

The MESH project

**Development of a manual for reporting final
energy consumption in households by type of
end-use**

EUROSTAT – European Commission

**2016 InterEnerStat Workshop,
Session 5: Capacity building
*Paris, 13th December 2016***

Overview

- Introduction and context
- Objectives and working methods
- Main contents
- Conclusion and lessons learnt



Introduction – *what is the MESH project?*

- Production of a *Manual for Statistics on Energy Consumption in Households*
 - ✓ 2-year project successfully ended with the publication of the manual in November 2013
 - ✓ ESSnet project involving several partners
 - Statistics Austria, CBS (Netherlands), SORS (Slovenia) and DECC (UK) under the coordination of IDAE (Spain) and with the support and participation of Eurostat [*contributing partners: Germany and Poland*]
- Main deliverable: **manual** to be used by statisticians for collecting or calculating data about the consumption of energy in households by type of end-use
 - ✓ Dedicated **training** based on the manual in order to rapidly and broadly disseminate the knowledge

Context – *why was the MESH manual needed?*

- Energy stats often collected by multiple agencies / organizations and not solely by the NSI
 - ✓ Not same methods or definitions, problems of communication between administrations, difficulties to consolidate datasets, etc. – need for more **harmonization / standardization** to allow for comparisons between EU countries
- New requests for more detailed data collections
 - ✓ Bigger **constraints**: high administrative burden for respondents and administrations, need for more resources (increasing costs)
- Lack of transfer of knowledge between different Member States
 - ✓ Identify different data sources and provide help for exploiting them
 - Important to focus on and raise awareness about **methods of data collection** which might be less used but which could turn out to be highly efficient : use of administrative data and data linking, modelling, etc.
- **Need for smart solutions**



Objectives – *how can a manual help?*

- Provides useful information / guidelines on how to develop / improve the data collection on final energy consumption in the residential sector according to the legislation
 - ✓ **Gather existing experiences** from several Member States, listing **good practices** and methods used for obtaining the data, focusing on the efficiency of various processes and the reliability / quality of data while limiting the administrative burden
 - ✓ Detail the list of most used **methods of data collection** with their strengths and weaknesses, typical assumptions, examples of practical application, specific issues and errors (not to be) made
 - ✓ Investigate further **benefits** of gathering more detailed data, going beyond current needs
- The manual is a more flexible and non-binding tool to help reporting countries implement the new data collection
 - ✓ Helpful for any statistician or any statistical authority which has to implement the new data collection process

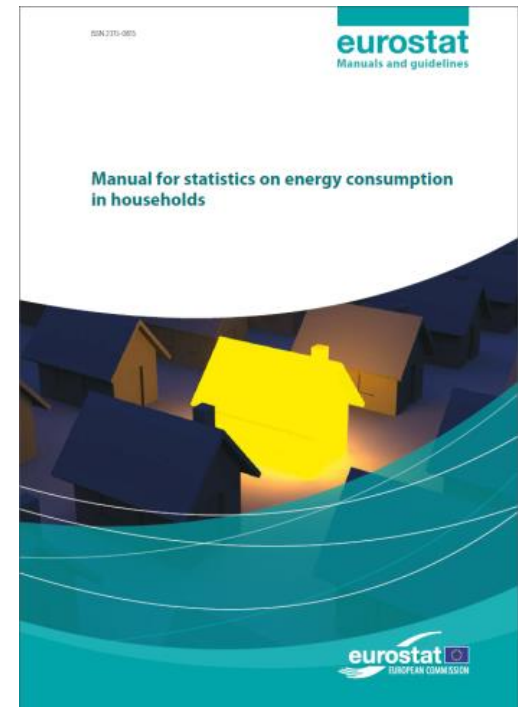


MESH manual – overview

- 7 chapters
 - ✓ *Situation*
 - ✓ *Definitions*
 - ✓ *Methods*
 - ✓ *Examples*
 - ✓ *Country case studies*
 - ✓ *Going beyond the Regulation*
 - ✓ *Other issues*

- Available on Eurostat's website

http://epp.eurostat.ec.europa.eu/portal/page/portal/product_details/publication?p_product_code=KS-GQ-13-003



MESH manual – *contents*



- Describes the situation across the EU
 - ✓ What info is available
 - ✓ How is it collected / compiled in various countries
 - ✓ What are the challenges / obstacles and remaining issues
- Further details and explains the definitions and main concepts provided in the ESR based on practical situations [in order to allow a common understanding across Member States]
- Examples of how the methods are used in specific real situations
 - ✓ In deep analysis of country cases from which are derived some best practices [*that can be used as a direct 'source of inspiration'*]
- Goes beyond the formal requests stepping from the Regulation
 - ✓ Which data is needed to better understand household energy use in each country
 - Demographic and social variables, dwelling variables, more detailed energy end-uses [*primary vs. secondary system*], energy technologies, penetration of energy efficiency technologies
- Gives a view into the future, via several elements that are complementary to the compulsory data collection foreseen by the ESR
 - ✓ Data on use of certain renewable energies, data on fuel poverty

