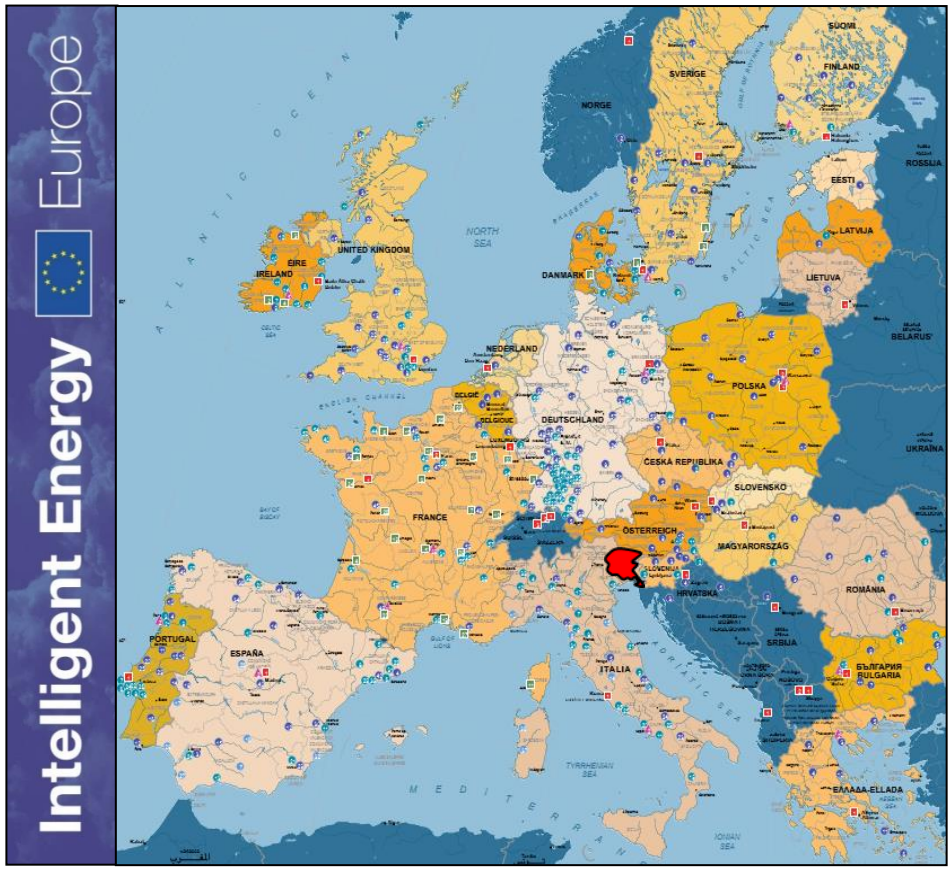
PPL session on Energy Monitoring Systems
Online | 04 March 2021

Regional energy observatory set up: from actual needs to a potential business model

PROSPECT2030 | APE FVG | Matteo Mazzolini

Profile and activities of APE FVG



Established in 2006 by local public bodies.
Today, 74 members, mainly Municipalities

Non profit Organization, legally recognized, Public Equivalent Body

Permanent staff of 20 people with scientific and technical background

Works to promote energy efficiency and use of renewable energy sources

Provides independent advice to public and private subjects developing sustainable energy investment initiatives

Develops sustainable energy and climate action plans and manages the regional energy cadastre

Trains local professionals in highly specialized fields of activity related with energy (post graduate training and vocational training)

Autonomous Region of Friuli Venezia Giulia

Aims to be climate neutral by 2045

Local and renewable energy sources:
- Hydropower by far and large
- Solar power
- Biomass power (wood & biogas)

Promising energy vector for energy transition:
- Blue & green Hydrogen

S3 with a strong focus on energy:
- Sustainable buildings
- Bioenergy
- Energy efficiency in industry
- Sustainable mobility (mainly harbours and ships)
- Smart grids

Strategic planning:
- Regional Strategy on Sustainable Development
- Smart Specialisation Strategy with a focus on energy
- Climate adaptation strategy in progress
- Climate mitigation strategy to be revised

What is an energy observatory?

