

RUBI
brilla

Eventos

Jornada Gaia X: Impulso definitivo a los espacios de datos

21 de marzo de 2024

**Data from private stakeholders for urban management:
Rubí City Town experience with energy industry.**

Use case at *European Data Space for Smart Communities* blueprint
(DS4SSCC)



Ajuntament
de Rubí

Jornada Gaia X, 21/3/24

Rubí Brilla (and municipality) goals

Climate Action: accelerate the *Local Energy Transition*

Goals

- Reduce City energy consumption (kWh) (Including City Hall)
- Decentralize and Democratize: bringing production closer to consumption, breaking oligopoly, empowering citizens and local energy services companies
- Switch to renewable energy
- Promote/accelerate local economic activity around Energy Transition services

Policies & Actions

- Awareness and Advice (citizens, businesses, industry, mobility)
- Energy rehabilitation of buildings (citizens and companies)
- Green taxation: IAE and IBI discounts for energy rehabilitation and self-consumption
- Promotion of self-consumption and Energy Communities



kWh – MICRO DATA CONSUMPTION?

(2017-2018) we asked ourselves two essential questions:

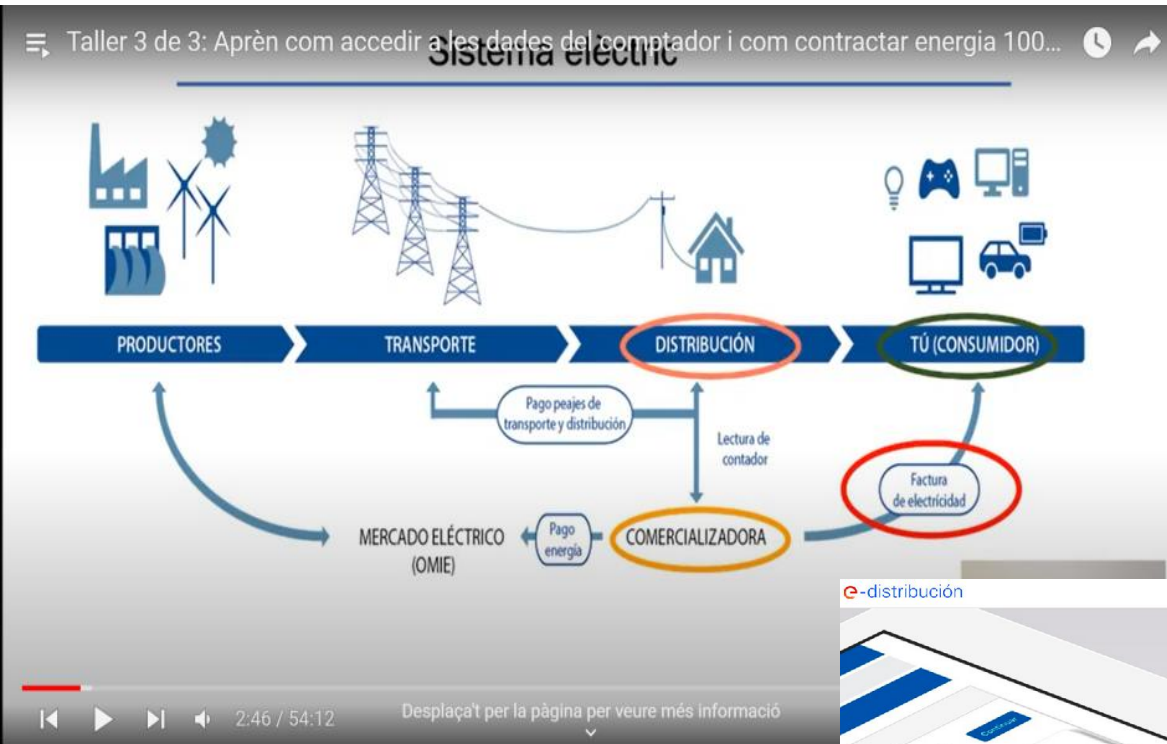
- 1. Where are the micro consumption data of the city?(their buildings, industries, town hall, etc)?**
- 2. Can we access? How?**



