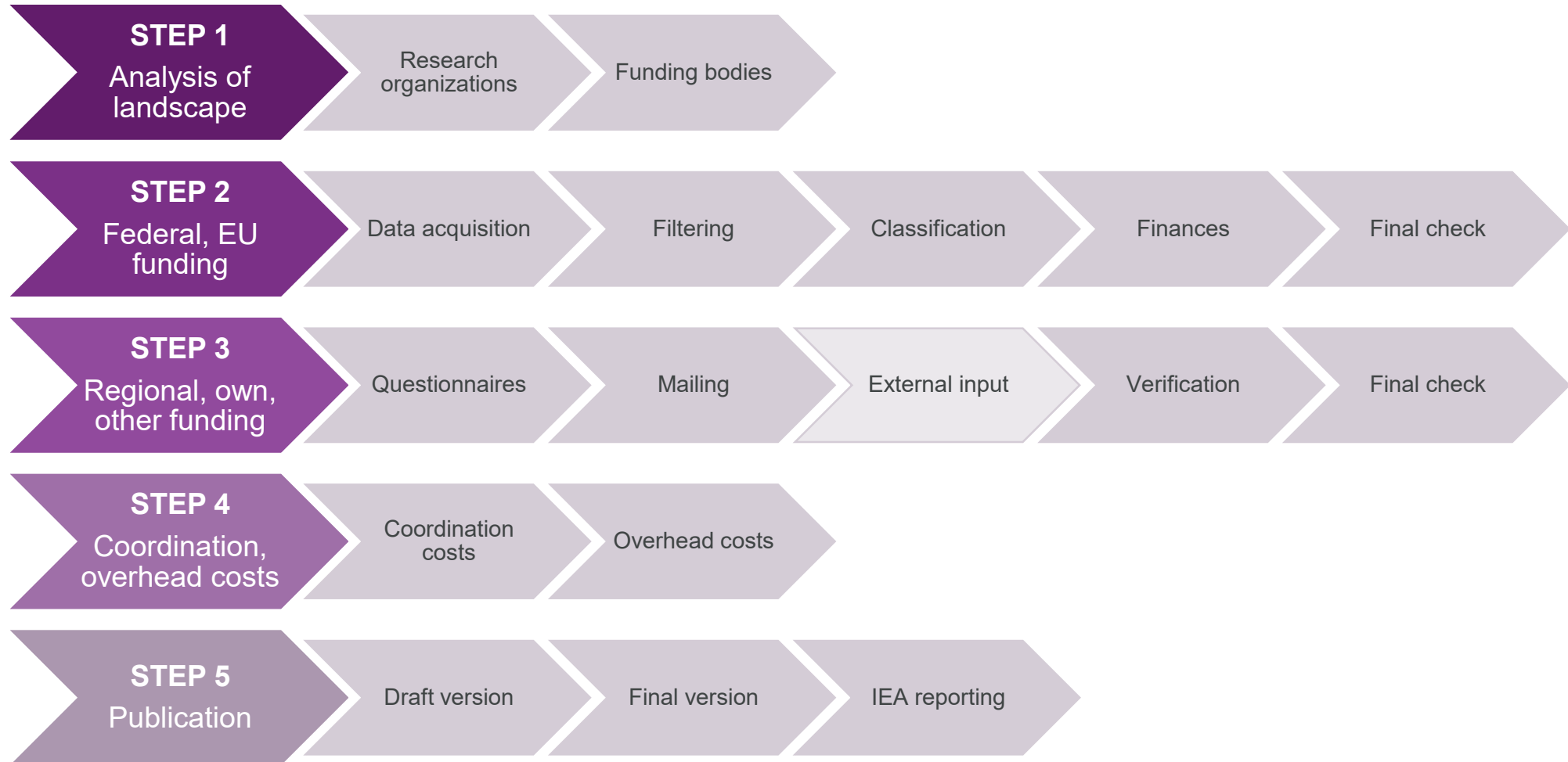
- **Complete view**, i.e., competitive and institutional funding incl. coordination and overhead costs
- **Money flow** (from-to) per topic and project type
- Publication until the **end of the subsequent year**
- Very **limited personnel resources** (~0.1 FTE) → as simple as possible

Method (since 2015)

- Basically **bottom-up** (project based) with very few top-down figures & checks
- Primarily based on **publicly available data**
- Reduction of **external dependency** to an absolute minimum
- Focus on **money** (no working hours, employment categories etc.)
- **No private** money
- **No new databases** or changes therein, but automation as far as possible