An energy observatory is a structure that provides periodic and coherent energy data to be used & shared at local, regional, macro-regional and international level.

Access to reliable energy data is the basis for decision-makers to formulate, implement and verify the coherence of energy policies and measures. Public authorities engaged in sustainable energy planning, require access to territorial, aggregated and accurate energy data.

As well, energy data is needed at macro-regional level to support wider areas in defining, implementing and monitoring long-term energy strategies, e.g. that one for the Alpine territory or the Adriatic area…

Main target users and main benefits

Target users	Who	Benefits
Regional & International Strategy decision makers	Representatives of MS and Regions, EC DG Regio/DG Energy, International and inter-regional organizations, macro regional strategies	Set policy objectives, monitor and evaluate their integration process
Regional Decision Makers	Regional public authorities (elected representatives and technical staff)	Exchange of expertise and common benchmarking to evaluate policy objectives and monitor strategies. They may support to set up/develop regional data centres
Local decision makers	Local public authorities (elected representatives and technical staff)	Unclear. Possibility to refer to benchmark data
R&D and academic actors	Experts in energy planning	Energy modelling
Environmental networks	Regional and local NGOs	Be able to address issues such as conflict management in the use of natural resources

Main target users and main benefits

Target users	Who	Benefits
Energy companies	TSOs, DSOs, .. Energy regulators	Sharing of knowledge about regulatory frameworks for TSOs and DSOs (open data)
Regional support organizations	Regional Energy Agencies	Improvement of methodologies for energy data collection and data processing in regions, states and European Union

Other target users?

The 3 main target users?

Strategic objectives of the observatory

- ✓ Support energy strategies and objectives at regional and inter-regional level. Monitor progress. Providing periodic and accurate energy data and benchmarking information based on bottom up and top down data sharing methodologies
- ✓ Disseminate energy data to public authorities and general public: through for instance an online platform and webmapping, respecting the INSPIRE directive
- ✓ Develop win-win scenario with key data providers: get inspired from EU projects and platforms about data sharing: SetAlps, DATA4ACTION,… Observation Network for Territorial Development and Cohesion (ESPON)

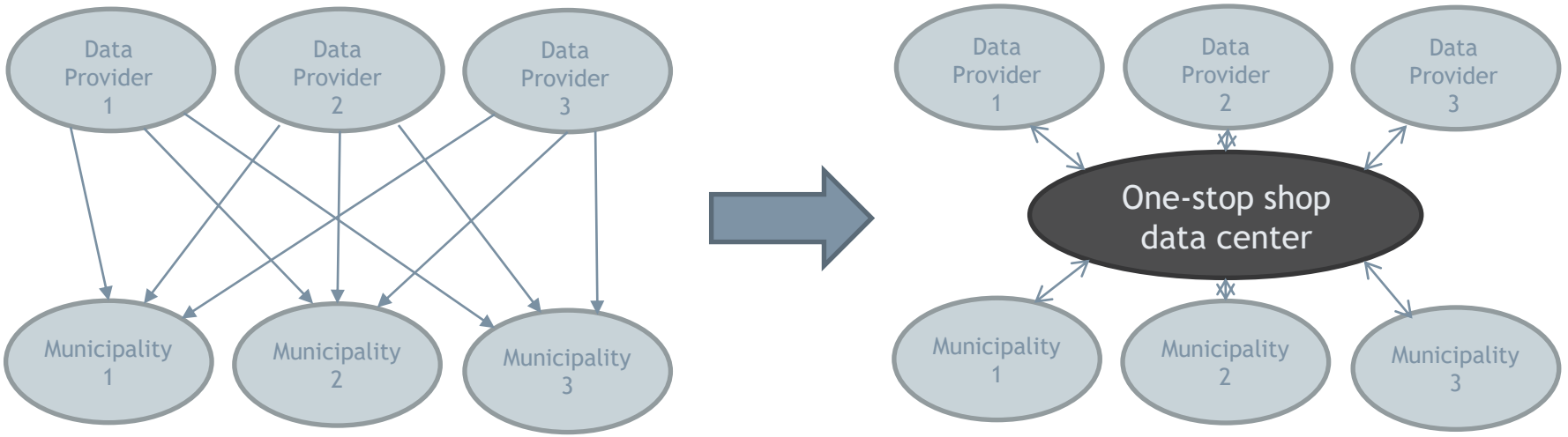
Harmonized data sharing processes and tools