Energy in the municipality?: consumption/self-production data are digitized. Where? -> SUPPLIER = DISTRIBUTOR

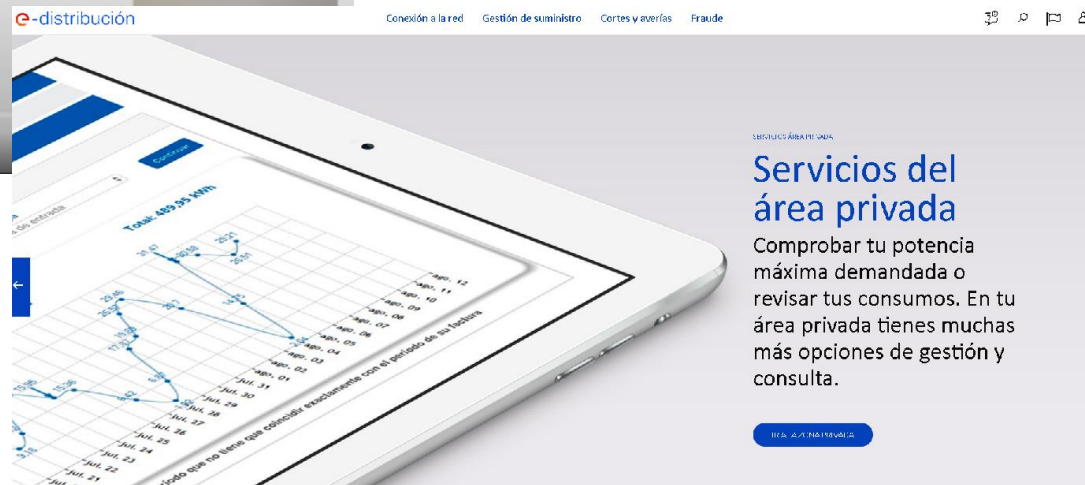
Energy Supply Chain in the Spanish energy sector:

Production (many)->transport (1)-> **distribution (unique)**-> commercialization (many)



The **smart meters**: where the last-mile consumption is recorded (data)

THE DISTRIBUTOR UNIQUE DATA SOURCE



Online Workshop for citizens: **“Learn how to access to your meter data”**
(Rubi City Council Youtube channel)
<https://youtu.be/sFTK-Qz9Wyl>

Contract owner access to consumption data

How acces? -> Consumer Virtual Office Supplier Company

CONTRACTUAL DATA

A	B	C	D	E	F	G	H	I	J	K	L	M
cups	distribuidora	comercializadora	tarifaAcceso	tensionConexion	potenciaContrat	modoCo	discriminacionHorari	fechaInicioVigenc	fechaFinVig	provincia	municipio	codigo
ES0031	DISTRIBUCIÓN	SOM ENERGIA SCCL	BAJA TENSION y POTENCIA <= 15 kV	Baja tensión	3,3;3,3	ICP	TARIFA DE TRES PERIODO:	15/07/2014		Barcelona	BARCELONA	8020
ES0031	DISTRIBUCIÓN	SOM ENERGIA SCCL	BAJA TENSION y POTENCIA <= 15 kV	Baja tensión	2,3;2,3	ICP	TARIFA DE TRES PERIODO:	04/05/2017		Lleida	CIUTADILLA	25341

Supplier, rate, voltage, power, power control mode, contract start date, end date, municipality, Postal Code

POWER DATA

One record for each smart meter and month. Max. power per month, day and hour of the maximum, demanded power

