

# DATACTION

Collaborating in energy data exchange

## Overview of ways of presenting data at territorial level

Date: 18.11.15

Presented By: Silvio De Nigris

# Data dissemination and use

## ► How to use data:

- Charts, GIS, Sankey diagrams
- Handling data to Local Authorities

## ► How to disseminate data

- Paper/Electronic Reports/Brochures
- Online tools

# Starting remarks

- ▶ **What is important for dissemination of data?**
  - ▶ Collect data during the time (trends are important to understand where we are, why and what will likely come next)
  - ▶ To publish data as recent as possible (data must be reliable but if they too old they are useless to understand the reality)
  - ▶ To use index to disseminate information behind the “curtains”
  - ▶ To reduce as much as possible time and effort for providing data to Local Authorities

**TIME**



# Charts - traditional examples

Consumo di energia per vettore

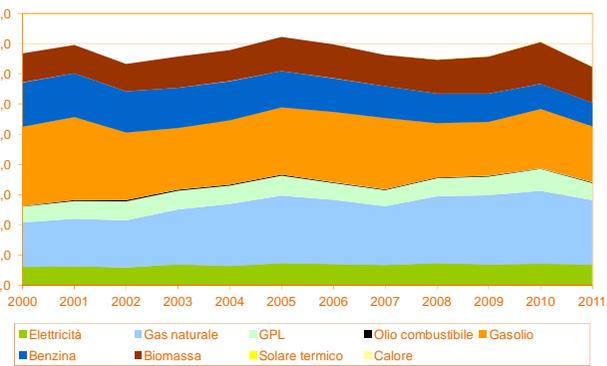
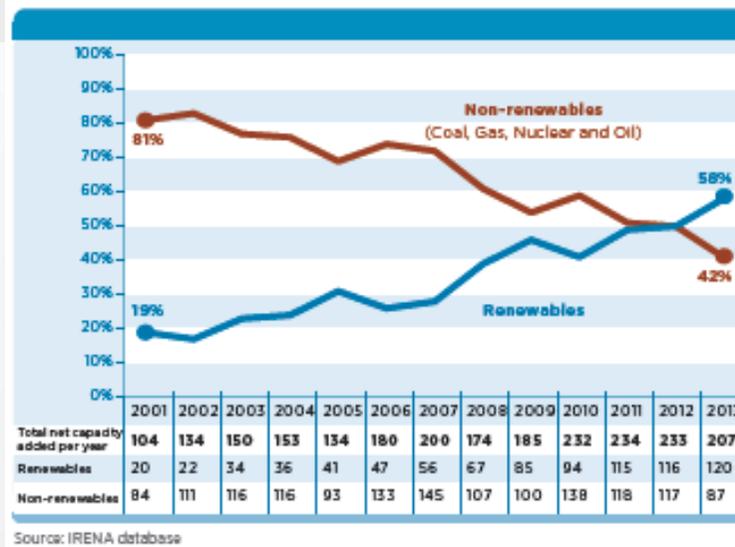


Figure 4: Renewables as a share of global capacity additions (2001-2013)



