



Knowledge Management

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What do we mean by knowledge management?



**The structured capture of information
(related to FCH technologies)**

The use of the information for:

- Monitoring programme progress (aggregated data from FCH JU projects)
- Monitoring global technology progress (including data from efforts not funded by FCH JU)

The underlying motive being the understanding of:

- Where we are
- What has been achieved
- Who is doing what
- What needs to be done next

Results from FCH JU projects

- Why?

- To have baseline of internal achievements
- 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 ?



170
projects to
review...

A lot of info is available but...

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

And a lot of info is not reported at all !

Your role: provide data



Online, through web-based interface of our Knowledge Management tool



According to template “questionnaires” relevant to your project

Data flow

You
(Project
Coordinator/
beneficiaries)

Data
input

Data
validation

Targets
From others

State of the
art

Targets from
FCH JU

Data from
other projects

Anonymised
Data output



Data Validation:

- Are the data correct/realistic?
- Are the data satisfactorily complete?



Why would you give us data?

- 1) Because you are grateful of the support received by the FCH JU



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 2015 projects:
Starting in 2017

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: set of parameters to provide
- We expect to receive input for each parameter requested

Input mode

Online, through the TEMONAS input interface

- Each coordinator is given login credentials for his/her project
- When entering the system, the coordinator (or someone on his/her behalf) will see the various research objects associated to the project
- When opening the research object, (s)he will have an editable form to enter the values

Confidentiality

- When you enter the data, there is the possibility to mark the parameters as *public* or *confidential*
- We will never publish any individual confidential data without prior explicit consent of the coordinator (on behalf of the consortium)
- We may use confidential data in aggregation (averages, summing etc. with other data)

We look forward to your input



Example: Car demonstration template (1)

Fixed/descriptive Parameters

*likely to remain unchanged throughout
project duration*

- System location - country/cluster
- System location - city
- System location - post code
- Start date of operation
- Provider/manufacturer of the vehicle
- Model - vehicle
- Type of vehicle
- Other fuel types used
- Date of construction (year)
- Drivetrain power
- Drivetrain power density
- Driving range
- Speed - Maximum
- Acceleration time for vehicle, 0-50 km/h
- Acceleration time for vehicle, 0-100 km/h
- Weight
- Height
- Length
- Width
- Capacity in number of passengers
- Storage capacity on-board a vehicle
- Pressure of the fuel tank
- State of hydrogen at storage
- Efficiency, tank-to-wheel
- Efficiency of fuel cell
- Durability of fuel cell vehicle
- Durability of fuel cell system
- Temperature - operating - Minimum
- Temperature - operating - Maximum
- Cost of vehicle
- Cost - Specific Cost of fuel cell system
- Cost - Specific Cost of fuel cell system @ mass production (estimate)
- Cost - Operational and maintenance costs
- Cost - Total cost of ownership (TCO)

Example: Car demonstration template (2)

Variable parameters *related to results within the reporting period*

- Start date of current reporting period
- End-date of current reporting period
- Number of units deployed
- Duration of operations - Total hours
- Time of operation - Cumulative
- Distance driven
- Distance driven - Cumulative
- Distance between refuellings
- Distance between failures - Mean (MDBF)
- Consumption - fuel
- Quantity of hydrogen consumed
- Weight of hydrogen per refuelling
- Quantity of hydrogen consumed - Cumulative
- Rate of refuelling (Kg/min)
- Number of fillings
- Availability of vehicle – Average
- Duration of scheduled maintenance/upgrade
- Downtime of vehicle due to stack
- Downtime of vehicle due to periphery (mechanical components)
- Downtime of vehicle due to electrical components
- Downtime of vehicle due to H2 storage
- Downtime of vehicle due to high voltage battery
- Number - Total number of safety incidents
- Number of events, type 1: Vehicle incidents involving both injury and H2 release
- Number of events, type 2: Vehicle incidents involving injuries but no H2 release
- Number of events, type 3: Vehicle incidents without any injuries but involving H2 release
- Number of events, type 4: Vehicle incidents involving neither injuries nor H2 release
- Number of events, type 5: Near misses

Parameter templates

DEMONSTRATION PROJECTS

- Fuel cells
- Car
- Bus
- Hydrogen Refuelling Station
- **Material Handling Vehicles**
- **Auxiliary Power Units**
- Electrolysers
- H₂ production from biogas
- Back-up power

RESEARCH PROJECTS

- **Hydrogen Refuelling Station RTD**
- Fuel cells at stack level (or lower)
- Fuel cells at system level
- **Diagnosis**
- Electrolyser at stack level (or lower)
- Electrolyser at system level
- **Cross-cutting activities**
 - **Pre-normative**
 - **Education**
 - **Life-cycle analysis**
 - **Portable applications**
 - **Socio-economic activities**
 - **Safety**

Existing template

Template under development