	A	B	C	D	
1	cups	fechaMaximo	hora	maximoPotenciaDemandadaKW	
2	ES003140	F	31/12/2019	15:00:00	3,076
3	ES003140	F	09/01/2020	19:00:00	4,376
4	ES003140	F	14/02/2020	21:30:00	3,828
5	ES003140	F	26/03/2020	14:30:00	4,184
6	ES003140	F	04/04/2020	21:45:00	3,756
7	ES003140	F	16/05/2020	13:15:00	4,74
8	ES003140	F	19/06/2020	16:30:00	3,956
9	ES003140	F	20/07/2020	21:15:00	3,756
10	ES003140	F	31/08/2020	14:45:00	1,12
11	ES003140	F	14/09/2020	18:15:00	2,556
12	ES003140	F	16/10/2020	22:00:00	3,916
13	ES003140	F	07/11/2020	12:00:00	4,156
14	ES003140	F	26/12/2020	11:15:00	4,08
15	ES003140	F	31/01/2021	11:45:00	4,344
16	ES003140	F	20/02/2021	11:45:00	3,232
17	ES003140	F	05/03/2021	14:00:00	4,436
18	ES003140	F	09/04/2021	22:00:00	3,596
19	ES003140	F	09/05/2021	12:45:00	4,192
20	ES003140	F	10/06/2021	0:00:00	4,768
21	ES003140	F	04/07/2021	14:15:00	2,688
22	ES003140	F	31/08/2021	14:30:00	1,588
23	ES003140	F	18/09/2021	11:45:00	3,992
24	ES003140	F	30/10/2021	15:15:00	4,768
25	ES003140	DF	07/12/2019	18:00:00	0,408
26	ES003140	DF	31/01/2020	23:00:00	0,388
27	ES003140	DF	02/02/2020	0:00:00	0,6
28	ES003140	DF	07/03/2020	22:00:00	2,468
29	ES003140	DF	17/04/2020	17:30:00	0,088
30	ES003140	DF	26/05/2020	20:00:00	0,26
31	ES003140	DF	28/06/2020	10:15:00	1,704
32	ES003140	DF	04/07/2020	22:45:00	3,264
33	ES003140	DF	16/08/2020	15:15:00	2,768
34	ES003140	DF	03/09/2020	21:45:00	2,78
35	ES003140	DF	11/10/2020	12:15:00	2,116
36	ES003140	DF	30/11/2020	17:30:00	0,292
37	ES003140	DF	03/12/2020	20:45:00	2,848
38	ES003140	DF	03/01/2021	13:15:00	0,036
39	ES003140	DF	14/02/2021	13:00:00	1
40	ES003140	DF	30/03/2021	21:30:00	2,88
41	ES003140	DF	02/04/2021	10:30:00	2,884
42	ES003140	DF	01/05/2021	22:45:00	2,264
43	ES003140	DF	11/06/2021	21:45:00	2,636
44	ES003140	DF	17/07/2021	15:00:00	2,968
45	ES003140	DF	05/08/2021	15:00:00	2,472
46	ES003140	DF	25/09/2021	15:15:00	2,356
47	ES003140	DF	11/10/2021	15:15:00	1,996

CONSUMPTION DATA

A record for each smart meter, day & hour. (kWh consumption & self-production)
365 x 24 = 8760 records/year

Ex. **ONLY CITY HALL: 315 SMART METERS**
8760 x 315 CUPS = 2.759.400 records/year

Some public actions and services provided by energy data driven



I. Proactive and Personalised Public Services (PPPS)

“Online energy advice channel for citizens”, Rubí Brilla 2030 master plan.
Action #1

https://www.rubi.cat/ca/temes/rubi-brilla/ajuntament/copy_of_pla-director-2030



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Ex. Automatic reports on self-consumption, best tariffs, etc. Based on individual historical data from distributor



Tu Consumo y Producción

Este gráfico superpone la gráfica de tu autoconsumo horario diario con la gráfica de producción horaria de la instalación solar dimensionada.