Renewable energy employment by technology

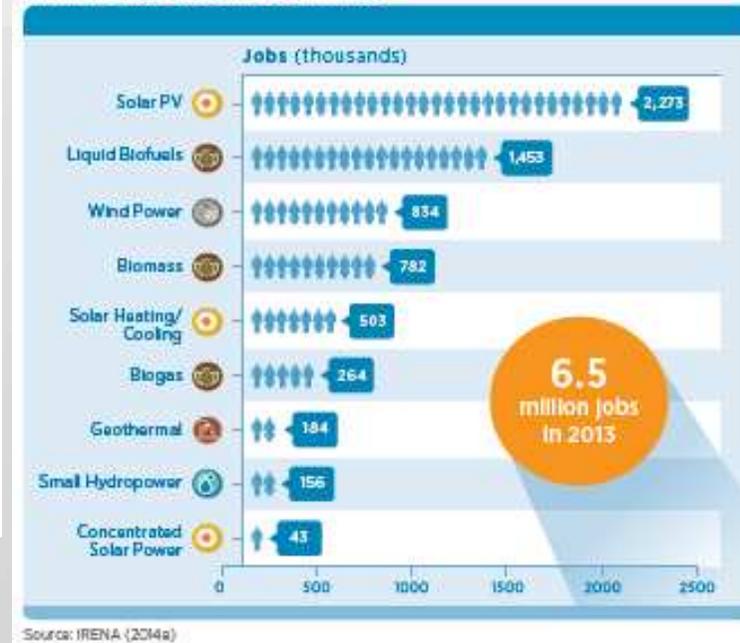


Figure 1: Electricity generation and population growth

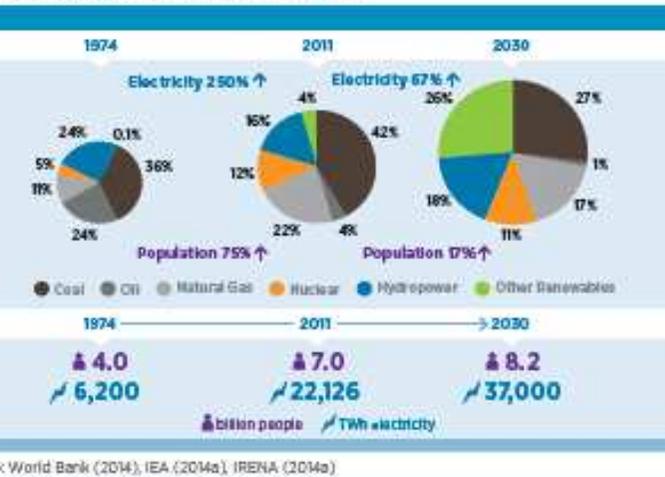
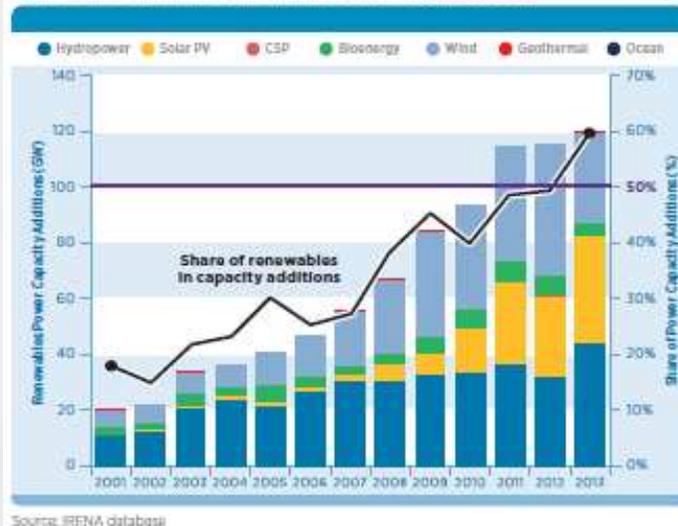
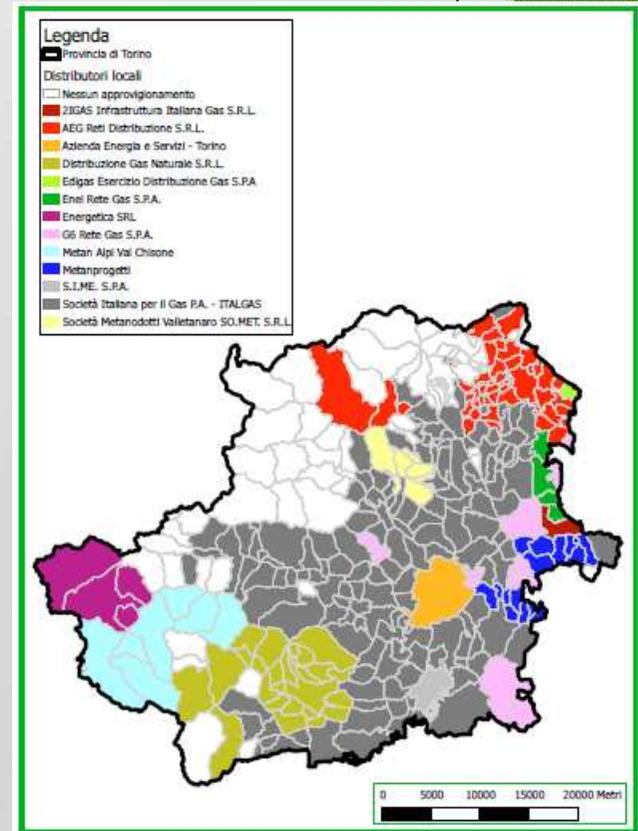
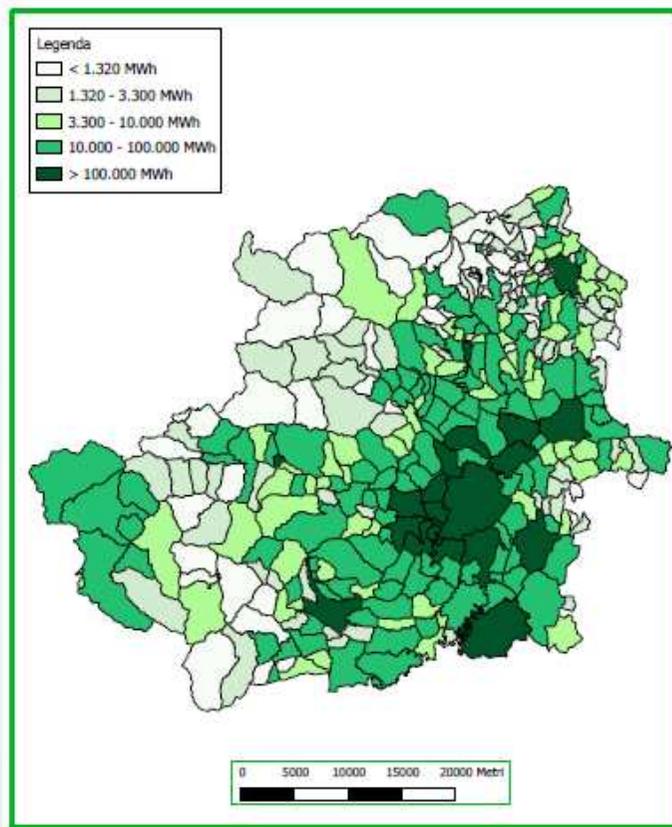
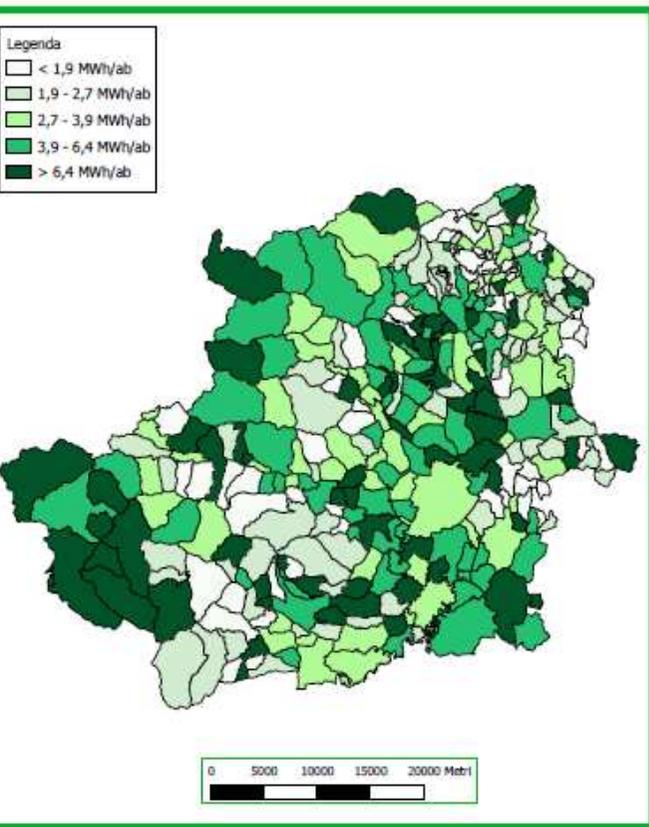


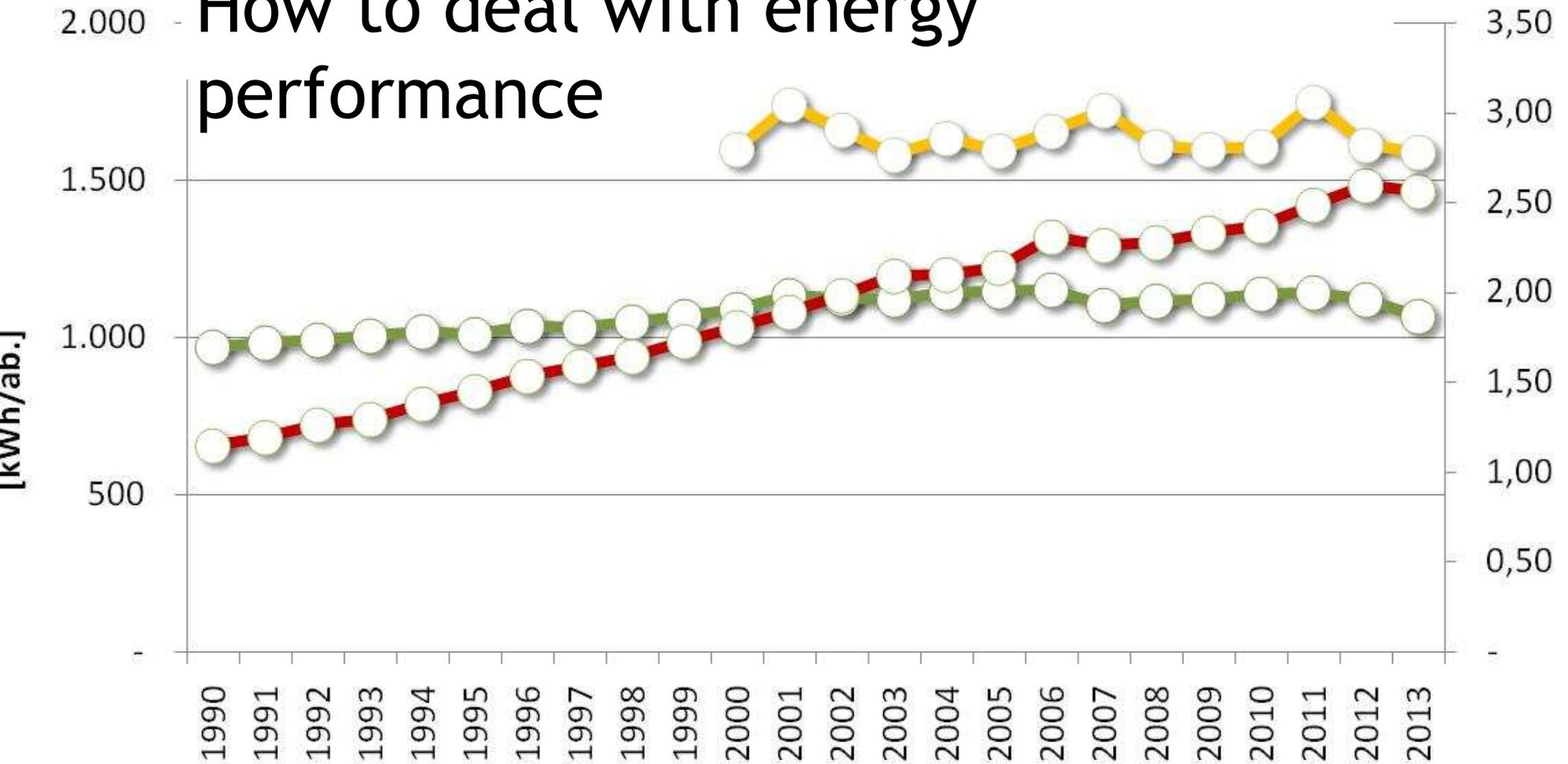
Figure 5: Annual renewables capacity addition by technology (2001-2013)



