

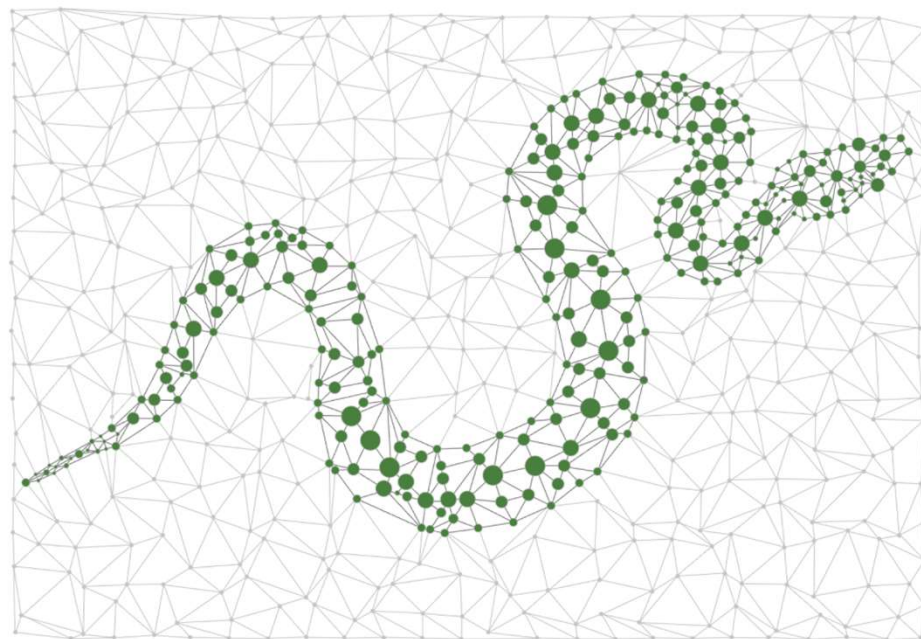


eFlower Demo
06.02.2023

<https://eflower.io>

The leading provider for
electricity impact data

WIDE COMPETENCES FOR THE ENERGY TRANSITION



In partnership with Pythonian

- IT developers
- Statisticians
- Meteorologists
- Hydrologists
- Power market experts

eFlower

OUR PRODUCTS



Timeseries Refinery

An Open Source data management platform to collect, clean, assemble time series, automate tasks and model calculations, calibration and backtesting.



Data Forecast

An API for B2B as a tool to access weather forecast, power price forecasts, marginal technology forecast and marginal CO₂ forecasts for demand response



CO₂ Electricity forecast

(Demonstrator)

A mobile APP to help B2C customers modify consumption behaviour

Timeseries Refinery



Speed-up your business development with data analysis



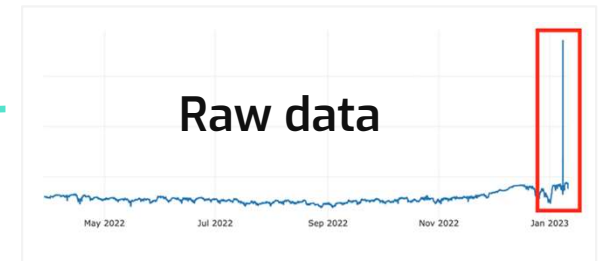
An Idea



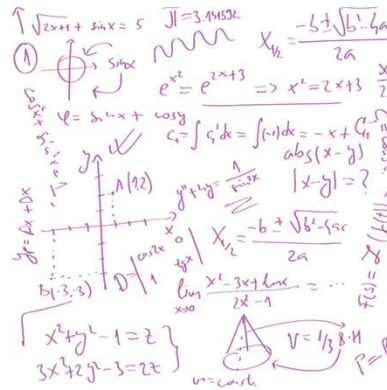
Identify inputs



Build connectors



Raw data



transformation



High value indicators

eFlower

Our Data Science Technology

Integrated in your own IT infrastructure to deal with your own versioned time series

