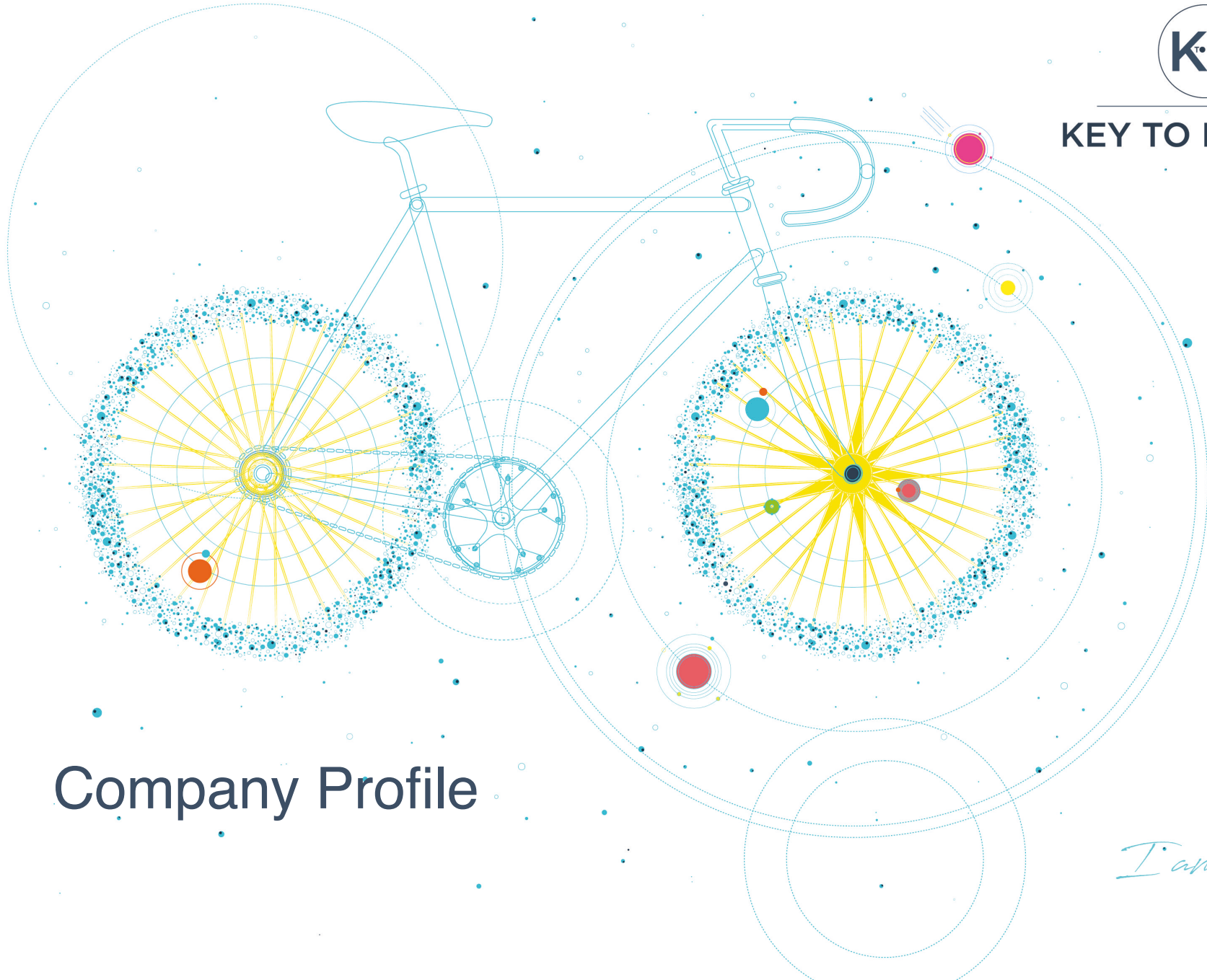




KEY TO ENERGY



Company Profile

I am energy

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AGENDA

1. KTE COMPANY PROFILE
2. KTE TOOLS FOR THE ENERGY TRANSITION
3. OUR TEAM



A leading consulting boutique with an unparalleled custom oriented approach, providing technical expertise, project solutions and operational services within all the energy business value chain

38.2%: 119.29

51.25%: 108.98

61.6%: 99.19

116.71

86.72

72.48

A multi-skilled team of experts with long lasting industrial experience within energy industry

I am Energy

OUR FRAMEWORK



PURPOSE

We provide leading solutions transferring knowledge and market insights as well as our long experience, built up within the main Companies active in the Energy Industry

MISSION

We design sustainable business and technical solutions in the Energy Industry

FIELDS

Energy Transition

Evolving Energy Markets

Energy modelling and data analytics

APPROACH

We have a unique mix of competences nurtured in the industry and we are all passionate in our field.