# The use of GIS: traditional examples

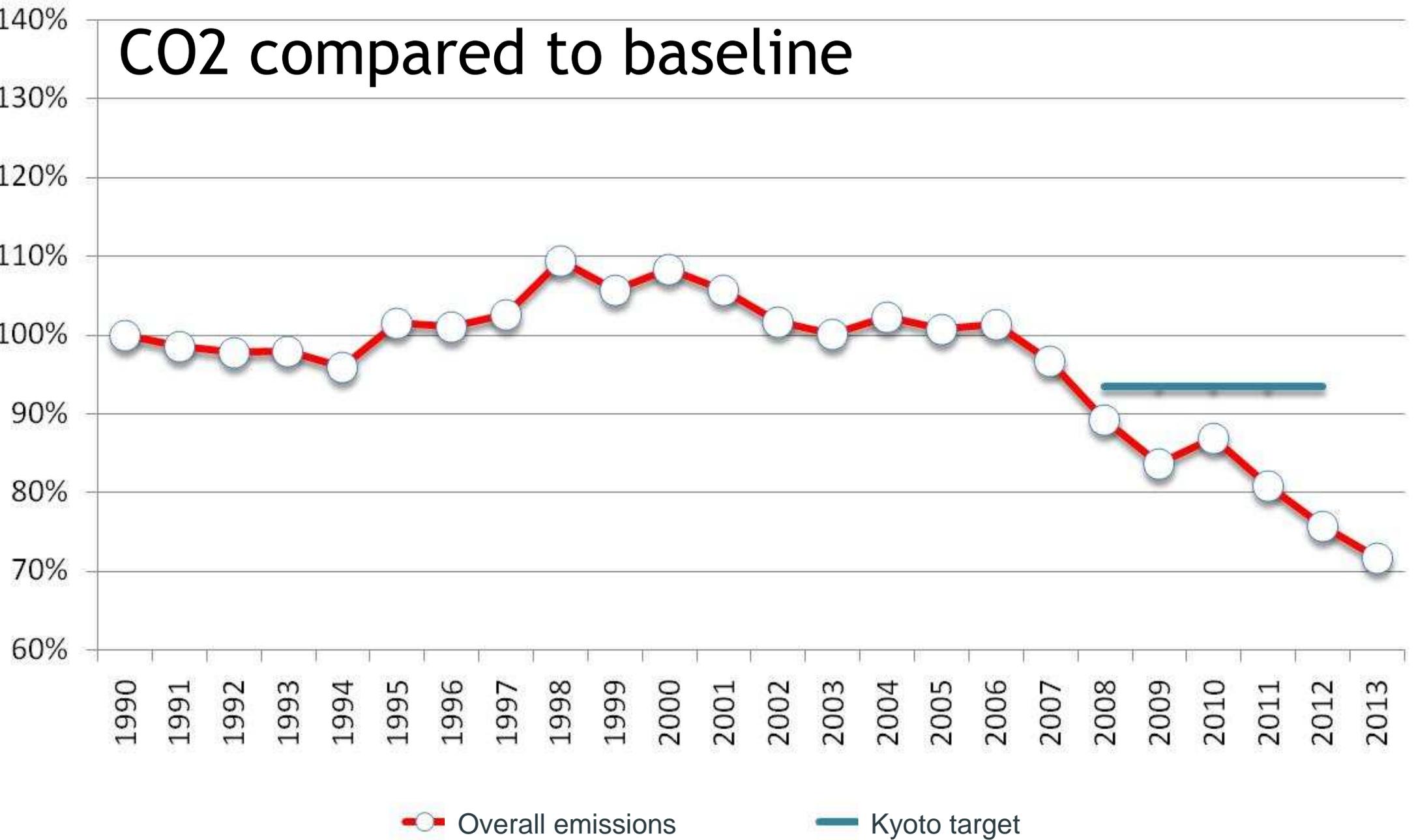


# How to deal with energy performance

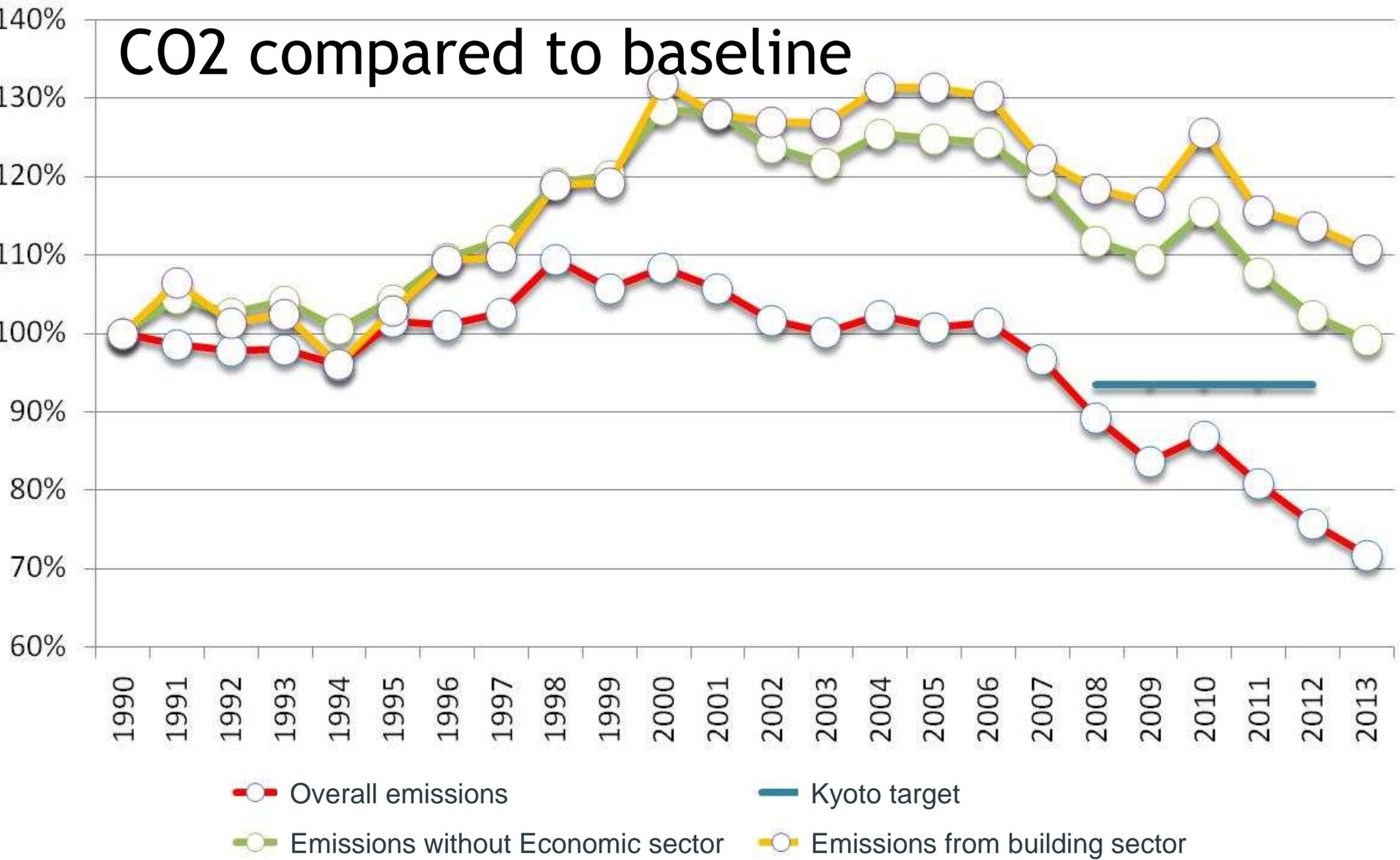


- Electric consumption per capita – Private Households
- Electric consumption per capita – Service&Commerce
- Thermal consumption per capita and day degree – Building Sector