- What are the data sharing processes and tools that should be prioritized for discussions among experts?
- What are the main processes and tools for the 3 main phases of data sharing:
  1. data access (data exchange, data format,..)
  2. data management (processing, modeling, quality check,..)
  3. data dissemination?
- Would a common glossary be useful?

Energy data flow

Data exchange and repository

Win-win collaboration models



Energy data monitoring

Since when monitoring?

New monitoring systems should be consistent with EU reporting and Paris agreement

Most relevant data for a region?

- Final energy demand, share of renewables
- Monitoring of specific targets of the regional energy strategies

Who provides the energy data?

- National and regional statistics
- Environment agencies (responsible for compiling regional GHG inventory for submission to the UNFCCC and the EU)
- Energy utilities & companies

Method used to collect and process the energy data:

Mandatory reportings (e.g. electricity, mineral oil), household surveys, etc., model calculations to calculate the shares of different sectors of activity

Energy data monitoring

Which tools should be used to monitor regional energy plans:

- PDF-reports
- Excel sheets
- Web platforms w/o GIS
- Web platforms with GIS support

Should the observatory provide local authorities (& others) with local energy data?

- Municipalities require data for SECAPs
- Central support for municipalites (GIS) is generally appreciated
- Energy cadastres or energy book-keeping tools