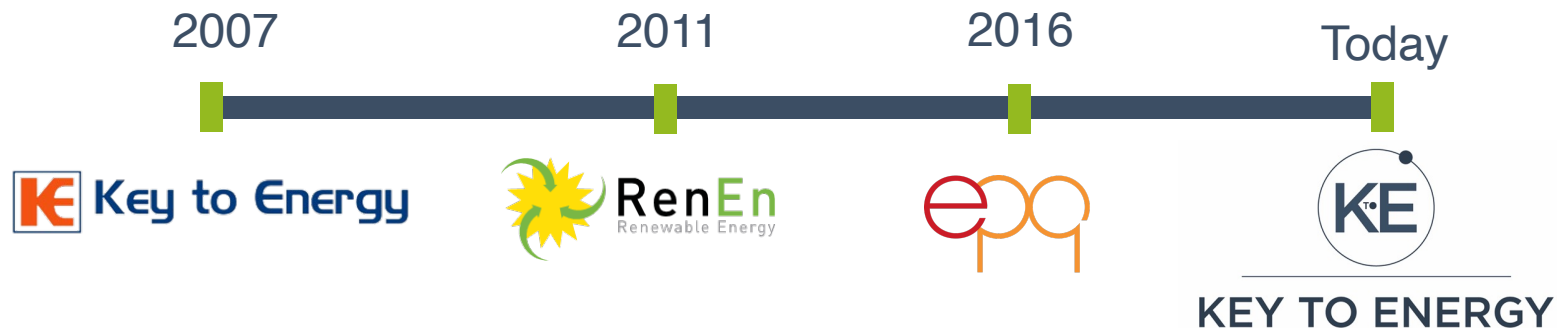
We share ideas and collaborate with our clients to seize new opportunities.

KEY TO ENERGY AT A GLANCE

A CONSULTING BOUTIQUE WITH A 'GLOCAL' APPROACH



- Our journey began in **2007** when **Key to Energy** was founded focusing on Energy Management consulting services. Today **Key To Energy** is a leading consulting “boutique” focused on the energy industry, with high expertise in the power, gas and renewable sectors.
- In 2011 **RenEn** was acquired by Key to Energy to add **engineering and technical services** to complete the portfolio solutions.
- In 2016 Key To Energy co-founded EPQ, a company with a strong background in **big energy end-user portfolio management, distributed generation, energy efficiency solutions and flexibility services**.



KEY TO ENERGY AT A GLANCE

KEY FIGURES



No. Of professionals **70**

Approx. Annual turnover **€ 15 m**

No. Project accomplished **>600**

Main energy companies where our 'fully fledged' people come from:



4 Offices in Italy:
Rome (HQ) and
Genoa, Milan, Verone



Team composed by skilled **energy managers, traders and engineers** specialised in power & gas and financial sectors with solid and unique background in the industry.

KEY TO ENERGY AT A GLANCE

OUR DISTINCTIVE VALUE PROPOSITION



Key to Energy helps clients to achieve challenging goals and find new business opportunity driving them through the Energy Transition