# CO2 compared to baseline



# CO2 compared to baseline



# Charts - alternative examples

Final energy use (marginal  
annual variation)

D: Recession and waste

A: Non sustainable growth

C: Recession

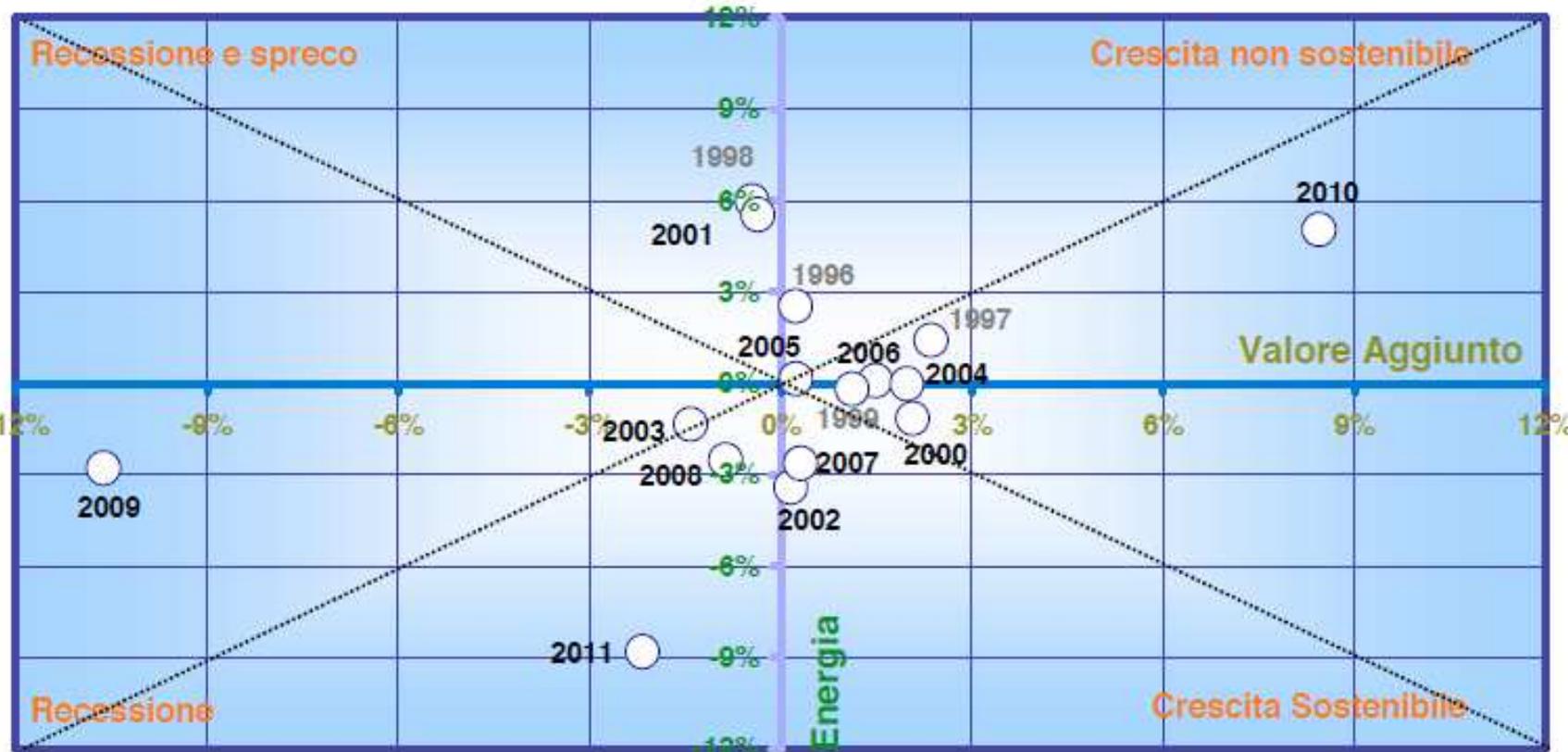
B: Sustainable development

Added value/GDP  
(marginal annual vari



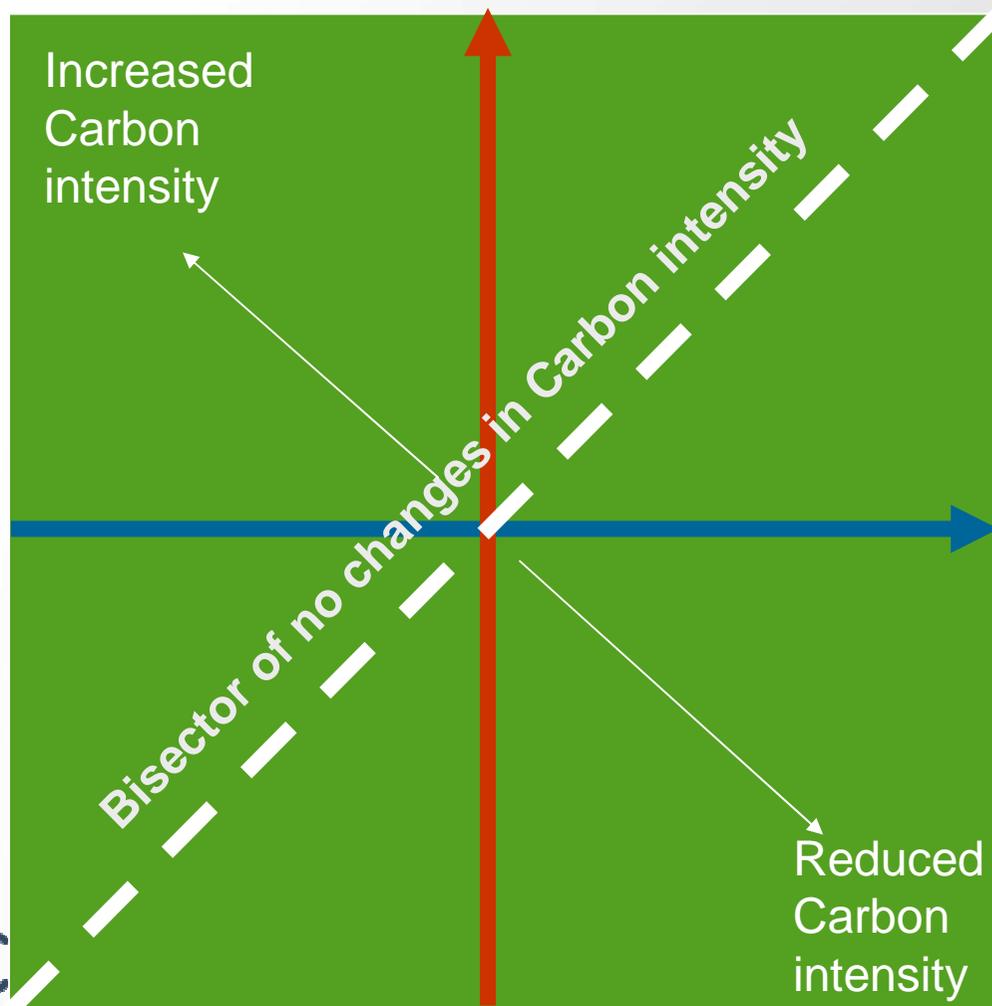
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Programme of the European Union