Tools

Type 1: reading

Use: Dissemination

Type 2: reading and downloading

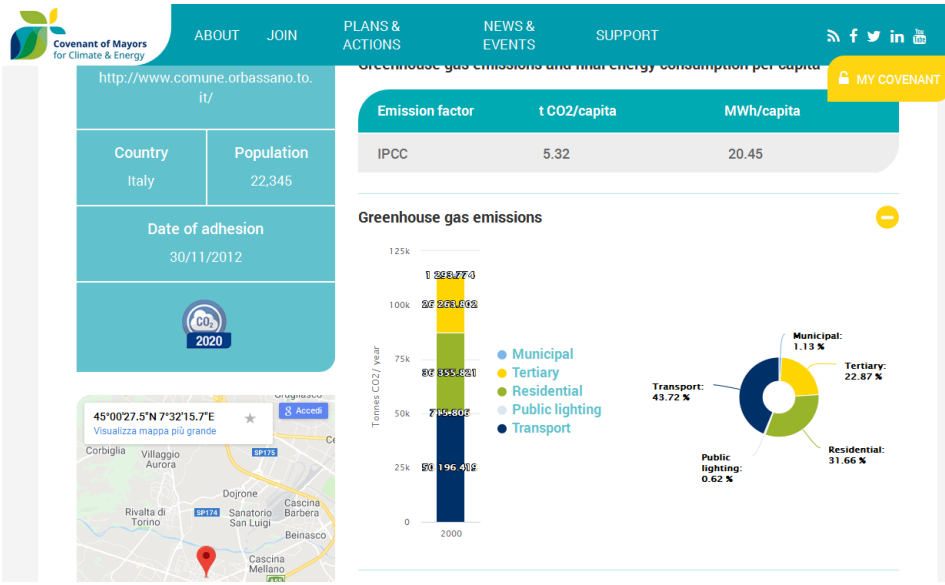
Use: Dissemination/Planning

Type 3: interactive

Use: Dissemination/Trigger investments

Type 4: (……) + sharing

Use: Dissemination/Planning/Management



Tools

Type 1: reading

Use: Dissemination

Type 2: reading and downloading

Use: Dissemination/Planning

Type 3: interactive

Use: Dissemination/Trigger investments

Type 4: (……) + sharing

Use: Dissemination/Planning/Management

Tools

Type 1: reading

Use: Dissemination