MESH manual – *focus on techniques*

- Most commonly used methods of data collection
 - ✓ *Household and Business (supplier) surveys, Administrative data, In situ measurements, Modelling*
 - ✓ Examples to provide inspiration and learning
 - Explanations and guidelines for each method [*how to use / improve it*]
 - Strengths and weaknesses [*What data a method can provide and where is it insufficient*]
 - Specificities [*legal aspects, burden, cost,...*]
 - ✓ Interaction and links between approaches
 - ✓ Summary of the key data collected and time lags, etc.
 - ✓ How to deal with common difficulties [*issues arising with collecting the data – e.g. poor response, conflicting data, etc.*]
 - ✓ How is the data used to monitor and develop policy



Good practices – *optimize use of data*

- **Maximize** the use of available data
 - ✓ Show households in wider context, view in different ways, wider admin data and data matching
 - ✓ Link to *Renewables Energy Directive*, to *Fuel Poverty*
 - ✓ Wider needs and benefits from analysis
 - ✓ Households as consumers of energy: understanding their use, behaviours, real costs involved
- Look into the **future**: how to expand data collection to satisfy broader user needs and potential needs
 - ✓ Explore ways to develop a more detailed understanding of household energy consumption: establishing definitions in 2 or 3 levels, in order to obtain further details (socio demographic variables, energy technologies and energy efficiency variables) - Not part of changes in Regulation but important to consider all issues of households
- Recognize benefits in **comparability** of data across countries if common definitions and breakdowns of variables can be used

MESH – *some good practices and examples!*

Data Collection Method	Good Practice
Business surveys	<ul style="list-style-type: none"> • Compilation of electricity data through use of surveys of suppliers (UK)
Households surveys	<ul style="list-style-type: none"> • Face to face Survey in the frame of the SECH-SPAHOUSECH project (Spain) • Mail survey: Electricity and natural gas consumption of households by purpose (Austria) • CATI/CAPI survey: Energy consumption of households (Slovenia) • Panel survey: Energy consumption of private households (Germany)
Use of administrative data	<ul style="list-style-type: none"> • Client registers of energy companies in the Netherlands • Administrative data of energy companies data: experience from other countries (United Kingdom, Spain) • Use of management information data from policies (United Kingdom)
Modelling	<ul style="list-style-type: none"> • The Cambridge Housing Model (UK) • Model based data validation procedure (Austria) • Model based estimation of energy consumption in second residences (Austria)
<i>In situ</i> measurements	<ul style="list-style-type: none"> • End Use Metering in 400 Households (Sweden) • Measurements of Electricity Consumption in the Household Sector (Spain) • Household Electricity Consumption by Purposes (Austria) • Best Practices' on <i>in situ</i> Thermal Measurements (UK) • Experiences with the collection of household temperatures • Experiences with <i>in situ</i> U-value measurements

MESH – *training*

- Training session – Madrid (Spain), 2-4 December 2013
 - ✓ Organised by the MESH Team as a way to better and broader **disseminate the lessons learnt and the information gathered** in the MESH project
 - ✓ Opportunity for around 40 statisticians from 20 Member States and candidate countries to **get familiar with the definitions and concepts** developed in the manual
 - ✓ Based on **practical exercises** allowing participants to familiarize themselves with the methods of data collection and modelling, and possibility to **share and discuss different approaches**
 - ✓ Increased awareness of the **challenges and needs** for implementing the new data collection and **accelerated the preparedness** of many reporting countries



Working methods – *development process*



➤ How was the MESH developed

- ✓ **Involvement** of all stakeholders from the beginning of the project and throughout its development
 - Initiated with a *Task Force* that set out recommendations on the basic information needs
 - Work done in parallel on the amendment of the ESR and on the production of the manual
 - SECH project: grants for household sector statistical studies (pilot / test surveys) in 17 MS
- ✓ Analysis of the initial situation and search for **existing practices**
 - Identifying the situation and the **users' needs**
 - Preparing a global **inventory of practices** for the statistics in the residential sector, at EU level and wider
- ✓ Draft a manual providing greater insight into the energy use in the residential sector, the different statistical techniques applied, the good practices and methodologies used and the of options to use according to the users' starting-off situation
 - Complement the manual (theory) with a training session for all the users
- ✓ Broad **dissemination** of the information, manual and good practices identified

MESH project – *conclusion and useful observations*

- Gather existing expertise
 - ✓ **Knowledge exists** but it is spread across countries and organizations
- Multiply the data sources and methods and adapt them to the national context
 - ✓ Essential to **combine methods** [*no perfect solution but mix of complementary tools*]
- **Develop** dedicated statistical tools especially for data mining and data linking
- Establish **common boundaries** for the data collection [*household sector, energy products concerned*], **standardize** as much as possible
 - ✓ **Define** major concepts [*energy end-uses*], but also other related variables which can be relevant for the data collection process, as well as all basic terms used in the manual / procedures
- Transfer and **share the knowledge** and experiences between all stakeholders [*learn from other's experiences*]
 - ✓ **Help** reporting countries to incorporate technical solutions already validated [*practical implementation, training, not only theory*]





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The MESH team – *around 100 years of knowledge of energy!*



Thank you for your attention!