1. ESTALVIAR CANVIANT LA TARIFA

Anàlisi del teu consum:

Analitzant les dades que registra el teu comptador de consum. És d'acord amb aquesta anàlisi que et fem els

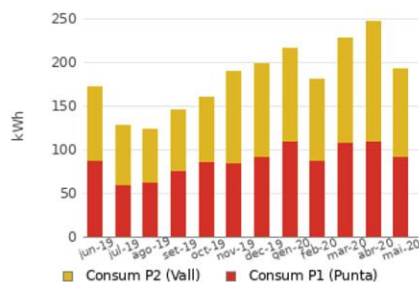
CONSUM TOTAL (kWh)

2.183

CONSUM P1 PL

1.124
51%

EVOLUCIÓ DEL TEU CONSUM MES A MES



Propostes de millora

El teu contracte actual és: **TARIFA: en**

De quins contractes de llum podem generar l'informe?:

- Actualment sols podem fer l'informe per a tarifes 2.0 i 2.1 (inferiors a 15kW de potència contractada). En breu esperem poder fer-ho per a tarifes amb potències superiors. La tarifa i potència contractada també figuren a la factura.

Si encara et queda algun dubte, contacta amb nosaltres a: rubi_brilla@ajrubi.cat

CUPS Més info

CUPS DNI/NIE/NIF/CIF del titular

Nom del titular Cognoms del titular

Nom del titular Cognoms del titular

Correu electrònic Telèfon mòbil

Adjuntar factura completa (totes les pàgines)

Seleccionar factura Tria

Sha d'adjuntar una factura (amb totes les pàgines) de la llum en format PDF o imatge. Amb un màxim de 4MB

Autoritzo al Ajuntament de Rubí amb CIF P0818300F per a que pugui:

- Accedir al portal de la distribuïdora a fi d'accedir a les dades de consum corresponents al punt de subministrament (CUPS) indicat.
- Utilitzar les dades de consum a què es fa referència a l'apartat anterior per fer-me un informe d'estalvi a la factura de llum personalitzat i altres serveis d'assessorament energètic personalitzats.

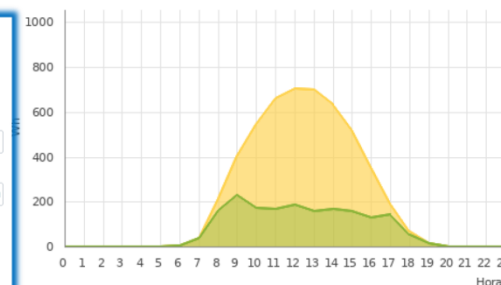
Per a més informació consulti la nostra [política de privacitat](#).

Signatura

Signatura no guardada

Informed Consent for Access to Personal Data at distributor systems (Rubí Brilla web)

AUTOCONSUMO/PRODUCCIÓN



Suposiciones y sin cambio de hábitos

<p>POTENCIA (kWp)</p> <p>1,20</p>	<p>m2 DE TEJADO ⁽¹⁾</p> <p>7,2</p>	<p>Energía autoconsumida: ⁽²⁾</p> <p>22%</p>
<p>REDUCCIÓN (AÑOS) ⁽³⁾</p> <p>4,9</p>	<p>AHORRO ANUAL</p> <p>79 €</p>	<p>AHORRO NETO A 30 AÑOS ⁽⁵⁾</p> <p>684 €</p>
<p>15,4 ⁽⁴⁾</p> <p><small>compensación de excedentes, los números mejoran!</small></p>	<p>142 € ⁽⁴⁾</p>	<p>3.225 € ⁽⁴⁾⁽⁵⁾</p>

Serveis automatitzats basats en dades:

- <https://www.rubi.cat/ca/temes/rubi-brilla/domestic/rehabilita-casa-teva/comunitats-rubi-brilla>
- <https://www.rubi.cat/ca/temes/rubi-brilla/domestic/produeix-la-teva-propia-energia-fotovoltaica/informe-automatic-fotovoltaica/informe-fotovoltaica-col-lectiu>
- <https://www.rubi.cat/ca/temes/rubi-brilla/domestic/produeix-la-teva-propia-energia-fotovoltaica/autoconsum-compartit-els-avets>



Ajuntament de Rubí



II. SIEU. For Policy planning and evaluation: Integration of external data sources at building level.

“Urban Energy Information System” (SIEU):
Rubí Brilla 2030 master plan. Action #22

<https://www.rubi.cat/ca/temes/rubi-brilla/dades-energia-i-digitalitzacio>



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II. SIEU. Dades internes (públiques) i externes (públiques i **privades**) amb granularitat d'edifici.

