

G20 Energy end use data and energy efficiency metrics initiative

the role of new technologies / digitalization for end use data collection

Paris, 22nd november



ceren

Centre d'études et
de recherches économiques
sur l'énergie



Economic interest grouping of energy actors



Partners

Ministry for the Ecological
and Inclusive Transition



and



Institut national de la statistique
et des études économiques

Mesurer pour comprendre



Ceren studies french energy consumption for 60 years

60 years of energy consumption surveys

4 million euros turnover
25 employees
50 engineer interviewers (industry)

Studies for members, ministry, other clients

Panel annual surveys in France

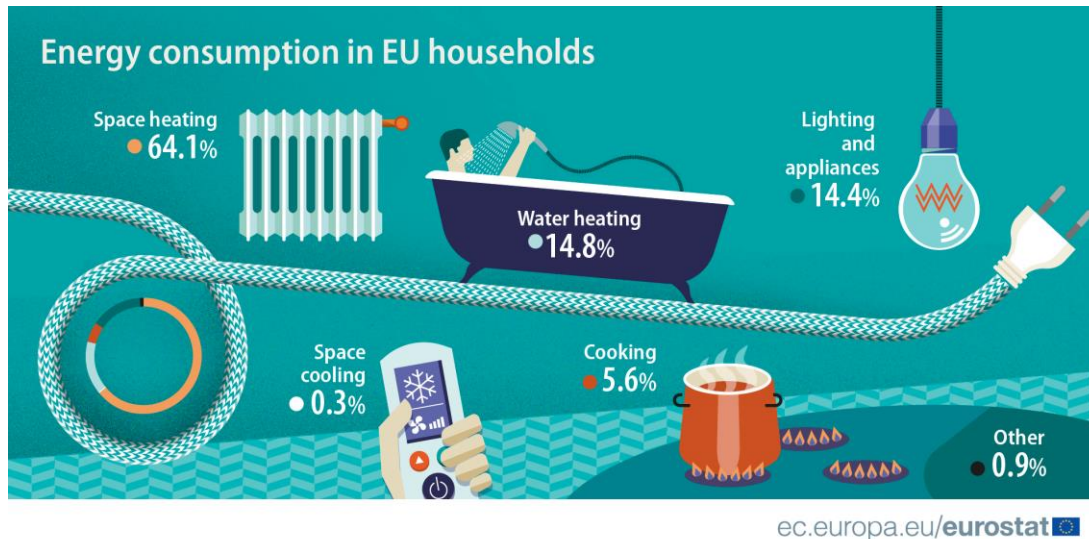
2000 households
800 biggest industry sector
25 000 tertiary sector

Specific surveys for specific subject and sectors

Residential sector

2018

- 100% face to face survey with GFK interviewers (CAPI) for 2000 households
- Twice a year paper questionnaire for monthly consumption of electricity, gaz, fuel
- + Use of official statistics household survey, buildings statistics....
- + Ceren 's econometric model...



Statistics at national level 30 october 2019
Used for European regulation, Odyssee
Open data access