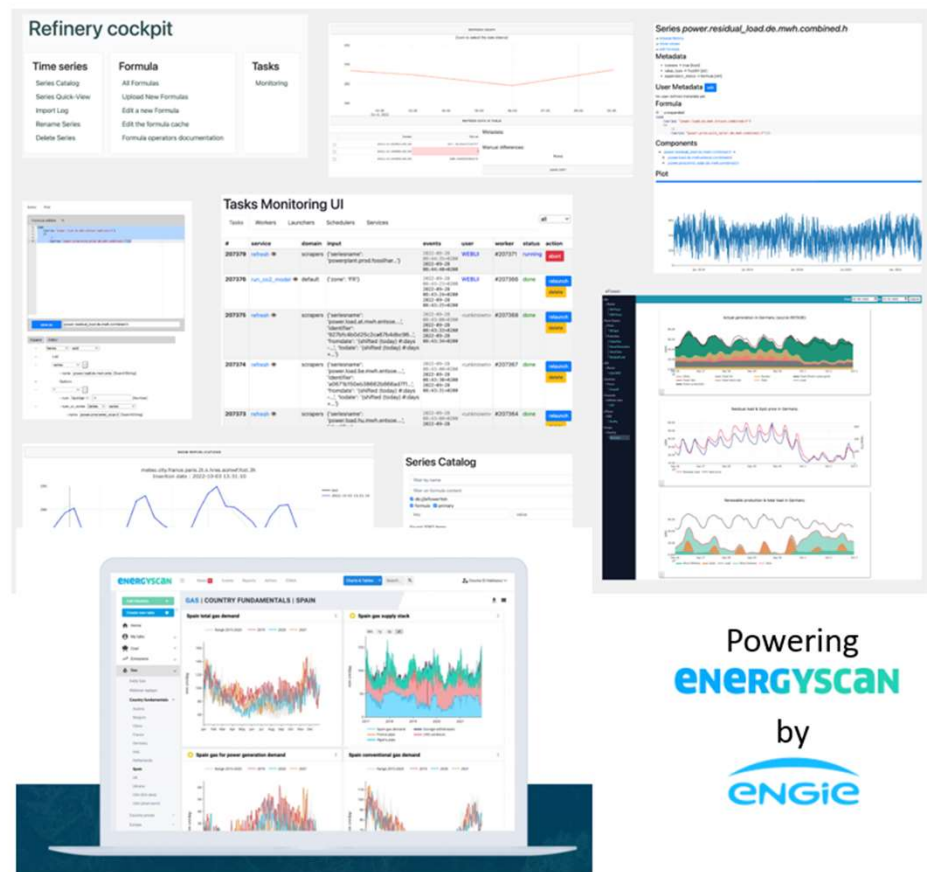
Acquire evolutive metering data together with our proprietary or open-source forecast

Run forecasting models for production & consumption

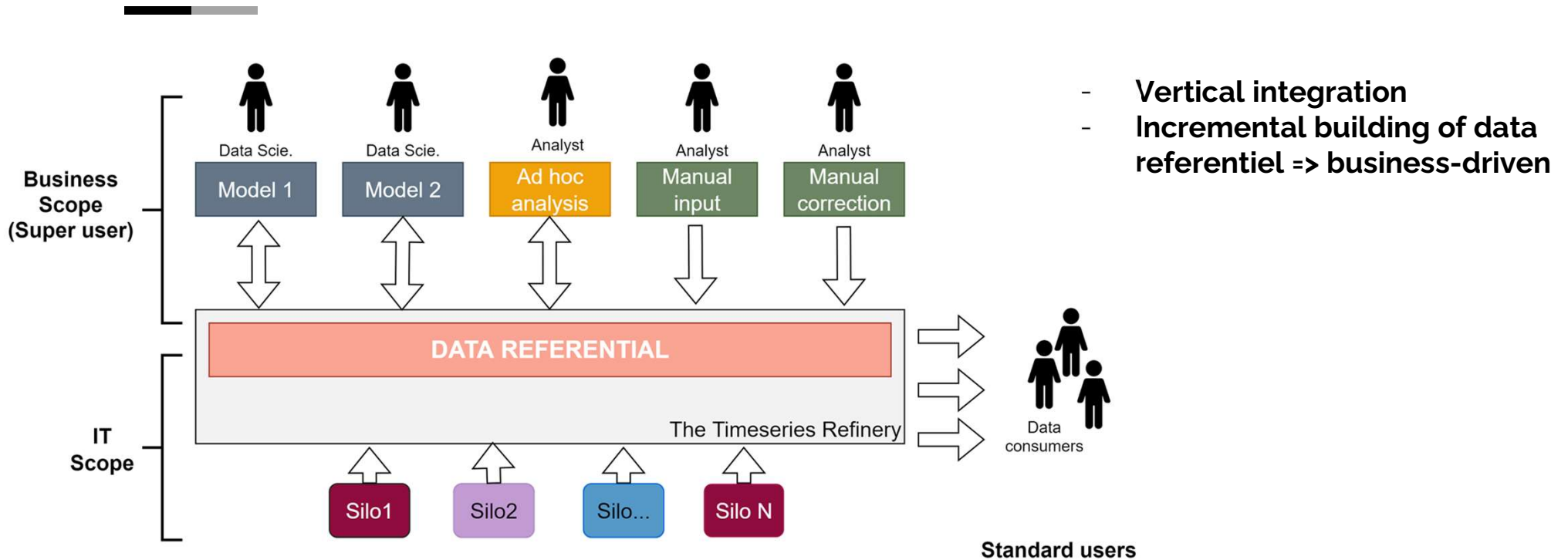
Share your high value-added insights with low code dashboards