Type 2: reading and downloading

Use: Dissemination/Planning

Type 3: interactive

Use: Dissemination/Trigger investments

Type 4: (……) + sharing

Use: Dissemination/Planning/Management

Tools

Type 1: reading

Use: Dissemination

Type 2: reading and downloading

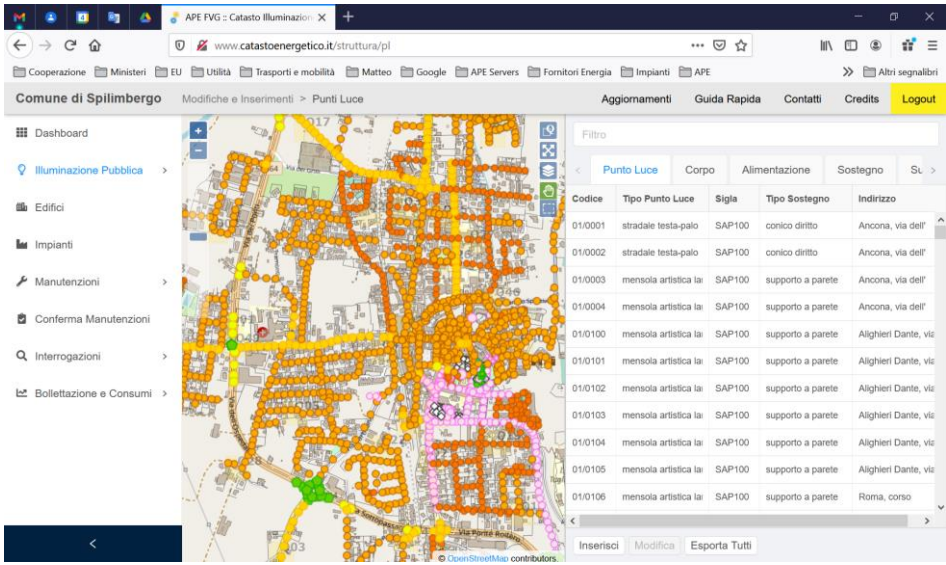
Use: Dissemination/Planning

Type 3: interactive

Use: Dissemination/Trigger investments

Type 4: (……) + sharing

Use: Dissemination/Planning/Management



Tools

Type 1: reading

Use: Dissemination

Type 2: reading and downloading