Generar noves dades, i valor, per cada edifici útils a stakeholders públics i privats: ciutadans, adms. de finques, finançadors de rehabilitació i inversions, empreses de serveis energètics de rehabilitació, administracions públiques, i entitats de societat civil.

JA INTEGRAT

-**Consums energètics i d'aigua (externes i privades)**

-Padró d'Habitants

-Cadastre (externes)

-Llicències de Instal·lacions Fotovoltaïques (externes)

-Informes de la Inspecció Tècnica d'Edificis (externes)

EN CURS

-Talls de subministrament per impagaments (**externes i privades**)

-Indicadors de Impostos (IBI, IAE)

-Llicències d'activitat econòmica

-Llicències de rehabilitació i obres

-Certificats energètics (externes)

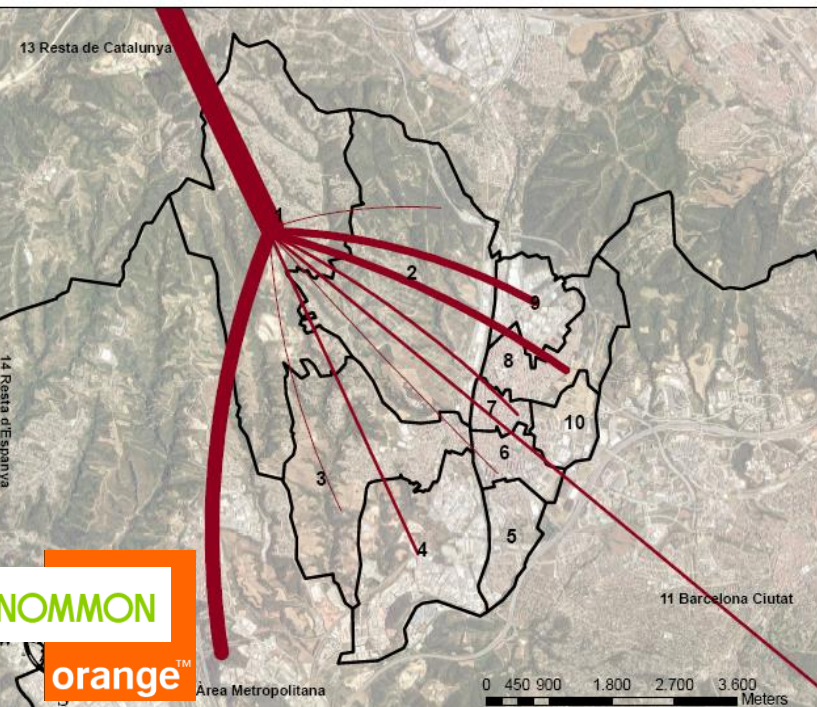
-etc



II. SIEU Private Data

The screenshot shows a GIS application interface with a map of Rubí. The map displays various layers, including 'Consumos Rubi (NEDGIA) CIMNE consumptions_result cadastr...' and 'RUB TOTAL CONSUMS FACTURS 2016 A 2018 (SOREA) consum...'. The interface includes a search bar, a legend, and a data table on the right side.