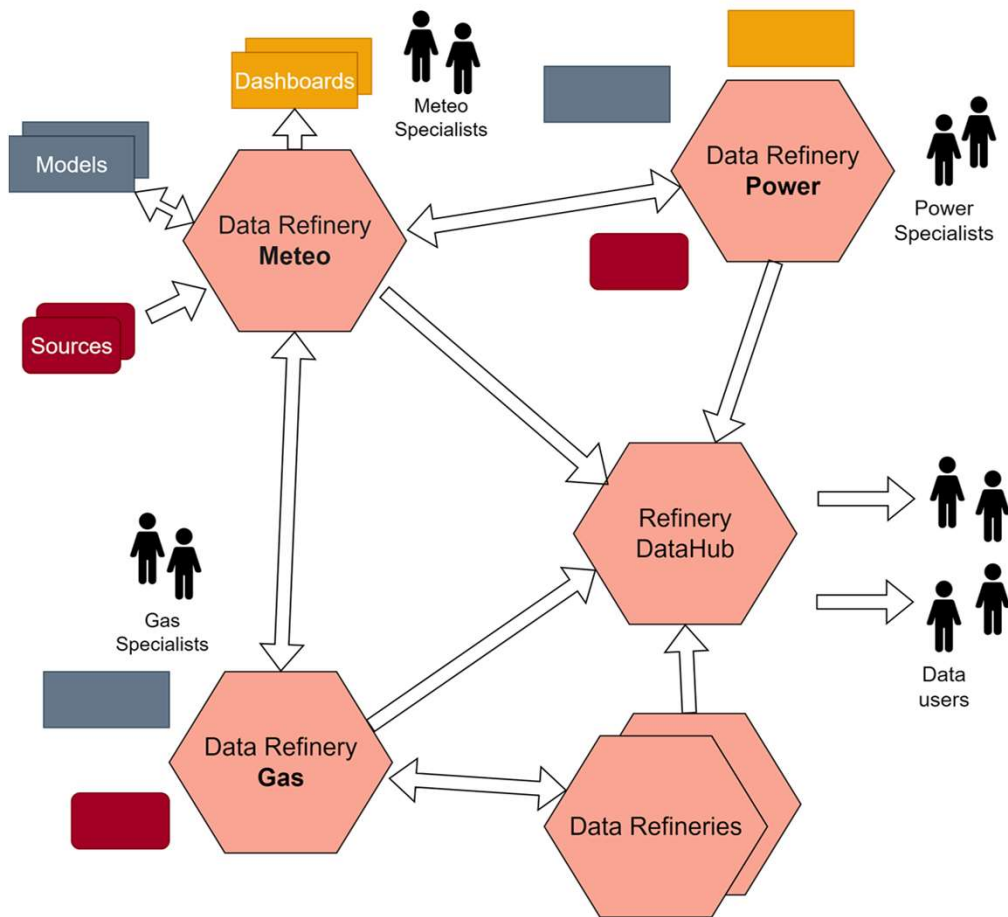
eFlower

The Timeseries Refinery : Open-Source Data Science Platform



Synergies between data experts enables to access new businesses





Horizontal integration => Data Mesh

Incremental scope growth

Emergent Data Governance Pattern

Specialisation

- IT - Business
- Among business specialists

The Timeseries Refinery

- Shared and collaborative **Data Referential**
 - Defined by specialist instead of ITs
- Business driven architecture
- Productivity tool (quantity & quality)
- Data quality tool (easy auditability and traceability of data sources)
- **Data Governance** tool
- Machine Learning framework: “*game changer*”
- Multi-scale
- Structured data with business driven APIs