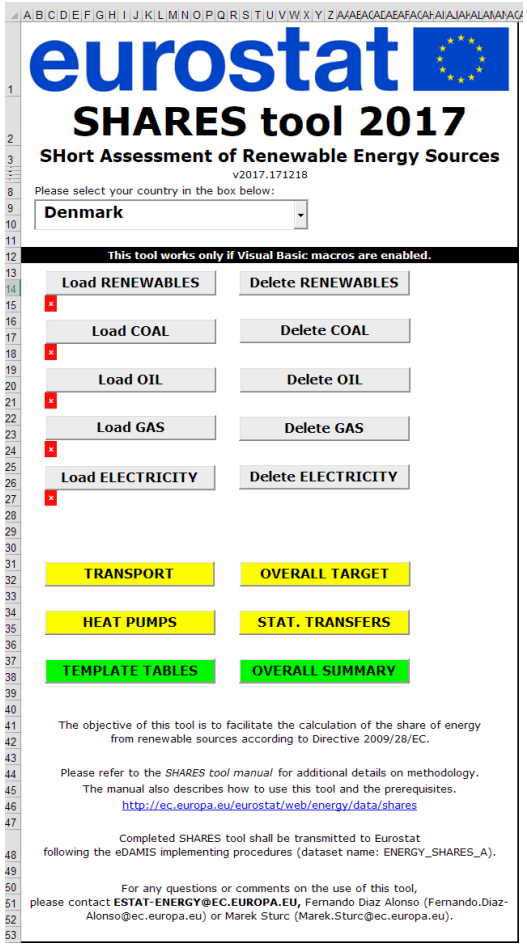
Use: Dissemination/Planning

Type 3: interactive

Use: Dissemination/Trigger investments

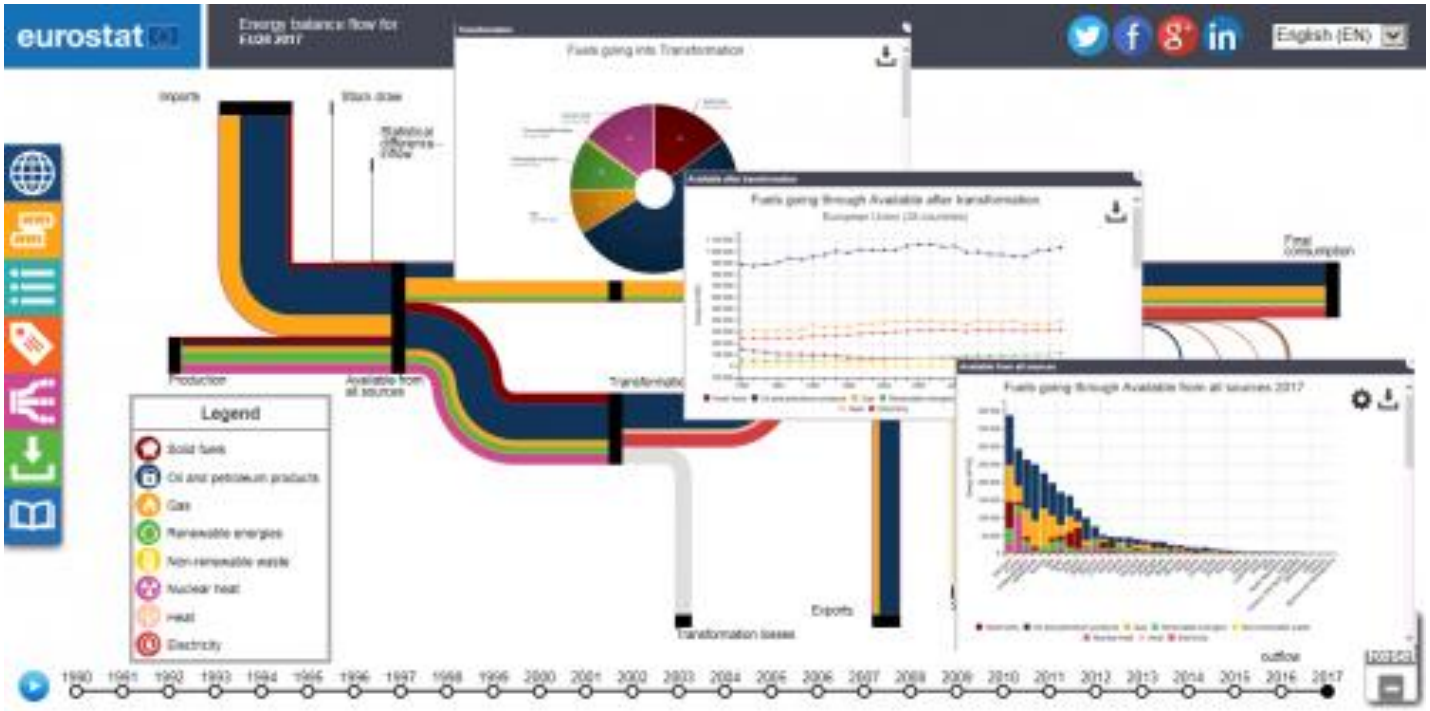
Type 4: (……) + sharing

Use: Dissemination/Planning/Management



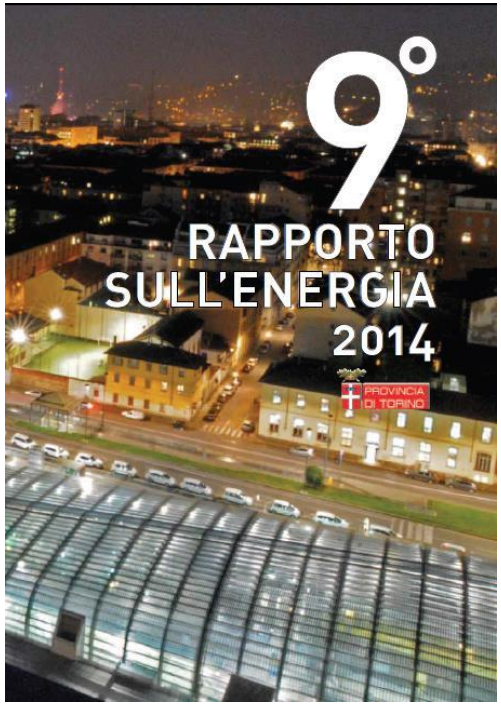
Energy data dissemination

Happy to work together, but common basis needs to be EUROSTAT because we need to further harmonise energy indicators



Energy data dissemination

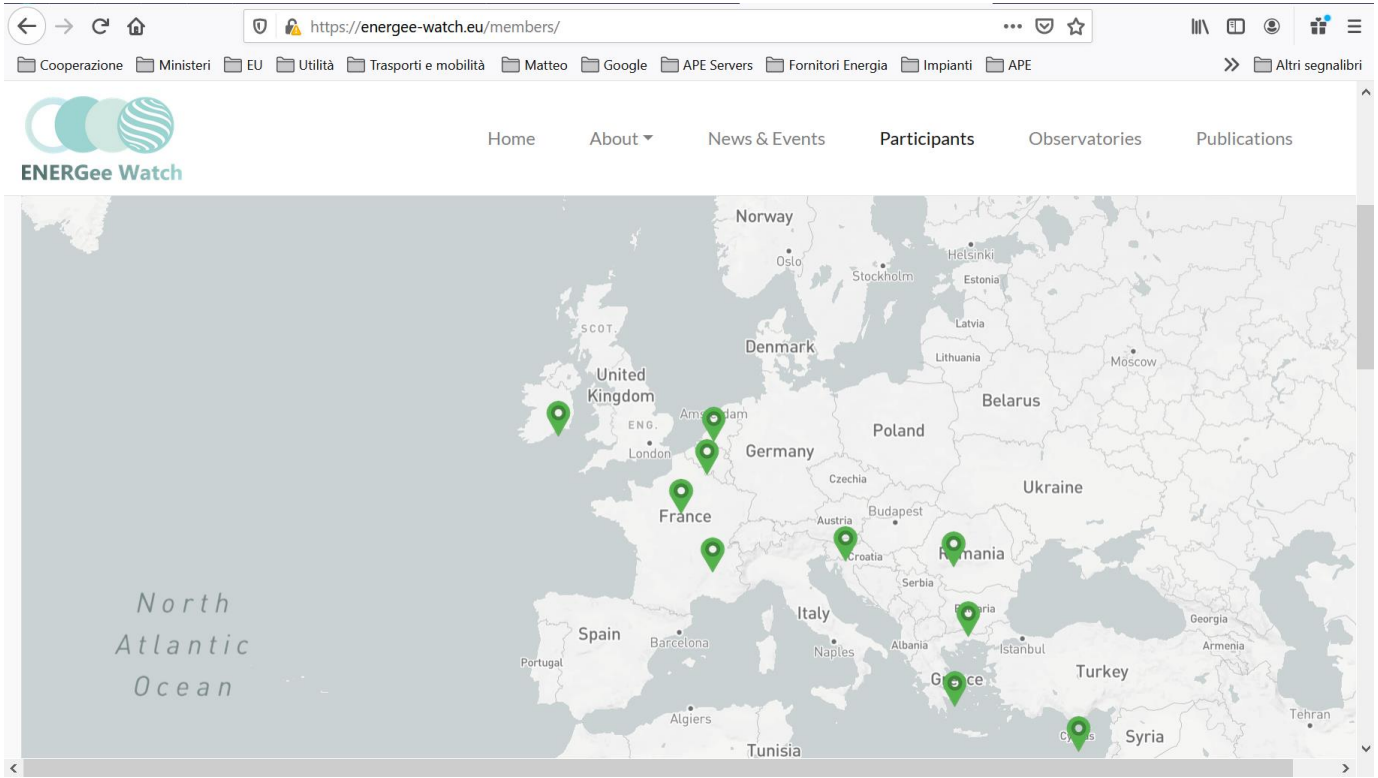
Could publications represent an effective way to disseminate?