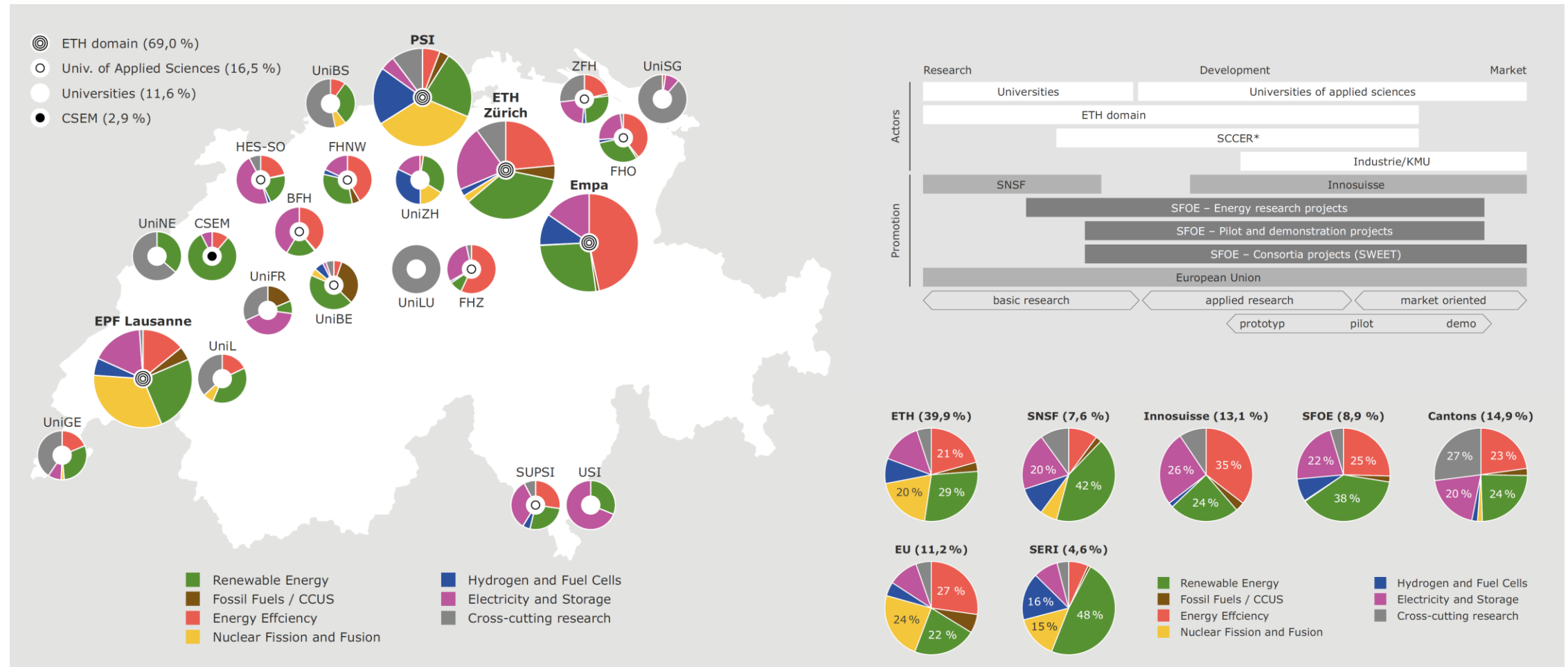
PROCESS STEPS





STEP 1

ANALYSIS OF THE RESEARCH & FUNDING LANDSCAPE





STEP 1

ANALYSIS OF THE RESEARCH & FUNDING LANDSCAPE

1. Overview on **who is active** in energy RD&D and **in which field**
 - Universities
 - Universities of Applied Sciences
 - Research centers
 - Private sector
 - Identify 1 contact person responsible for your issues
2. Overview on **who is financing** energy RD&D **and whom**
 - Institutional vs competitive
 - Bottom-up vs top-down (programmes)
 - Topics
 - TRL
 - Availability of project data incl finances (effective payments, total/annual budgets etc)
 - Identify 1 contact person responsible for your issues
 - Get access to their project database (if not yet public)



STEP 2

PUBLIC PROJECT DATABASES (FEDERAL/EU)

1. Data acquisition

- Availability check **(M)**
- Download from public databases **(A)**

(M) Manually
(S) Semi-automatically
(A) Automatically



2. Filtering

- Key words, programs, funding areas etc. **(A)**
- Verification (false positives, false negatives) **(M)**



3. Classification

- Recipient (normally equal to coordinator), type of research **(S)**
- Topics (CH and IEA classification system down to lowest level) **(M)**



4. Finances

- Priority 1: Effective annual payments **(A)**
- Priority 2: annual payments according to budget **(A)**
- Priority 3: calculated annual amounts from total budget *pro rata temporis* **(A)**
- Change currency according to official mean annual exchange rates **(A)**



5. Final check

- Transformation into Excel/CSV format **(A)**
- Final consistency check **(M)**





STEP 3

CONTACT PERSONS (REGIONAL/OWN/OTHER)

1. Questionnaires

- Q1: Projects per research organization according to step 2 (federal, EU funding) **(A)**
- Q2: Projects per research organization according to step 3 from previous year (regional, institutional/competitive own funding, other public funding) **(A)**
- Q3: Empty list **(A)**



2. Mailing

- All relevant research organizations **(M)**
- Special cases **(M)**



3. External input from contact persons at RD&D organizations

- Q1: For information only
- Q2: Completion of financial information for statistical year
- Q3: Add new and/or missing projects on Q1/Q2