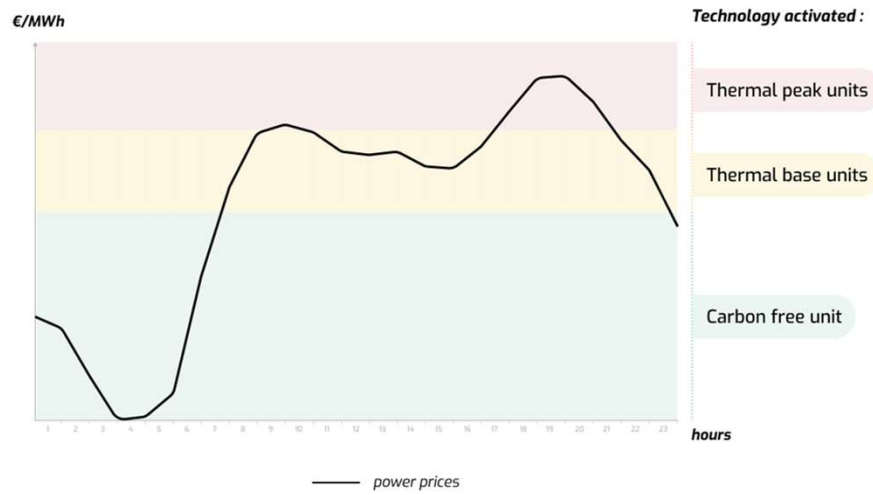
eFlower CO₂ emission forecast

WHY ?

AT THE HEART OF OUR SOLUTIONS, AN OBSERVATION :

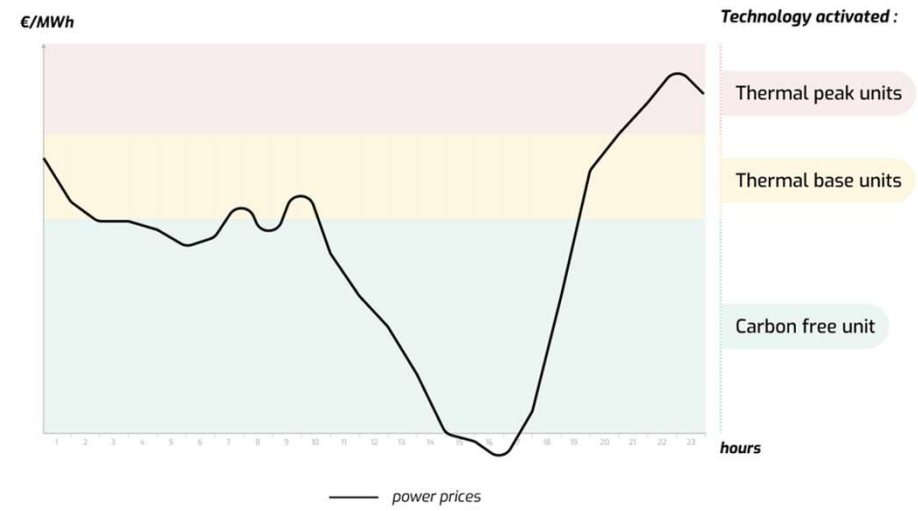
Wind & solar production have changed the game !

CO2 Forecast model



Before

CO2 Forecast model



Now

ECONOMICAL INCENTIVES HAVE LIMITS

1. End **consumers** are mostly **not exposed to dynamic pricing in EU**

*Classical **peak / off-peak pricing are obsolete** with increasing wind and solar production.*

2. Consumers **cannot manage highly volatile prices**, it **frightens**, lack of **pedagogy, technology, services & trust**.

3. The **majority of consumers are not exposed to prices at all !**

Ex :In households there is only 1 person responsible for the bill ... who generally doesn't even know his electricity cost

eFlower CO₂ emissions

B2C use case



A BUSINESS OPPORTUNITY

- High incentive in carbon reduction for behaviour changes.
- strong correlation between wholesale market prices and marginal CO₂ emissions.
- Methodology is « Dynamic Pricing » ready
- Consumers who modify their behavior are cheaper