# Charts - alternative examples



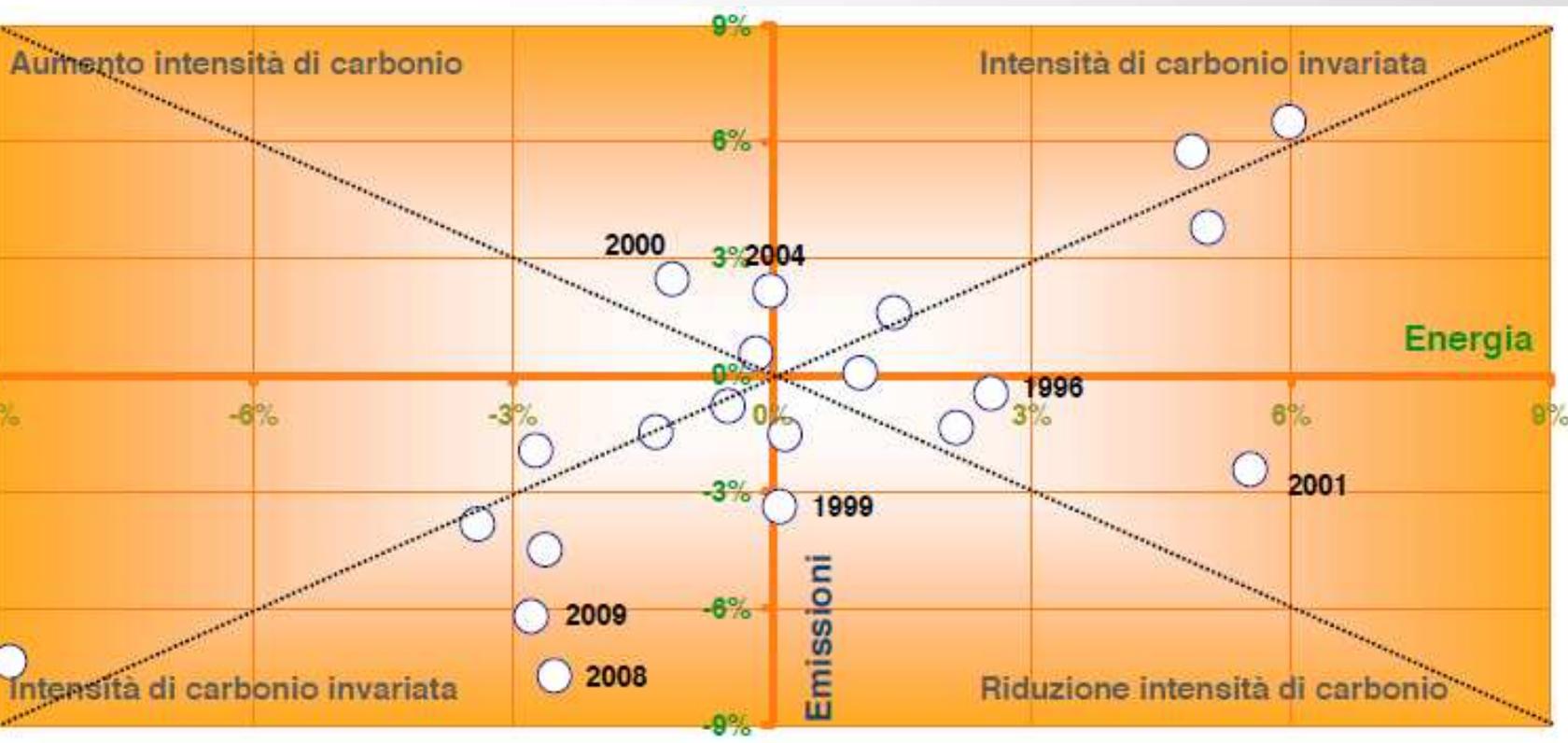
# Charts - alternative examples

**CO2 emissions (marginal annual variation)**

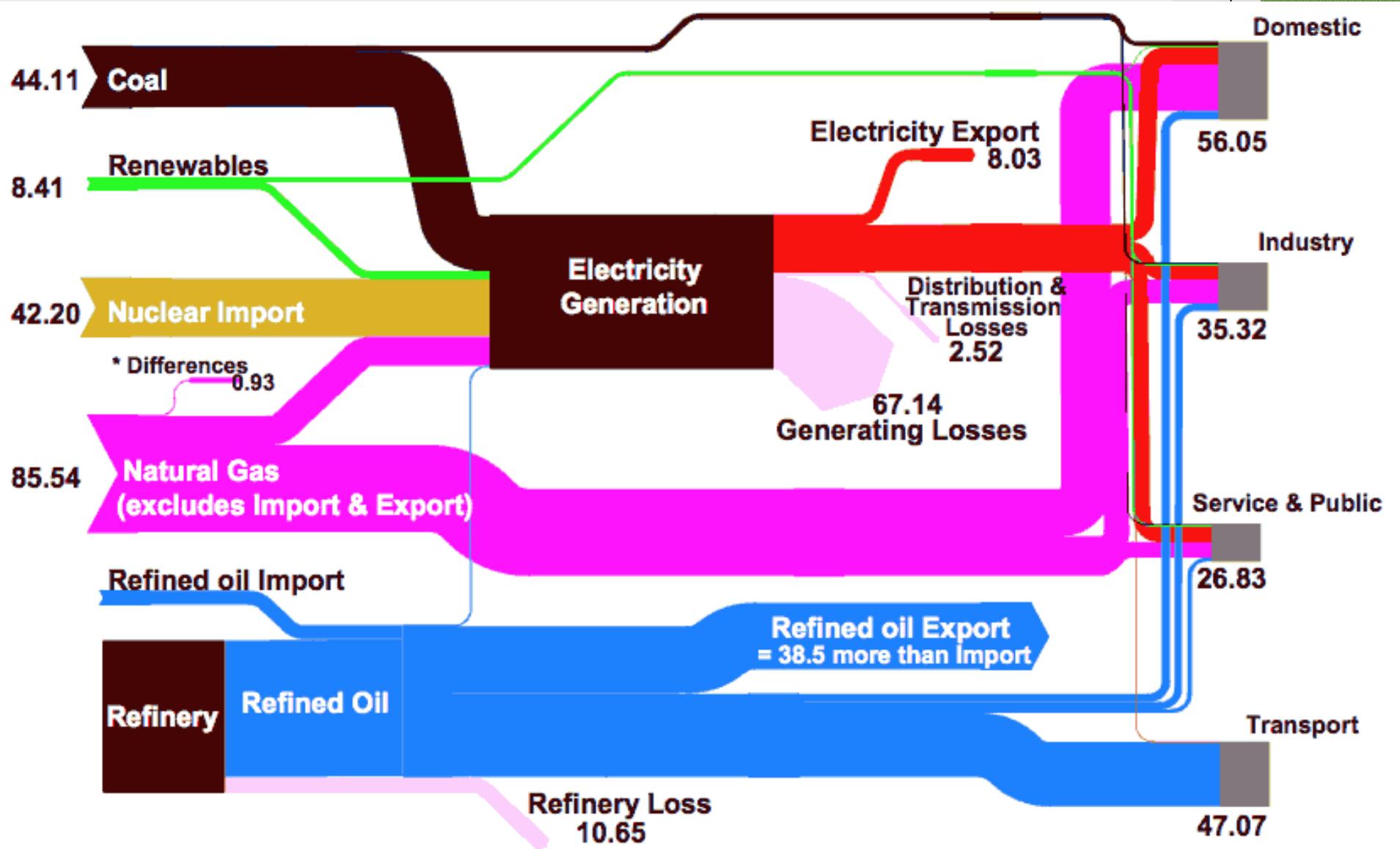


**Final energy use (marginal annual variation)**

# Charts - alternative examples



# Sankey diagrams



DATA

# How to Handle data to Local Authorities

- Self-made excel database to be improved in Data4Action project
- Standard charts and analysis provided in few clicks



Microsoft Excel - template2010\_originale.xls

File Modifica Visualizza Inserisci Formato Strumenti Dati Finestra ?

Arial 10

E2 | 1030 - BORGOFRANCO D'IVREA

Seleziona il Comune dal menu a tendina: 1030 - BORGOFRANCO D'IVREA

SELEZIONARE IL COMUNE DESIDERATO

Totale												
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Consumo settori (MWh)	0	0	0	0	0	0	0	0	0	0	0	0
Edifici comunali	0	0	0	0	0	0	0	0	0	0	0	0
Edifici terziari	4.332	4.973	4.754	4.850	3.944	4.372	4.210	4.591	5.164	5.237	5.015	4.528
Edifici residenziali	26.944	37.464	38.240	37.668	35.724	37.014	35.999	33.717	35.654	37.463	40.044	37.052
Illuminazione pubblica	0	0	0	0	0	0	0	0	0	0	0	0
Industria	135.379	134.545	125.413	122.879	120.294	111.002	106.554	102.925	44.790	47.917	16.042	14.091
Agricoltura	484	797	877	862	1.008	1.015	1.165	1.100	1.092	1.070	1.055	1.178
Flotta comunale	0	0	0	0	0	0	0	0	0	0	0	0
Trasporti pubblici	0	0	0	0	0	0	0	0	0	0	0	0
Trasporti commerciali/privati	39.245	49.512	37.003	35.510	34.432	35.507	40.462	40.492	34.049	34.824	35.404	34.412