4. Verification

- Check for duplicates, CH and IEA classification, project types, typos etc. **(M)**



5. Final check

- Transformation into Excel/CSV format **(A)**
- Final consistency check **(M)**





STEP 4

COORDINATION & OVERHEAD COSTS

Coordination costs

- Federal administration/agencies: annual reporting to central software tool, also basis for national R&D statistics by Federal Statistical Office **(M)**
- Swiss national science foundation: public annual report **(M)**
- Coordination costs (energy part) of agencies proportionally are distributed to all their funded projects **(A)**

MARCH-MAY



Overhead costs

- Federal research organizations: annual reporting to central software tool, also basis for national R&D statistics by Federal Statistical Office **(M)**
- Universities, Universities of Applied Sciences: annual reporting of the funding structure (institutional, federal, private etc.) per science/technology area directly to the Federal Statistical Office **(A)**
- Overhead costs (energy part) of research organizations proportionally distributed to their third party finances projects **(A)**

SEPTEMBER-NOVEMBER





STEP 5 PUBLICATION (COMPLETE AND IEA VERSIONS)

1. Draft version

- Calculation of final results (views), generation of Excel file (A)
- Plausibility check internally and by contact persons (M)

2. Final version of «Swiss Energy Research Statistics» (A)

Multiple views consisting of:

- Research organization
- Funding source
- Type of research
- CH classification system
- IEA classification system

Including EU contributions

3. Reporting towards IEA (S)

One view:

- Type of research vs IEA classification

Excluding EU contributions

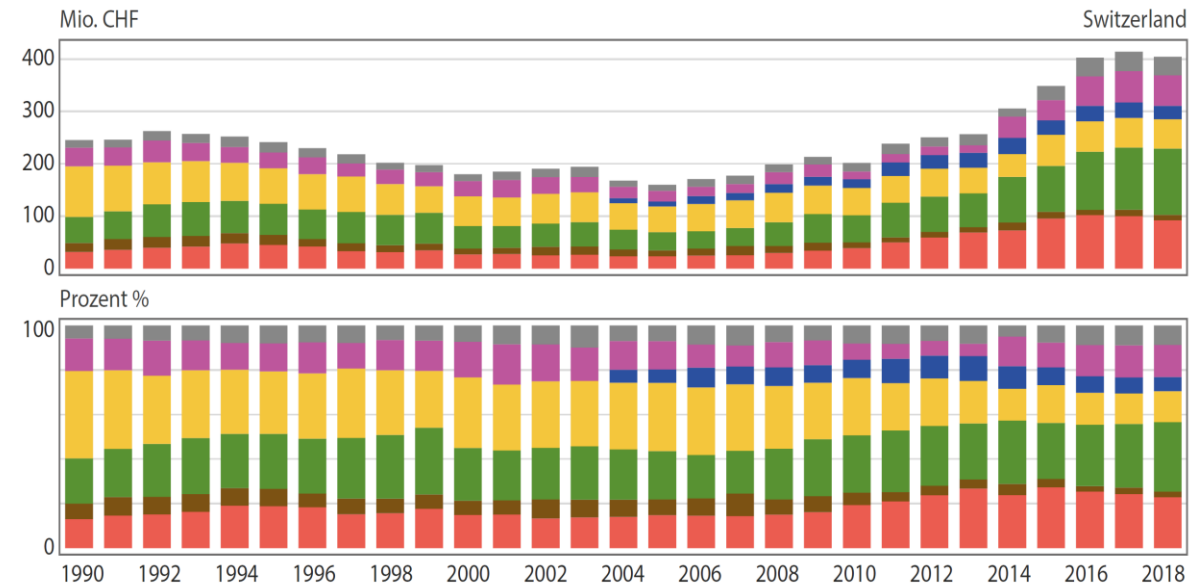


<https://www.bfe.admin.ch/bfe/en/home/research-and-cleantech/publications.html>



FACTS & FIGURES

- Federal, cantonal and EU funds **completely** covered
- 6 major **funding bodies** → 3 **databases** + few exceptions and special cases (<5%)
- 14 actively involved **research organizations**
- ~3000 **new projects** to be filtered → 10% are energy relevant
- ~600 **new projects** to be classified
- >2000 **projects/activities** included
- 427 MCHF (2019) of public funding
 - 53% from databases (step 2)
 - 21% from questionnaires (Q2/3, step 3)
 - 26% from estimates of coordination and overhead costs (step 4)





REMAINING CHALLENGES AND LIMITATIONS

- **Personnel**
 - Limited resources
 - Deep knowledge about funding structure and RD&D landscape necessary
 - Deep knowledge on (difficult!) IEA classification system (different depths, missing topics, difficult definitions, etc.) necessary
- **Process**
 - Several different databases, formats continuously change
 - 1 year to acquire and process the data
- **Interpretation**
 - Project funding (bottom-up), institutional funding (top-down), coordination
 - No information about working hours, education level, gender etc.
 - No private efforts
 - Missing information about outcomes, achievements, TRL



THANK YOU FOR YOUR ATTENTION!

Feel free to contact me for arising questions:

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