DESPLAÇAMENTS EN DIA FEINER, RUBÍ



NOMMON
orange™

- Zones interiors de Rubí**
- 1 Urbanitzacions Castellnou i Can Mir
 - 2 Urbanització Sant Mup
 - 3 Can Ximelis - Can Serrafossa - Sant Jordi Parc
 - 4 Can Fatjó - Els Avels - Pol. Cova Solera
 - 5 Can Vallhonrat - Ca n'Alzamora
 - 6 Les Torres - 25 Setembre - Centre
 - 7 Centre - Serreta - Biblioteca
 - 8 Zona Nord - Ca n'Oriol - Can Rosés - El Pinar
 - 9 Av. Olimpíades - Pols. Can Rosés i La Bastida
 - 10 Zona Polígon Can Sant Joan
- Zones exteriors**
- 11 Barcelona Ciutat
 - 12 Resta d'Àrea Metropolitana
 - 13 Resta de Catalunya
 - 14 Resta d'Espanya

Viatges

336 - 704	704 - 1068	1068 - 1139	1139 - 1628	1628 - 1988	1988 - 2920	2920 - 3691	3691 - 4786	4786 - 5773	5773 - 7613	7613 - 9021	9021 - 10384	10384 - 12258	12258 - 13943	13943 - 16205	16205 - 18471
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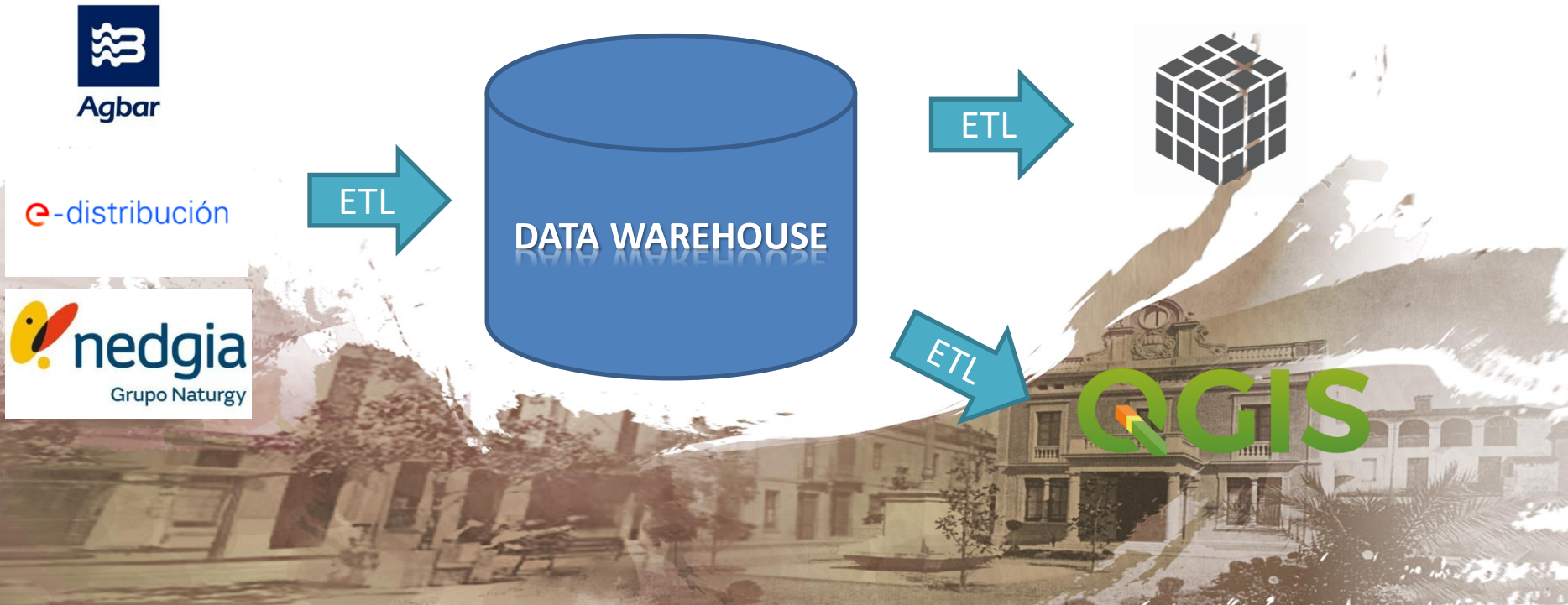