Energie- und Monitoringbericht
Vorarlberg

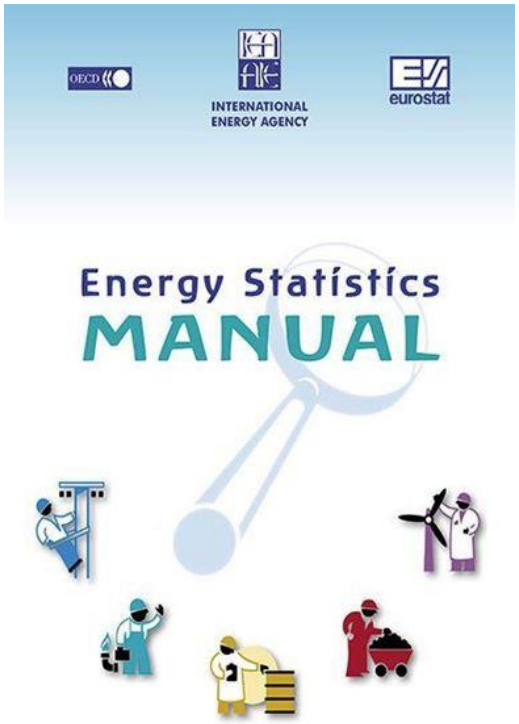
Energy data sharing

Let's think about what is existing



Energy data common glossary

Let's think about what is existing



https://ec.europa.eu/eurostat/cache/metadata/en/nrg_quant_esms.htm

Cooperazione | Ministeri | EU | Utilità | Trasporti e mobilità | Matteo | Google | APE Servers | Fornitori Energia | Impianti | APE | Altri segnalibri

eurostat

Energy statistics - quantities (nrg_quant)
Reference Metadata in Euro SDMX Metadata Structure (ESMS)
Compiling agency: Eurostat, the Statistical Office of the European Union

Eurostat metadata

Reference metadata

1. Contact
2. Metadata update
3. Statistical presentation
4. Unit of measure
5. Reference Period
6. Institutional Mandate
7. Confidentiality
8. Release policy
9. Frequency of dissemination
10. Accessibility and clarity
11. Quality management
12. Relevance
13. Accuracy
14. Timeliness and punctuali
15. Coherence and comparab
16. Cost and Burden
17. Data revision
18. Statistical processing
19. Comment

Related Metadata
Annexes (including footnote

National metadata

National reference metadata
National metadata produced by countries and released by Eurostat

Belgium | Bulgaria | Czechia | Denmark
Germany | Estonia | Ireland | Greece

https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Category:Energy_glossary

Cooperazione | Ministeri | EU | Utilità | Trasporti e mobilità | Matteo | Google | APE Servers | Fornitori Energia | Impianti | APE | Altri segnalibri

B
- Biodiesel
- Biofuels
- Biogasoline
- Biomass
- Bunkers

C
- CHP
- City heating
- Co-generation
- Combined heat and power (CHP)
- Commodity
- Crude oil

D
- Diesel oil price
- District heating

E
- Energy dependency rate
- Energy intensity

F
- Final energy consumption
- Fossil fuel

G cont.
- Gross electricity consumption
- Gross electricity generation
- Gross electricity generation at plant level
- Gross electricity production
- Gross energy consumption
- Gross inland consumption
- Gross inland energy consumption
- Gross national electricity consumption
- GWh

I
- International maritime bunkers

K
- Kilograms of oil equivalent (kgoe)
- Kilowatt hours (KWh)
- KWh

M
- Mixed oxide (MOX)
- MOX

N
- Net electricity generation

P cont.
- Premium unleaded gasoline price
- Primary energy consumption
- Primary energy production
- Primary good
- Primary production of energy

R
- Raw material
- Recovered products
- Renewable energy sources
- Renewables

S
- Separative work unit (SWU)
- SWU

T
- THM
- Toe
- Tonne of separative work units (tSWU)
- Tonnes of heavy metal (tHM)
- Tonnes of oil equivalent (toe)
- Total gross electricity generation
- TSWU

Business model: the logic behind

What is the product/service we would like to provide?