<b>Totale</b>	<b>217.428</b>	<b>219.323</b>	<b>206.994</b>	<b>201.436</b>	<b>197.958</b>	<b>191.958</b>	<b>188.089</b>	<b>182.185</b>	<b>122.723</b>	<b>124.512</b>	<b>109.929</b>	<b>98.769</b>

Energia elettrica												
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Consumo settori (MWh)	0	0	0	0	0	0	0	0	0	0	0	0
Edifici comunali	0	0	0	0	0	0	0	0	0	0	0	0
Edifici terziari	2.061	2.121	2.327	2.345	2.202	2.342	2.235	2.291	2.744	2.755	2.762	2.714
Edifici residenziali	3.850	4.935	4.920	4.695	3.999	3.914	3.960	3.845	3.915	4.004	4.230	3.967
Illuminazione pubblica	0	0	0	0	0	0	0	0	0	0	0	0
Industria	2.401	2.461	2.091	2.062	2.025	2.749	2.914	2.899	12.394	10.393	10.902	9.570
Agricoltura	64	71	71	84	91	75	120	109	102	116	124	138
Flotta comunale	0	0	0	0	0	0	0	0	0	0	0	0
Trasporti pubblici	0	0	0	0	0	0	0	0	0	0	0	0
Trasporti commerciali/privati	0	0	0	0	0	0	45	41	42	21	0	0
<b>Totale</b>	<b>8.376</b>	<b>9.708</b>	<b>9.419</b>	<b>9.275</b>	<b>9.293</b>	<b>9.692</b>	<b>9.332</b>	<b>14.239</b>	<b>19,279</b>	<b>17,437</b>	<b>18,600</b>	<b>15,394</b>

Calore												
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Consumo settori (MWh)	0	0	0	0	0	0	0	0	0	0	0	0
Edifici comunali	0	0	0	0	0	0	0	0	0	0	0	0
Edifici terziari	0	0	0	0	0	0	0	0	0	0	0	0
Edifici residenziali	0	0	0	0	0	0	0	0	0	0	0	0
Illuminazione pubblica	0	0	0	0	0	0	0	0	0	0	0	0
Industria	0	0	0	0	0	0	0	0	0	0	0	0
Agricoltura	0	0	0	0	0	0	0	0	0	0	0	0
Flotta comunale	0	0	0	0	0	0	0	0	0	0	0	0
Trasporti pubblici	0	0	0	0	0	0	0	0	0	0	0	0
Trasporti commerciali/privati	0	0	0	0	0	0	0	0	0	0	0	0
<b>Totale</b>	<b>0</b>											

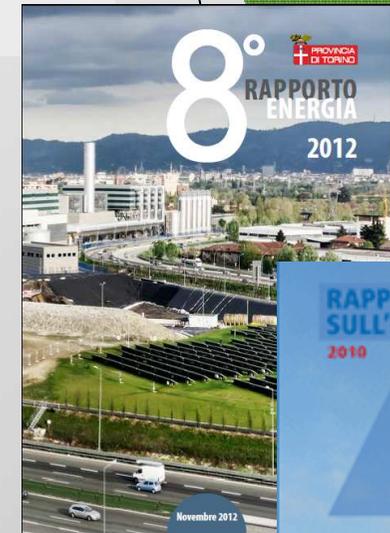
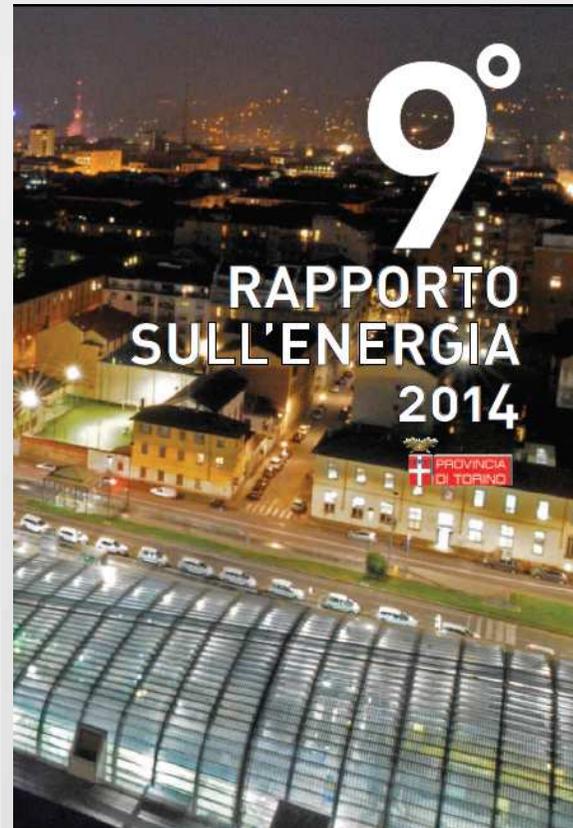
  