Digital use for french households

89% internet access from 16 to 74 years

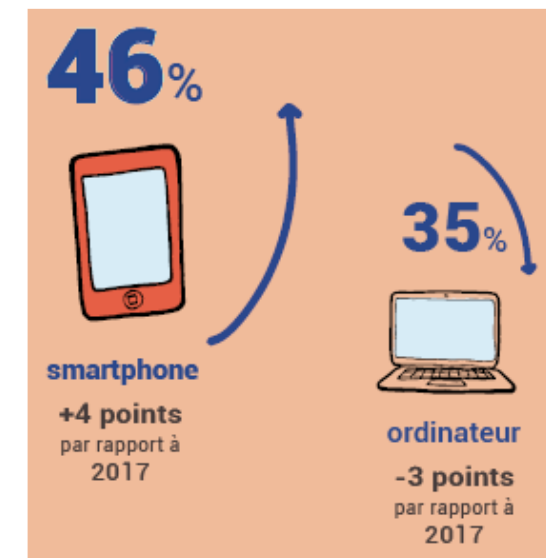
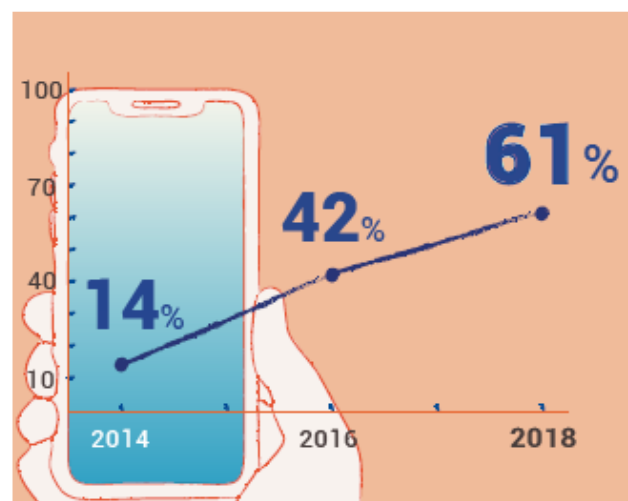
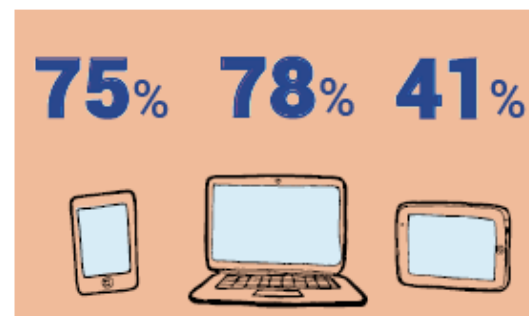
75% daily use of internet

60% response rate for census 2019

online questionnaire

But 17% digital illiteracy

Mixed mode survey to avoid bias



Credoc, Arcep, CGE,
mission numérique

Residential sector

2018

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- Twice a year paper questionnaire for monthly consumption
- Use of official statistic household survey, buildings statistics....

GFK closed its face to face interviews activity

2020

- Panelist recruitment is 100% face to face with ISPOS interviewers to obtain consent, and ask for survey mode (CAPI)
- On line annual questionnaire (CAWI) for 44% households and face to face (CAPI) for other
- Monthly on line (CAWI) consumption questionnaire for about 44% household, reminder by SMS, email, call

Residential sector

2021

If possible infra annual consumption through smart grid gaz and electricity measure with household consent (General Data Protection Regulation compliant)

Juridic and Communication challenge ! cybersecurity is already achieved for surveys's data

2021 or 2022

If possible, get additionnal information (energy quality of the building, income.....) change sampling method using a sampling frame instead of quotas sampling, using tax file sampling frame of the french statistical office

Budget challenge !