ENGIE Trusts us

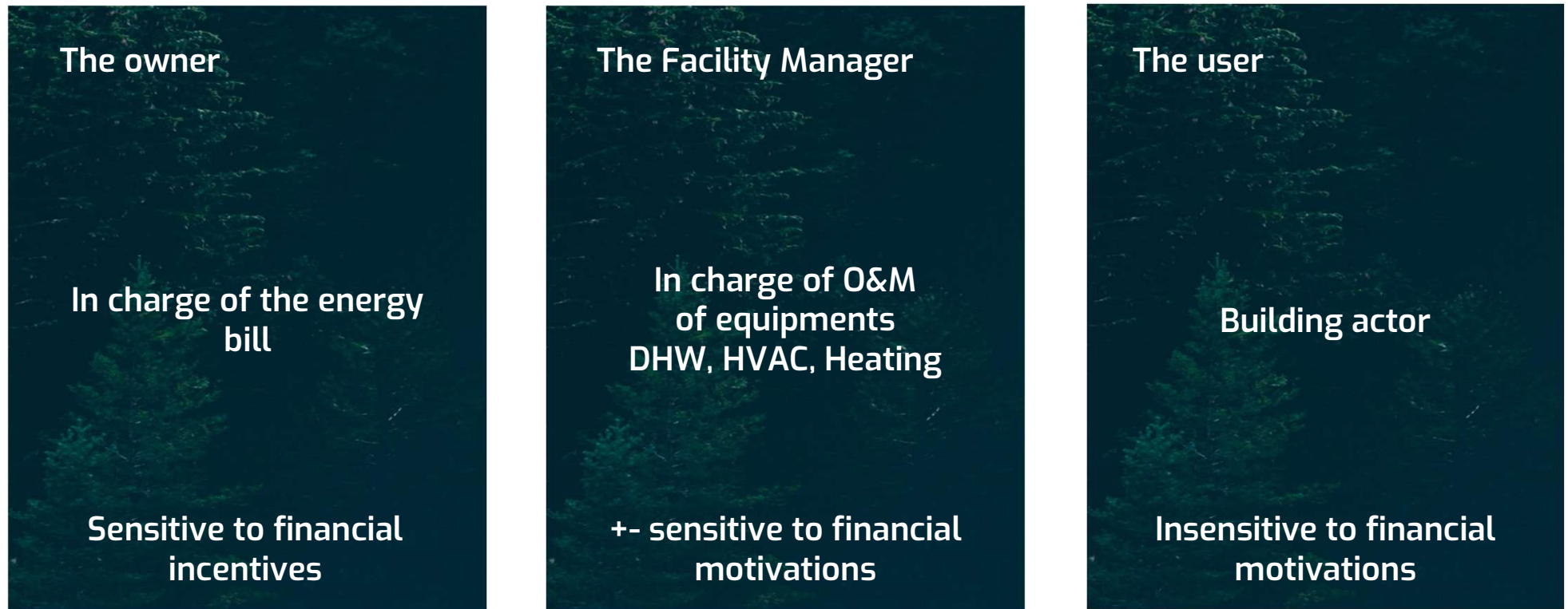
eFlower CO₂ emissions

B2B use case



BUILDINGS: A MULTILEVEL ECOSYSTEM

The environmental communication from eFlower aligns the interests of the whole ecosystem.



OPTIMIZING THE CONSUMPTION OF A COMPANY

Reference :

Company in Belgium

Study over 46 days

Consumption of 700 kWh on average (6GWh/year)

Equipped with solar panels

Wholesale power market price

Electric consumption

Estimated opportunity:

(Cal 24 @ 22/02/2023 = 133,85 €/MWh)