Gas naturale												
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Consumo settori (MWh)	0	0	0	0	0	0	0	0	0	0	0	0
Edifici comunali	0	0	0	0	0	0	0	0	0	0	0	0
Edifici terziari	0	0	0	0	0	0	0	0	0	0	0	0
Edifici residenziali	142	857	904	961	700	705	1.051	1.207	1.614	1.629	2.320	605
Illuminazione pubblica	13.517	13.715	14.016	14.500	13.707	13.424	14.621	14.147	16.195	16.427	17.425	17.195
Industria	0	0	0	0	0	0	0	0	0	0	0	0
Agricoltura	0	0	0	0	0	0	0	0	0	0	0	0
Flotta comunale	0	0	0	0	0	0	0	0	0	0	0	0
Trasporti pubblici	0	0	0	0	0	0	0	0	0	0	0	0
Trasporti commerciali/privati	0	0	0	0	0	0	0	0	0	0	0	0
<b>Totale</b>	<b>13.659</b>	<b>14.572</b>	<b>14.920</b>	<b>15.461</b>	<b>14.407</b>	<b>14.129</b>	<b>15.672</b>	<b>15.414</b>	<b>17.809</b>	<b>18.056</b>	<b>21.745</b>	<b>17.800</b>

dati\_dettaglio / dati\_dettaglio\_corretto / dati\_dettaglio\_per\_settore / dati\_sintesi / template\_PAES

# How to publish data: The Reports

- ▶ Reports are addressed to a more technical target
- ▶ Publication: preferably electronic versions
- ▶ You need a lot of time for the writing and editing of such reports (2-3 months).
- ▶ The Metropolitan City of Torino is issuing every 2 years and Energy Report (9<sup>th</sup> edition released on December 2014). It is a about 100 pages report with energy analysis on Supply, Transformation, Demand and CO2 emissions.



DATA ACTION



Co-funded by the Intelligent Energy Europe Programme of the European Union

# How to publish data: The brochures

- Brochures are addressed to technical target, but also to policy makers and citizens
- Publication: preferably paper versions
- You should invest efforts in the design of the brochure rather than the contents.
- A brochure with key energy data was released by the Metropolitan City of Torino in 2012 and 2014 in order to publish key data included in the Energy Report.



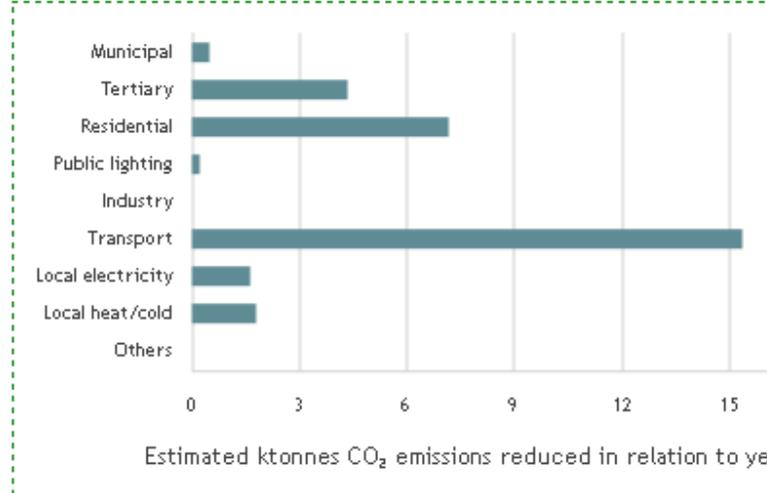
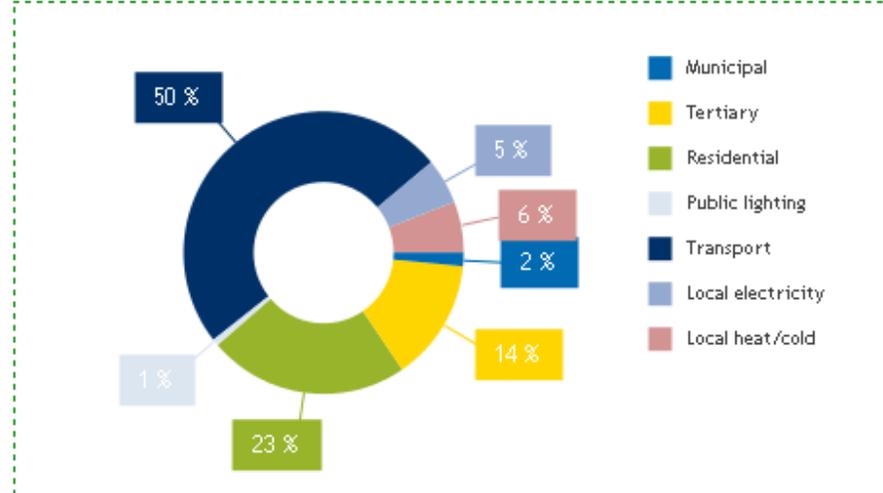
# How to publish data: online tools

- ▶ **Type 1: reading**
  - ▶ Use: Dissemination
  - ▶ Target audience: general public
- ▶ **Type 2: reading and downloading**
  - ▶ Use: Dissemination/Planning
  - ▶ Target audience: Technicians/policy makers
- ▶ **Type 3: interactive**
  - ▶ Use: Dissemination/Trigger investments
  - ▶ Target audience: General public
- ▶ **Type 4: (.....) + sharing**
  - ▶ Use: Dissemination/Planning/Management
  - ▶ Target audience: Technicians/policy makers

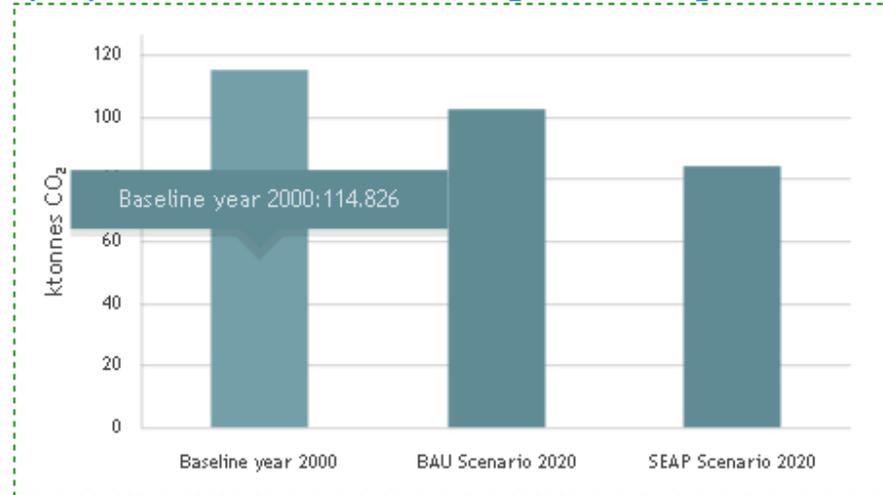
# How to publish data: online tools

- Type 1: reading.
- Example 1: the Covenant of Mayor website

6) Estimated greenhouse gas emissions reduction per sector in 2020



7) Expected evolution in terms of greenhouse gas emissions



You can read documents and data.

The level of interaction and use of data available is quite low.

# How to publish data: online tools

- ▶ Type 1: reading.
- ▶ Example 2: the webGIS about local power plant of the Metropolitan City of Torino.