Realització: Rubí Brilla. Línia de Mobilitat Sostenible, a partir de dades de telefonia mòbil.
 Metodologia: Document "Contextualització.pdf", a www.rubi.cat/rubibrilla (secció Rubí Brilla Mobilitat)
 Autor: Jordi Salteras Alabau



II. SIEU. (internal) data integration processes

Carrega de les dades de consums



Establir formati protocol de carrega per cada distribuïdora i font externa

Integrant amb el *carrerer oficial* de l'Ajuntament, amb "*id d'accés*" (portal) podem obtenir dades relacionades d'altres BBDD

Carrega a un cub OLAP i a entorn GIS
Publicació Interna (BI i externa (Dades Obertes)



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our vision, in
**2030 climate and energy
policies context**



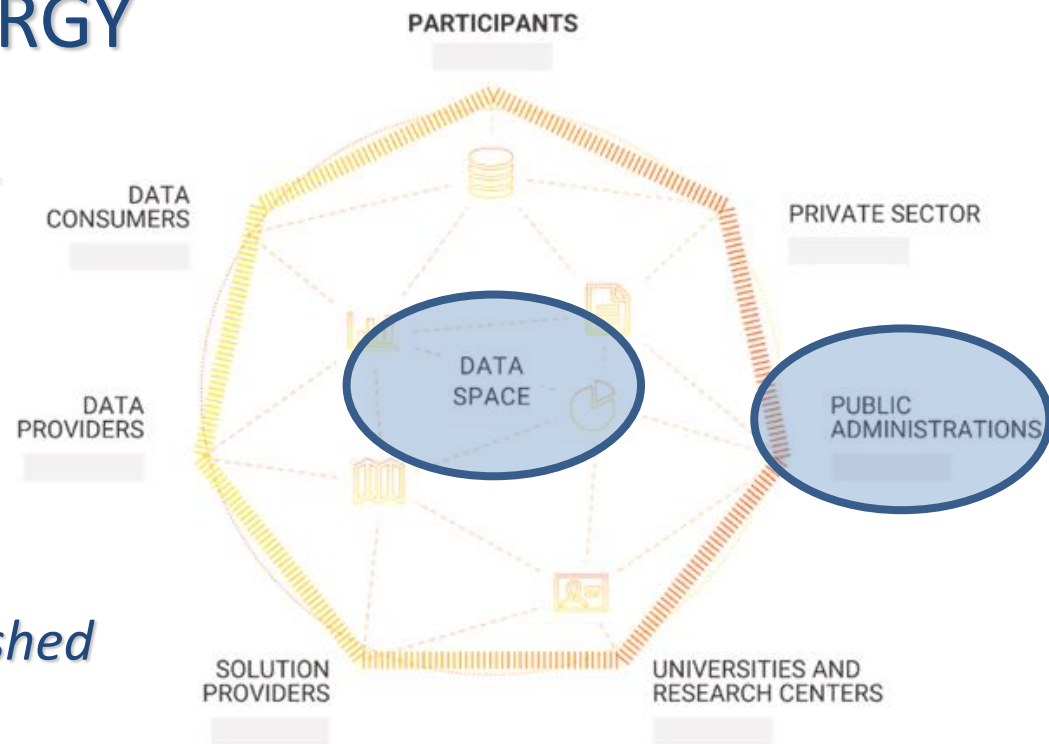
RUBÍ, CLIMATE AND ENERGY PUBLIC POLICY LAB

We do have...

- *Data*
- *Digital & IT infrastructure (DGO)*
- *Stakeholders relationship established*
- *(but most importantly) the vision*

... Can we become?...