- 344 k€/year on an energy share of 1,1 M€/year

- 313 tons CO₂ / year on pillar B

Optimized electricity consumption

Prix élec marché																								
Moyenne de 24 Etiquettes de colonnes																								
Étiquettes de 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Moyenne générale	
11/05/2022	207	193	196	179	184	216	213	224	200	147	96	59	183	83	80	104	144	219	232	208	206	189	151	
12/05/2022	141	141	141	138	146	172	211	221	221	221	221	221	221	221	221	221	221	221	221	221	221	221	176	
13/05/2022	210	203	189	174	174	203	242	242	228	177	129	49	45	1	237	39	181	120	211	229	217	184	166	
14/05/2022	171	101	102	146	167	178	184	184	185	163	93	85	71	2	44	69	80	106	235	240	242	239	155	
15/05/2022	218	196	185	174	170	170	180	220	244	241	201	159	155	111	36	75	45	20	40	40	40	148	148	
16/05/2022	180	189	178	170	170	180	230	240	235	211	211	200	185	157	68	68	72	90	186	256	278	260	180	150
17/05/2022	203	196	189	185	189	207	237	245	242	242	242	242	242	242	242	242	242	242	242	242	242	242	200	
18/05/2022	268	186	176	174	170	180	220	244	241	201	159	155	111	36	75	45	20	40	40	40	148	148	203	
19/05/2022	187	185	178	178	185	222	256	256	256	256	256	256	256	256	256	256	256	256	256	256	256	256	209	
20/05/2022	211	196	186	186	200	231	260	250	248	205	157	150	185	189	190	178	205	221	221	218	205	160	151	
21/05/2022	136	113	108	108	108	108	111	140	150	154	124	108	94	98	92	127	151	146	101	119	128	104	136	
22/05/2022	187	179	170	170	167	167	160	150	138	138	134	150	101	101	101	133	157	195	213	226	228	201	166	
23/05/2022	176	165	159	158	158	173	205	220	230	231	231	231	231	231	231	231	231	231	231	231	231	231	191	
24/05/2022	161	183	183	183	184	184	189	230	207	198	177	141	151	138	138	158	144	188	233	240	240	240	171	
25/05/2022	195	180	178	178	178	211	230	212	187	134	114	113	112	110	116	116	116	116	116	116	116	116	159	
26/05/2022	188	19	11	16	11	71	40	60	77	40	60	77	40	60	77	40	60	77	40	60	77	40	51	
27/05/2022	17	26	19	14	44	84	93	127	74	67	3	0	-40	-47	-25	-14	3	-4	80	117	149	40	40	
28/05/2022	198	103	116	104	104	112	105	86	52	32	13	-2	-10	-19	59	118	64	113	156	164	164	79		
29/05/2022	179	118	118	140	140	141	138	138	140	140	140	145	141	141	133	133	133	133	133	133	133	159		
30/05/2022	204	185	185	186	186	211	258	261	231	210	205	211	208	201	202	211	226	241	291	298	268	228	226	
31/05/2022	200	183	187	178	186	196	220	240	241	230	188	191	184	173	182	182	200	235	247	253	248	228	228	
01/06/2022	200	207	189	181	188	189	200	250	246	229	211	207	189	189	190	200	220	252	258	261	260	235	235	
02/06/2022	191	175	180	166	166	170	210	221	188	170	156	147	148	155	147	151	217	237	239	238	217	184	184	
03/06/2022	178	163	167	160	160	170	200	205	164	158	153	153	152	156	159	158	160	169	171	171	171	166	166	
04/06/2022	196	168	167	156	156	160	180	174	161	116	92	1	-30	-25	124	157	135	135	139	169	163	144	144	
05/06/2022	180	143	121	110	127	127	134	134	141	144	134	134	132	132	150	183	169	169	166	160	160	160	67	
06/06/2022	109	89	83	88	86	90	75	84	83	86	79	47	-12	86	44	88	56	170	201	214	217	180	180	
07/06/2022	156	160	138	146	146	156	176	217	220	211	191	175	169	169	164	164	173	200	217	220	220	211	183	
08/06/2022	185	169	165	165	175	187	214	215	205	191	177	180	170	155	155	168	171	203	212	212	211	188	181	
09/06/2022	189	171	165	158	157	168	215	208	193	161	146	144	133	135	137	179	193	200	210	219	205	175	175	
10/06/2022	197	178	165	166	166	179	208	218	213	184	172	157	147	148	143	145	177	189	217	220	215	205	181	
11/06/2022	203	188	178	160	160	160	121	125	65	8	1	-15	-30	-47	-35	168	141	186	209	211	208	187	187	
12/06/2022	198	172	165	154	152	143	120	81	70	-10	-65	-7	-21	3	106	161	145	206	211	210	182	165		
13/06/2022	176	168	159	147	160	150	142	140	145	140	138	108	108	108	108	108	108	108	108	108	108	108	108	
14/06/2022	181	168	158	167	171	215	228	205	182	166	162	178	172	179	184	204	221	240	240	241	219	219	196	
15/06/2022	198	184	178	173	180	217	247	254	225	182	165	160	169	169	168	216	205	207	205	218	203	211	211	
16/06/2022	219	217	217	210	200	242	257	298	252	218	208	199	191	166	209	209	208	208	208	208	214	239	239	
17/06/2022	300	271	203	203	200	220	232	326	292	282	242	208	228	196	226	211	201	238	351	303	270	268	268	
18/06/2022	276	261	240	248	211	230	211	225	206	196	167	147	139	138	198	187	205	308	330	319	285	285	285	
19/06/2022	207	190	166	162	143	113	113	101	96	86	105	101	91	86	99	118	131	180	240	267	268	268	268	
20/06/2022	240	200	219	238	231	261	300	308	298	248	209	233	208	238	237	250	301	314	319	277	265	265	265	
21/06/2022	271	230	216	216	216	239	245	241	241	241	241	241	241	241	241	241	241	241	241	241	241	241	241	
22/06/2022	268	244	240	255	254	322	358	393	327	274	228	218	208	207	217	297	360	441	399	374	355	355	355	
23/06/2022	285	264	259	266	250	320	381	374	364	305	258	270	281	293	289	341	429	414	414	414	376	376	376	
24/06/2022	290	275	267	260	257	310	380	386	386	314	254	259	251	268	266	286	326	322	330	315	315	307	295	
25/06/2022	261	237	251	238	228	227	241	269	241	226	217	217	229	219	221	241	269	274	314	327	328	328	328	
Moyenne générale																							151	

