Knowledge Management

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2 aspects managed by FCH JU Knowledge Management

- Data Collection
- Programme Review Days

FCH JU Data collection on running projects

Structured capture of information on FCH technologies

For the purpose of:

- Monitoring programme progress
- Monitoring global technology progress & evaluating FCH JU positioning/contribution

Results from FCH JU projects

- **Why?**
  - To have baseline
  - To decide the way forward
    - **Gaps in knowledge**
    - **New directions based on new information**
    - **New calls for proposals.. New money…**
  - To justify to the European Commission the money spent
- **How ?**

A lot if info is available but…

- **Not reported in *centralised* manner**
- **Not reported in *consistent* manner**

And a lot of info is not reported at all !

Annual data collection

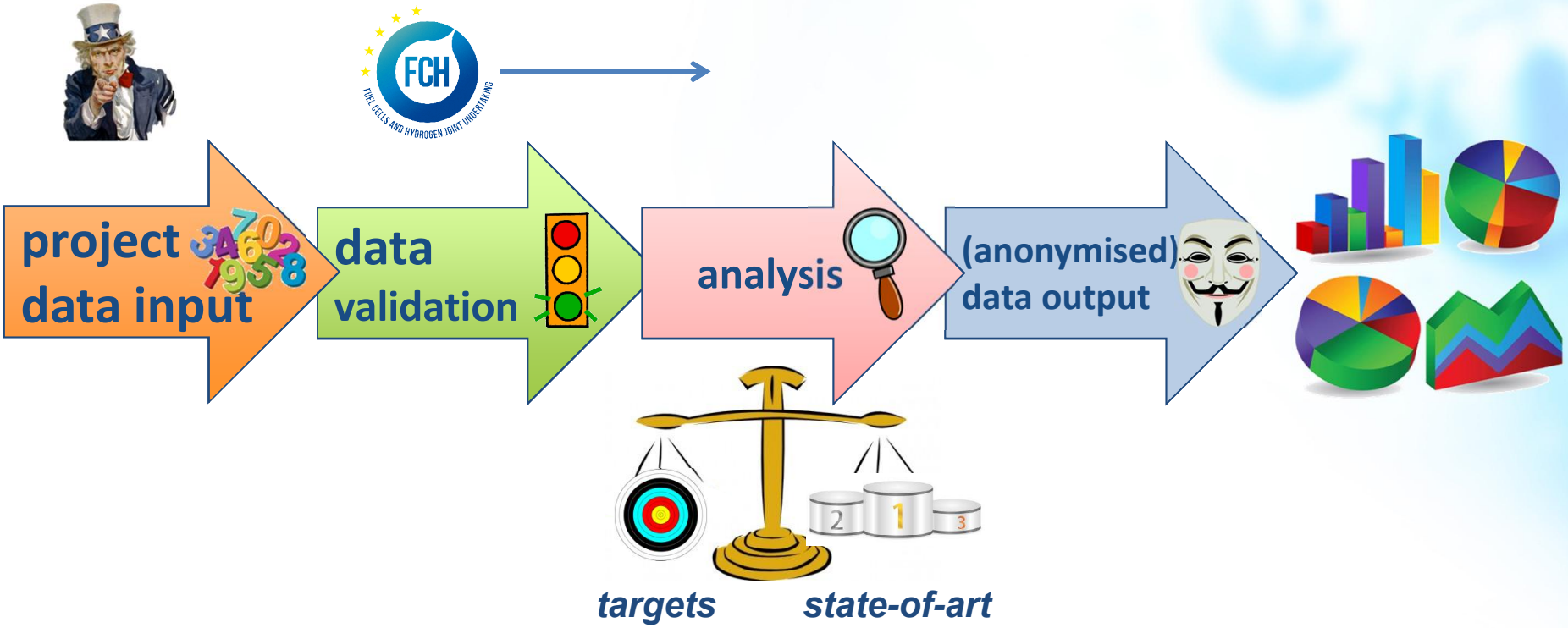
- Systematic
  - Annually
- Structured
  - To be able to compare data from different sources

Your role: provide data

Online, through web-based interface

According to template “questionnaires” relevant to your project

Data flow


project data input
data validation
analysis
(anonymised) data output
targets
state-of-art

Why would you give us data?

2) Because you have to !!

The “description of action” should include **deliverables** related to data input into the FCH Knowledge Management tools

For Call 2016 projects:
Starting in 2018

What data?