Residential sector

Future plans

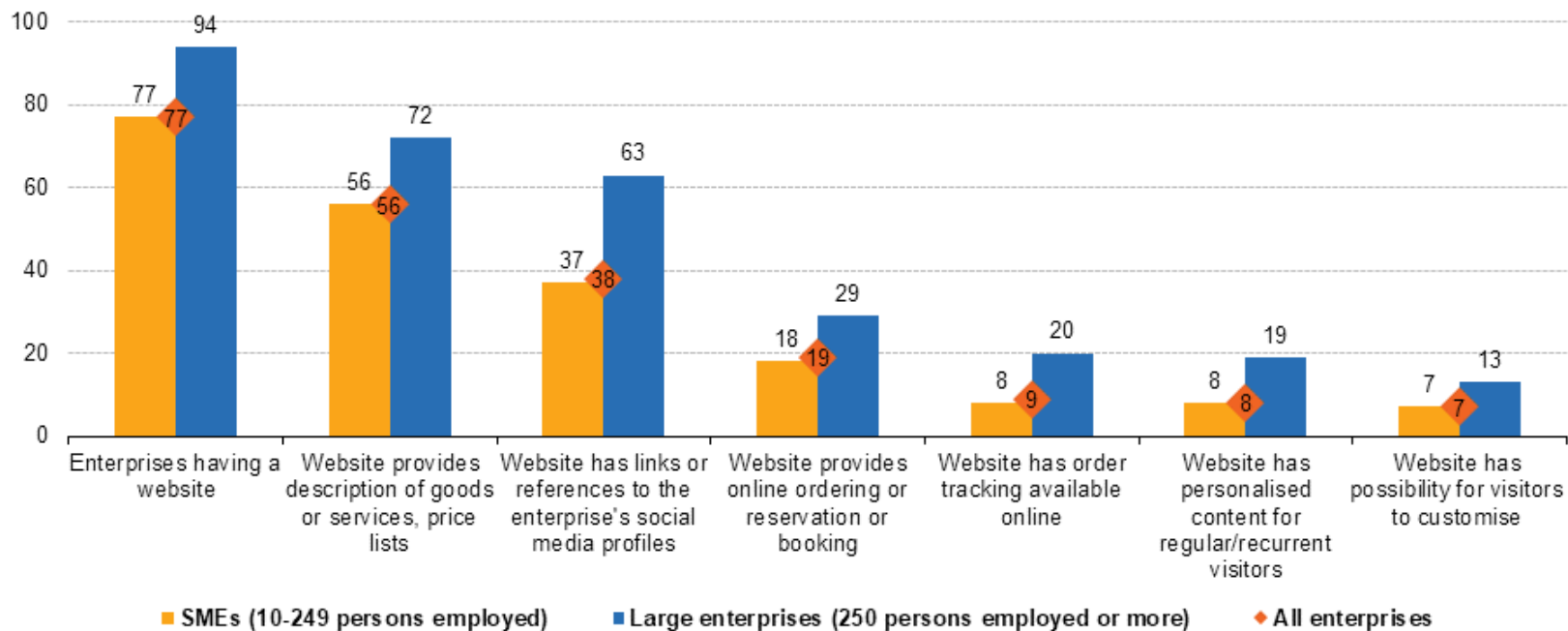
Use of smart grids statistics for estimation calibration

Specific measures Instrumentation to get better end use electricity consumption quality

Budget challenge !

Digital use for establishment surveys

Enterprises having a website, by functionality and size class, EU-28, 2018 (% of enterprises)



Source: Eurostat (online data code: isoc_ciweb)

eurostat 

Datacollection for tertiary establishment

2020

On line questionnaire for 25 000 establishments design by Ceren and Solirem

Presentation letter with access code by mail, supported by the French minister

Partially reminder letter by email

Questions by email and telephone for small companies

New Responsive design website to announce surveys and add forthcoming explanations to help respondent's preparation,

Communication, ergonomics, Cybersecurity and consent concerns

Future challenges : mandatory survey , Smart meters, merge with regulation data (OPERAT)?

Specific surveys digitalization of datacollection since 2017

On line questionnaire designed with limesurvey for establishment, official letter with the access code, and reminder letter

Website communication to announce surveys and add explanations to prepare

Use of big data

Big data = new source

new IT techniques

use of new statistical analysis techniques (machine learning, IA)

Smart grids is a new source for energy consumption that need's new IT or not depending on the aregation level of use :

- Agregate level calibrate consumption estimation
- individual level : substitute questionnaire and help studies on specific sectors on a monthly basis
- Individual level : construct load curve statistics

Using energy sensors is future plans for industry with partners

Thank you for your attention

francoise.dupont@ceren.fr

managing director

Ceren

35 rue bienfaisance

75008 Paris



bibliography

2019 Conference of european statisticians, Workshop on Statistical Data Collection : New 'Sources and New Technologies, 14-16 October 2019, Geneva, Switzerland

2019 Eurostat statistics on household and enterprises digital uses

2019 L'économie et la société à l'ère du numérique, Insee référence 2019

2014 Dillman, Internet phone mail and mixed mode surveys : the tailored design method, Wiley

2019 CNER bilan de la collecte du recensement 2019

2018 enquête sur l'illectronisme CSA

2018 baromètre du numérique Credoc, DGE ARCEP <https://www.arcep.fr/actualites/les-communiques-de-presse/detail/n/barometre-du-numerique-publication-de-ledition-2018.html>