**IMPIANTI DI PRODUZIONE ENERGETICA**

Mappe    Legenda

- Impianti Termoelettrici: Alim. Telerisc.
- Impianti Termoelettrici: No Telerisc.
- Impianti Fotovoltaici - pot. >500kW
- Impianti Eolici
- Impianti Idroelettrici
- Aree Teleriscaldate
- Sfondo Cartografico Piemonte

Schermo intero    Identify    Identify areale    Ricerche

**Città metropolitana di Torino OSSERVATORIO ENERGIA**

**LOCAL AGENDA 21**  
IN TERRITORIAL PLANNING IN ENERGY AND WASTE MANAGEMENT

Project funded by the EUROPEAN UNION

The user can make selection and get information, medium interaction.

# How to publish data: online tools

## ► Type 2: reading and downloading

The user can make selection and get information, high interaction.



The screenshot shows the IRENA Resource website interface. At the top, there is a blue header with the IRENA logo and the text 'International Renewable Energy Agency'. Below the header, the word 'RESOURCE' is prominently displayed in large blue letters, followed by the tagline 'YOUR SOURCE FOR RENEWABLE ENERGY INFORMATION'. A search bar with a magnifying glass icon is positioned below the title. Three main navigation buttons are visible: 'DATA & STATISTICS' (with a bar chart icon), 'COUNTRY PROFILES' (with a globe icon), and 'RENEWABLE ENERGIES' (with a 'RE' icon). The background features a large, light blue world map. At the bottom of the page, there is a footer with the copyright notice '© IRENA 2015' and a small button that says 'Fare clic per iniziare.'.

# How to publish data: online tools

## Type 3: interactive

The user can use the tool for checking the feasibility of investments, high interaction.

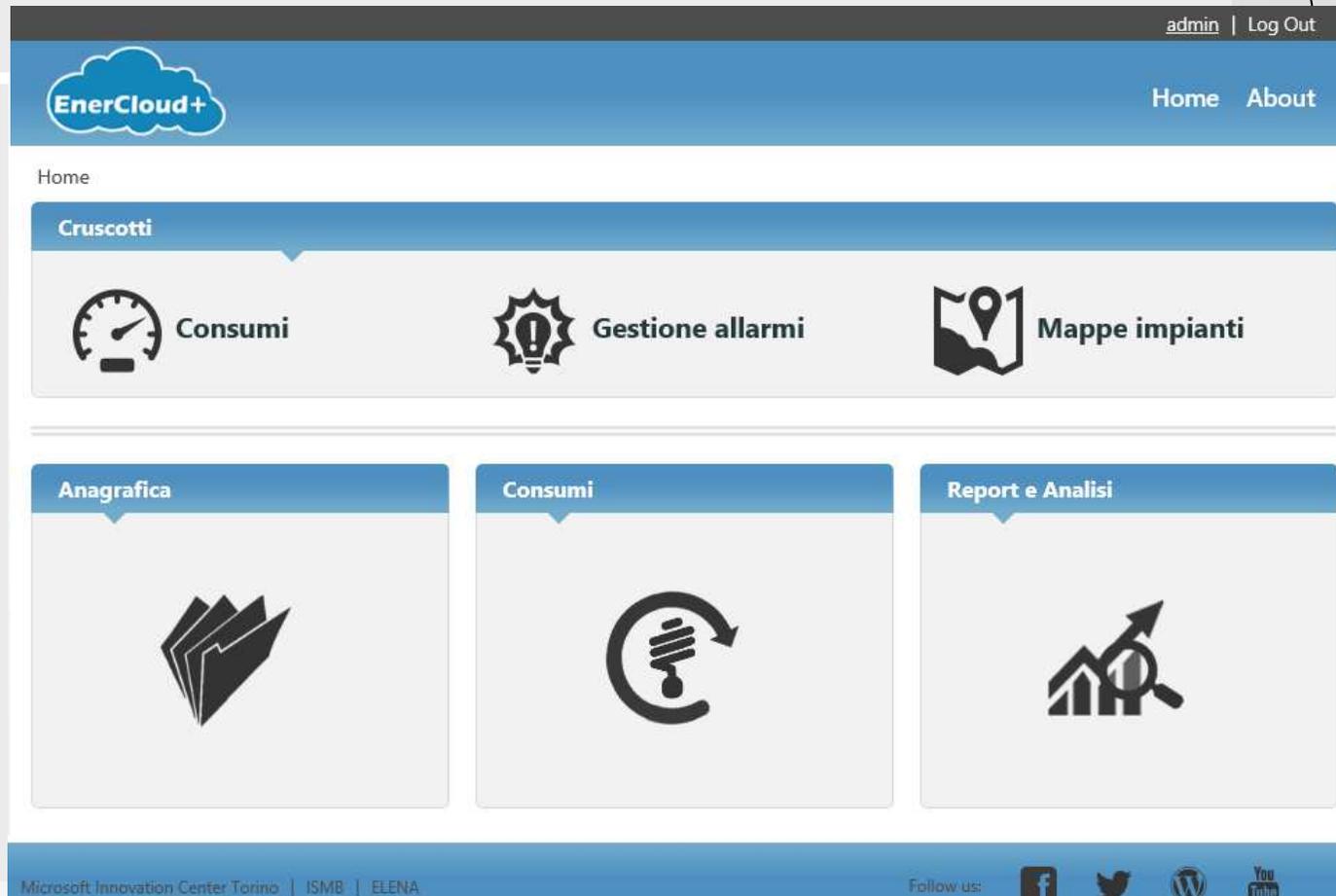


The screenshot shows the 'Cities on power' web application interface. At the top, it features logos for 'CENTRAL EUROPE COOPERATING FOR ENERGY', 'EUROPEAN UNION EUROPEAN REGIONAL DEVELOPMENT FUND', and 'Cities on power'. The main title is 'Strumento di analisi energetica per gli edifici'. The interface includes a map of Torino with various energy-related data overlays. A sidebar on the left contains an 'Instructions' section with the following text: 'Per iniziare...', 'A. Cerchi l'edificio indicando indirizzo e civico: Inserisci una posizione', 'or', 'B. Si muova sulla mappa e clicchi nella posizione desiderata!', and 'Mostra la mappa solare' with 'On' and 'Off' buttons. The bottom of the interface features the 'Città metropolitana di Torino OSSERVATORIO ENERGIA' logo and the European Union logo with the text 'Co-funded by the Intelligent Energy Europe Programme of the European Union'.

# How to publish data: online tools

## ► Type 4: sharing/managing

The tool is used for managing and sharing data. The user is the data provider itself



The screenshot shows the EnerCloud+ web interface. At the top, there is a navigation bar with the logo, 'Home', and 'About' links. Below this is a 'Cruscotti' (Dashboards) section with three main cards: 'Consumi' (Consumption) with a speedometer icon, 'Gestione allarmi' (Alarm Management) with a lightbulb icon, and 'Mappe impianti' (Plant Maps) with a map icon. Below the dashboards are three larger panels: 'Anagrafica' (Registry) with a folder icon, 'Consumi' (Consumption) with a circular arrow icon, and 'Report e Analisi' (Reports and Analysis) with a bar chart icon. The footer contains social media links and the text 'Microsoft Innovation Center Torino | ISMB | ELENA'.

# DATACTION

## Thank You!

For Further Information and support:

[www.data4action.eu](http://www.data4action.eu)

► [silvio.denigris@cittametropolitana.torino.it](mailto:silvio.denigris@cittametropolitana.torino.it)

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