Data according to template questionnaire(s) related to the nature of the project
i.e. a set of parameters to report on

In practice:

- Each project is divided into 1 or more “Research Objects”
- Each Research Object is associated to a template questionnaire:
  = set of parameters to provide
  - Namely **Key Performance Indicators (KPIs)** from the FCH JU Multi-Annual Work Plan
- We expect to receive input for each parameter requested
  - If a parameter is not provided, a justification should be given

Input mode

Online (link and reminders will be sent)

- Each coordinator is given login credentials for the project's research object(s)
  - Access is given *by research object*
  - You can ask us to allocate someone else *instead* or *in addition* to the coordinator (several "data providers" can be assigned to a same research object)
- Upon online login, each data provider will see the research objects and questionnaires to which he/she is assigned

Confidentiality

When you enter the data, there is the possibility to mark the parameters as *public* or *confidential*

The FCH JU will never disclose any individual confidential data without prior explicit consent of the coordinator (on behalf of the consortium)

Confidential data may be aggregated with other comparable data received from other projects to produce anonymised output values from which it is not possible to work backwards to obtain the *original* (confidential) values

We look forward to your input

FCH JU Annual Programme Review

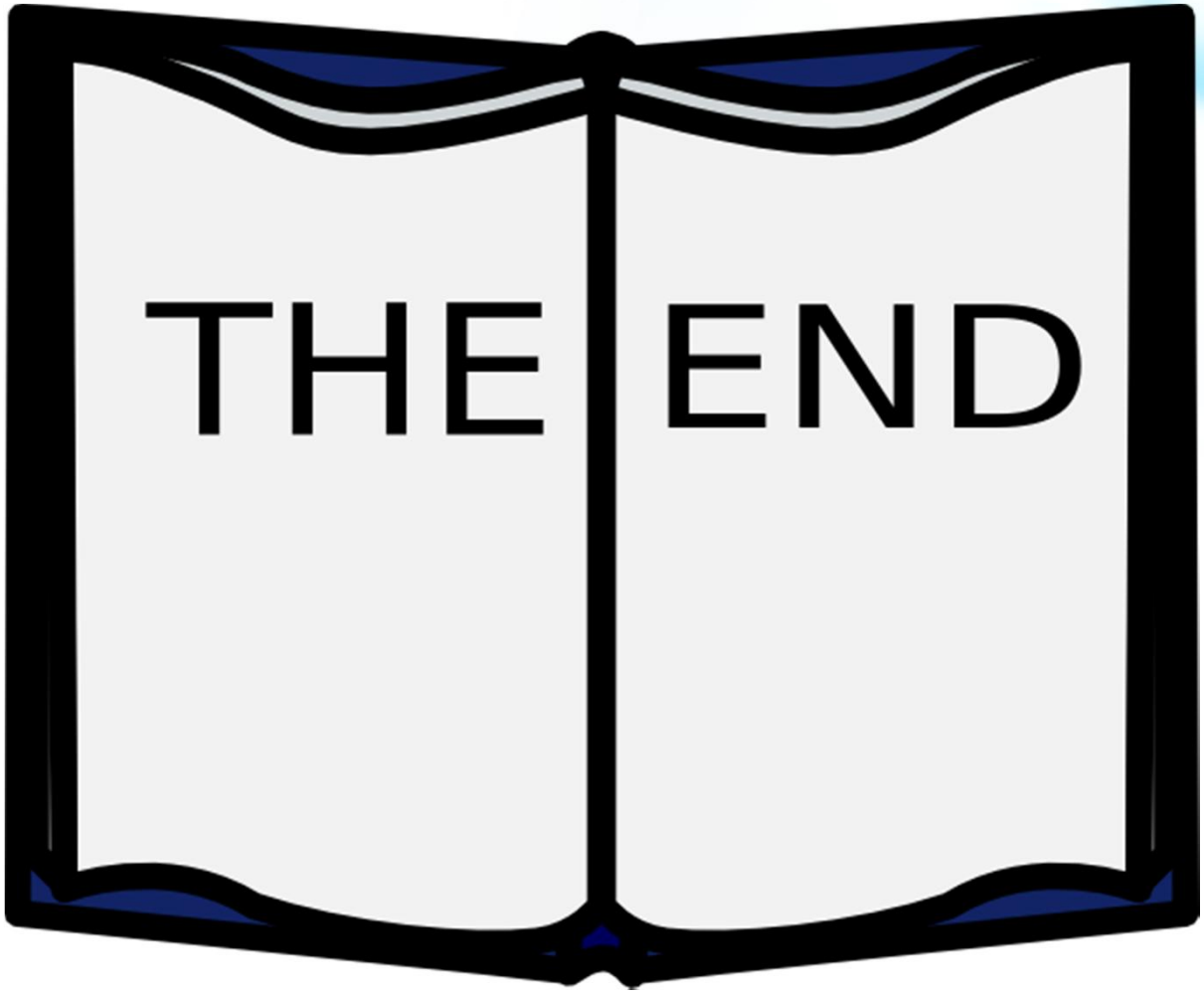
1) Review of the Programme
   - Experts review the programme basing their view on projects' "self-assessment reports"
2) FCH JU programme *event* (Programme Review *Days*) :