Conso Elec Grid horaire																								
Somme de 24 Etiquettes de colonnes																								
Étiquettes de 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Total général	
11/05/2022	845	854	842	840	837	867	808	731	839	811	762	229	247	349	482	566	605	806	936	914	907	964	876	16594
12/05/2022	953	908	893	894	889	814	650	509	457	559	396	457	564	543	627	729	840	913	946	928	884	870	17115	1128
13/05/2022	970	873	899	864	894	810	677	558	499	441	318	311	418	382	644	8								

GEOGRAPHIC COVERAGE



Marginal CO₂ emission forecast for demand response across 12 countries in Europe

FR, BE, NL, DE, AT, DK, ES, IT, HU, CH, GR, PT

Power systems are screened daily by automatic algorithms to produce best forecast estimations of marginal CO₂ emissions

OUR VALUE PROPOSITIONS



eFlower's VALUE PROPOSITIONS

1 - Data Science / Management Open Source platform

Install, operate, maintain, the « Timeseries Refinery » in your own business environment

2 – Integrate additional Data Services

- CO₂ emission from power consumption designed to value and stimulate demand response
- DA Power price forecast
- Weather forecast and local PV production forecast.

3 - Data Enrichment and Reporting as a service

- Individual dashboards
- Consumer Financial Performance Indicators (Average captured price)
- Environmental consumption performance indicator. (Pillar B induced CO₂ reduction)

Why us?



Good for your clients

Highly empower their efforts with concrete feedback



Good for your business

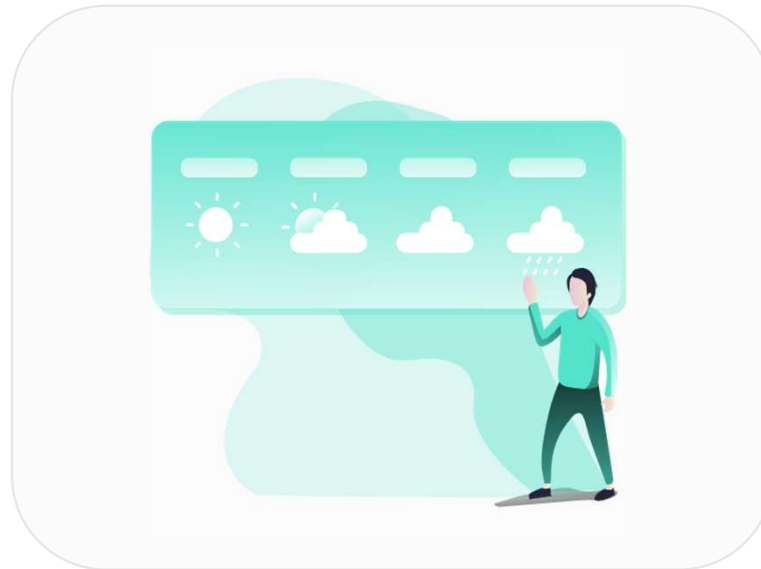
Improve your power sourcing and valorize the flexibility



Good for the planet

Onboard all the stakeholders behind a common goal

CONTACT



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<https://eflower.io>