✓ Energy information at regional scale

Who are the "customers"?

✓ Decision makers of the region (but not only)

Pains to relieve or obstacles to overcome on behalf of the "customers"?

✓ availability of energy data for energy strategy design & monitoring

Gains or advantages for the "customers"?

✓ tailored and effective energy policies for the region

Business model: value proposition

Why should decision makers support us i.e. “buy our services”?

- ✓ Because we provide energy information:
  - otherwise not fully available
  - timely (when needed) and professionally (relevant & reliable)
  - at low cost (lower than the market)
- ✓ Because we bridge energy policy makers and stakeholders through:
  - communication (periodically updated energy information)
  - dissemination (energy scenarios and perspectives)
  - valuable sectoral insights (profiling specific energy sectors)

Business model: pro & con

PUBLIC PRIVATE

60% public resources

40% private resources

Less focused on energy policies

Advice less independent

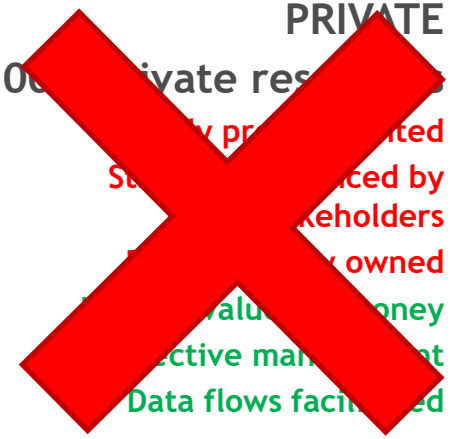
Partly profit oriented

Good value for money

Closer to stakeholders

Diversified activities

Good network support



Business model: one possible outline

What kind of partnership and management structure among:

- ✓ Regional energy producers (Dolomiti Energia, Kelag, etc.), TSO & DSO
- ✓ ESCOs (Cofely, Hera, etc.)
- ✓ Banks, Investment Funds & Foundations (Cariplo, Friuli, etc.)
- ✓ Regions

What other services to provide beside energy data?

- ✓ ENERGY INFORMATION: EO insights, EO working papers
- ✓ ENERGY EVENTS: EO seminars, EO annual conference
- ✓ PERIODICALS: EO newsletter, EO outlooks
- ✓ PUBLICATIONS: EO Annual report, EO research papers

Business model: funding Energy Observatories

Elaboration of a common project development plan of the observatory

- ✓ Crossborder and international cooperation programmes
- ✓ H2020: Supporting public authorities to implement the Energy Union
- ✓ Private resources from big energy producers (Alperia, Dolomiti Energia, Kelag, …), territorial banks (Reiffeisen, Cassa Centrale Trento, …), foundations (Fondazione Friuli, Cariplo, …), big energy service suppliers (Cofely, Siram, Hera, …)
- ✓ Public resources from Regions

Network of Regional Energy Observatories

Added value of setting up a network of energy observatories?

- ✓ Sharing of ideas between „neighbours“
- ✓ Positive competition
- ✓ Development of common projects
- ✓ Evaluation of common needs
- ✓ Enhanced international cooperation
- ✓ Exchange of know-how and best practices
- ✓ Etc.

Synergies for the further harmonisation of energy indicators

Financial synergies to develop common tools

THANK YOU FOR YOUR ATTENTION

Special thanks for the contributions of Patrick Biard (Auvergne-Rhône-Alpes Énergie Environnement) and Silvio Nigris (Regione Piemonte)

Matteo Mazzolini
APE FVG executive director
Via Santa Lucia, 19 – 33013 – Gemona del Friuli (Italia)

www.ape.fvg.it

matteo.mazzolini@ape.fvg.it

+39 0432 980322

facebook.com/APE.FVG

linkedin.com/company/apefvg

twitter.com/APEFVG