   Every year, typically in November
   - This year: 21-22 November, 2016, Brussels
   - Projects are asked to present a poster on progress vs programme objectives
   - Selected projects give oral presentations

Preparation: FCH JU request for input (typically in May)
- Self-assessment report
- Information for posters
- Pictures
- Project logo

2016 projects
- Active participation (self-assessemnt, poster, presentation) from 2018
- Attendance to PRDs welcomed every year ☺

http://www.fch.europa.eu/page/programme-review-days-2016


THE END

Parameter templates

DEMONSTRATION PROJECTS

- Stationary fuel cells
- Car
- Bus
- Material Handling Vehicles
- Hydrogen Refuelling Station
- Auxiliary Power Units
- Electrolysers
- H2 production (non electrolsyer)

RESEARCH PROJECTS

- Hydrogen Refuelling Station RTD
- Fuel cells at stack level (or lower)
- Fuel cells at system level
- Electrolyser at stack level (or lower)
- Electrolyser at system level
- Storage tanks

Example: electrolyser demo template (1)

Descriptive Parameters

likely to remain unchanged throughout project duration

- ✓ Country
- ✓ Town
- ✓ Postcode
- ✓ Deployment date
- ✓ Manufacturer
- ✓ Stack manufacturer
- ✓ Technology
- ✓ Nominal hydrogen weight capacity
- ✓ Nominal hydrogen volume capacity
- ✓ Nominal power
- ✓ Maximum overload capacity
- ✓ Part-load operation - minimum
- ✓ Stack capacity
- ✓ Footprint
- ✓ Volume
- ✓ Electricity origin
- ✓ Fraction of renewable energy input
- ✓ System durability (rated)
- ✓ Stack durability (rated)
- ✓ Water quality
- ✓ Hydrogen purity
- ✓ Power converter
- ✓ Input voltage
- ✓ Power useage of the auxiliry equipment - idle
- ✓ Power usage of the auxiliary equipment - max production
- ✓ Stack electrical efficiency (rated, HHV, DC current)
- ✓ System electrical efficiency (rated - HHV - AC current)
- ✓ Duration of planned maintenance
- ✓ CAPEX - electrolyser system capital cost (vs power)
- ✓ CAPEX - electrolyser system capital cost (vs production capacity)
- ✓ Estimated CAPEX - electrolyser system capital cost (vs upscaled production capacity)

Example: electrolyser demo template (2)

Operational Parameters

- ✓ Start date for reporting
- ✓ End date for reporting
- ✓ Hours of operation
- ✓ Hours of operation - cumulative
- ✓ Hours of operation
- ✓ Transient response time
- ✓ Time for hot start to nominal capacity
- ✓ Time for hot start to nominal power
- ✓ Time for cold start to nominal capacity
- ✓ Time for cold start to nominal power
- ✓ Part-load operation - minimum
- ✓ Overload operation
- ✓ Maximum % power for 98% efficiency
- ✓ Operating pressure
- ✓ Operating temperature
- ✓ Quantity of hydrogen produced
- ✓ Electricity consumed
- ✓ Availability
- ✓ Efficiency degradation
- ✓ Degradation rate in µV/h
- ✓ Degradation rate in %/kh
- ✓ Stack electrical efficiency (observed)
- ✓ System electrical efficiency (observed)
- ✓ Energy consumption for hydrogen *production*
- ✓ Energy consumption for hydrogen *compression*
- ✓ Number of safety incidents - total
- ✓ Price/cost of electricity
- ✓ OPEX - Operational and maintenance costs
- ✓ Cost of the hydrogen produced