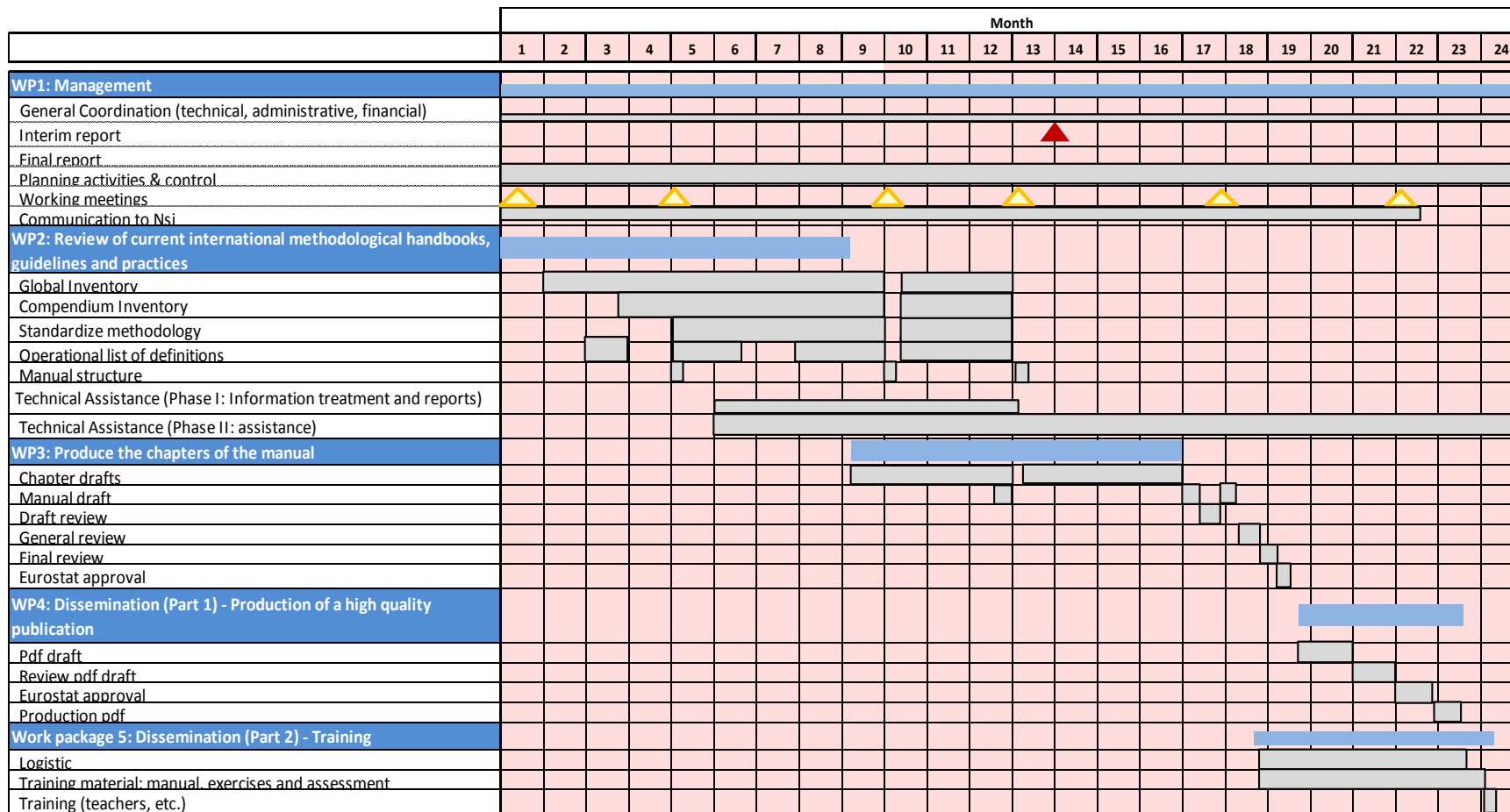
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Timetable



Notes:



Tasks



Word package



Working meetings and milestones



Reports

Each case study covers

- **Why**: drivers nationally and internationally that have raised the importance of household energy consumption and related data, it include drivers to monitor the implications of policy
- **How**: summary of processes/methods developed to gather these data, including interaction and links between approaches
- **What**: summary of the key data collected and time lags, etc.
- **Issues**: what issues arose with collecting the data – e.g. poor response, conflicting data, etc. and how these were overcome. Brief overview on quality and accuracy
- **Use**: how have the data been used to monitor and develop policy
- **Coverage**: assessment of coverage against the key data needs highlighted by the Task Force 2008
- **Future plans**: that is expected to develop in the future