URBAN LABORATORY for the development of a "data driven" energy and climate urban management and services for all



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DATA SPACES AS TOOL TO URBAN & PUBLIC MANAGEMENT

 BARCELONA

DatCity Lab

 BARCELONA

Rubi Brilla - Rubi City Council



DATA SPACE FOR
SMART AND SUSTAINABLE
CITIES AND COMMUNITIES

<https://inventory.ds4sscc.eu/collected-use-cases>

 RENNES

RUDI - Rennes Metropole



*Rubí Brilla practices
as use case at
European Data
Space for Smart
Communities
Blueprint (2023)*

Organisational		WHY	Data
<p>Key partners</p> <ul style="list-style-type: none"> Rubi City Council PSIG Pylon Data Edistribucion, Nedgia, and Agbar too (data donation: data per building block) CNMC (National Markets and Competition Commission) Citizens 	<p>Shared data flow</p> <p>Individual shared</p> <p>Use <input type="checkbox"/> <input type="checkbox"/></p> <p>Visualise <input type="checkbox"/> <input checked="" type="checkbox"/></p> <p>Interpret <input type="checkbox"/> <input checked="" type="checkbox"/></p> <p>Combine <input type="checkbox"/> <input checked="" type="checkbox"/></p> <p>Transform <input type="checkbox"/> <input type="checkbox"/></p> <p>Store <input type="checkbox"/> <input type="checkbox"/></p> <p>Create <input type="checkbox"/> <input type="checkbox"/></p>	<p>Context</p> <p>Rubi City council has committed to sustainable energy management as a long-term strategy. In this context, the city has developed Brilla which aims to reduce city energy consumption, accelerate the transition to renewable energy and empower citizens and companies to make meaningful and informed changes in terms of energy consumption.</p> <p>Added value data exchange</p> <ul style="list-style-type: none"> Inform Local Policy design and evaluation Provide Personalized services to individuals and collectives (energy communities) Opening (integrated data outputs) to citizens and stakeholders (market creation) and to society (creation of knowledge of general interest, generalization of knowledge) <p>Motivation & objectives</p> <p>The aim of the project is to combine energy data from different sources to reduce energy poverty, optimise energy consumption in the city and inform citizens about energy.</p>	<p>Data & data sources</p> <ul style="list-style-type: none"> Rubi city council: Geospatial data, Population register, Fiscal Registers (Real Estate Tax, Mechanical Traction Vehicle Tax). Electronic administrative files: Rehabilitation licences, photovoltaic installations. Datadis: Aggregated energy consumption per postcode; Power data: One record for each CUPS (Universal Supply Point Code) and month. Maximum power per month, day and hour of the maximum, demanded power; Consumption data: A record per CUPS per day & hour. Day, hour, kWh Individual smart meter data (Inform Consent for Access to Personal Data through Rubi Brilla website)
<p>Resources</p> <ul style="list-style-type: none"> Expertise from Rubi Brilla unit's technicians 			
<p>Business case</p> <p>Internal investment by the council. Rubi Brilla began more 10 years ago as a strategic project of the council. Technical work financed by EUCF (2022-23)(**) for the development of an innovative Investment Concept based on energy savings. "REFER" model.</p> <p>eDistribucion shares data following an altruistic model.</p> <p>Models: As a Service model (Data as a service, Software as a Service), Open Data, Data Donation (private sector), Personal Data Intermediary (citizen data)</p>			
<p>Governance model</p> <p>Led and coordinated by Rubi Brilla unit at council. Citizen participation: give consent to sharing their personal data and give feedback on data driven services.</p>	<p>Implementation model</p> <p>The city set up a GDPR-compliant interface to obtain citizens' individual consent to share their smart meter data with the municipality. The project is in operational stage with the platform and service in place and is being replicated in other local authorities in Spain.</p>		
<p>Current status</p> <p>What is the current status of the cooperation</p> <p>Exploratory stage Preparatory stage Implementation stage Operational stage Scaling stage</p>			



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City of Amsterdam / Braxwell.com

This work has been conceived as part of the preparatory actions for the Data Space for Smart and Sustainable Cities and Communities (DS4SSCC). The canvas was developed by Ron van der Lans and Jasper Spontendal of Braxwell.com in the role of external experts; strategic data partnerships of the Directorate Digitalization & Innovation of the City of Amsterdam and has been further developed with and validated by other participants of DS4SSCC working groups.



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GRÀCIES!

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