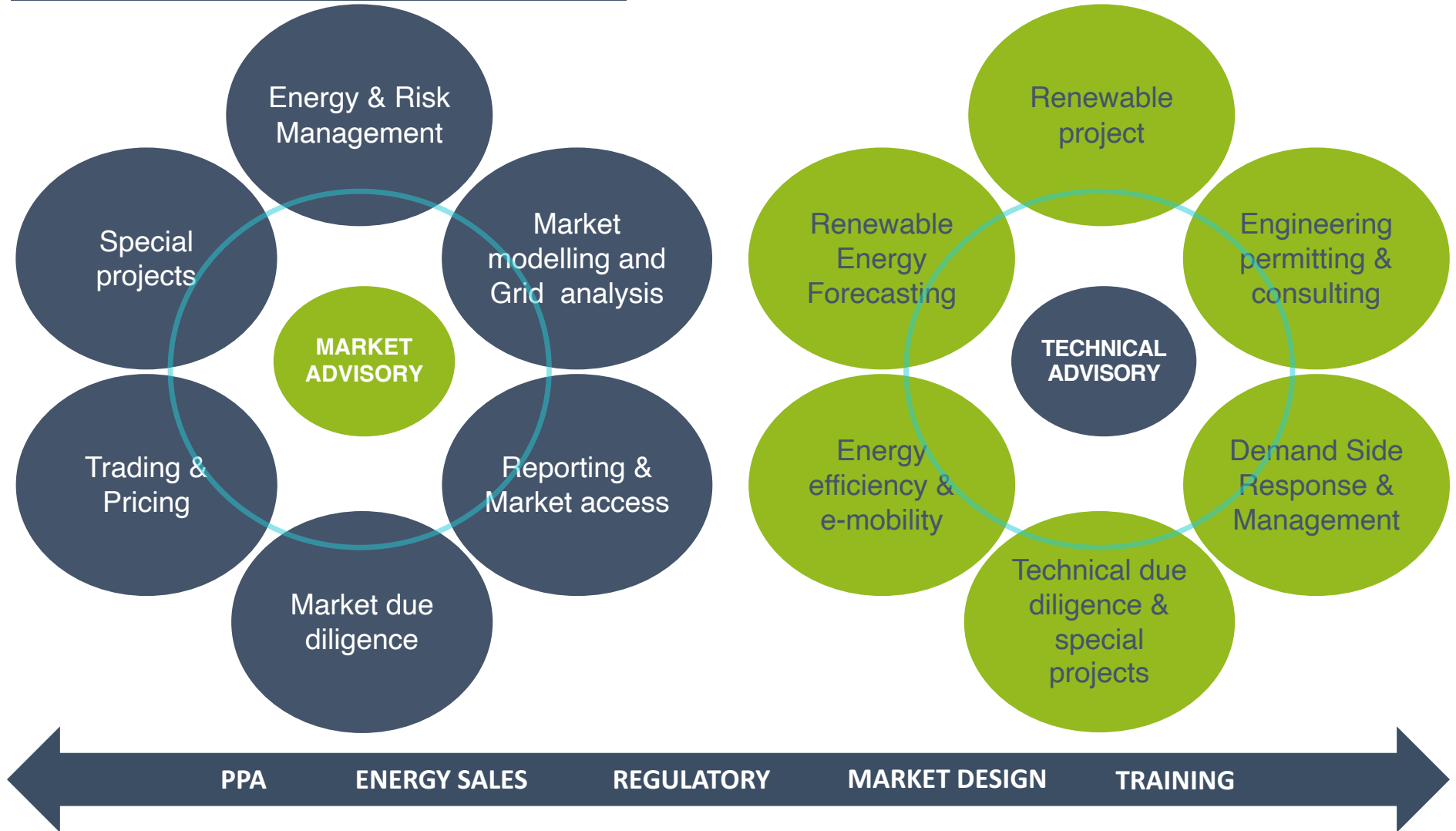
Our clients are:

- Market Operators
- Consumers and Consortia
- Institutional
- Investors
- Banks and Insurance companies
- TSOs and DSOs
- Utilities
- Industrials



KEY TO ENERGY AT A GLANCE

KEY SERVICES - OVERVIEW



KEY TO ENERGY AT A GLANCE

KEY SERVICES - DETAILS



Energy & Risk Management

- Portfolio strategy
- Growth strategies
- Business strategies and business plans
- Business model development
- Scenario analysis
- Dispatching & Market Access
- Risk management
- Environmental strategies
- Market entry strategies



Resource and Technology Strategies

- Resource base valuations and development
- Technology mapping
- Technology benchmarking
- Operational and organizational Organizational design
- Technology options evaluation
- Technology strategies
- R&D portfolio strategies
- Technology acquisitions



Technical Advisory

- Renewable project development/permitting
- Renewable energy forecasting
- O&M monitoring and strategies
- Private Grid configuration (CDS)
- Energy efficiency, hydrogen & e-mobility
- Technical due diligence
- Plant services
- Storage
- DSR/DSM
- Distributed generation / prosumer



Market modelling and Grid analysis

- Market analysis
- Market forecasts
- Demand, supply, and cost analysis
- Price projections
- Industry cost curves
- Market design and modeling
- Market regulatory frameworks
- Market scenarios
- Grid analysis



Trading & Pricing

- Supply/market analysis
- Pricing strategies
- Contract negotiations
- Supply chain optimization
- Sourcing strategy formulation
- Bidding strategies
- Grid services



Market due diligence

- Acquisitions
- Divestments
- Asset valuations
- Business valuations
- Project pre-feasibility / feasibility assessments
- Due Diligence (strategy, business, technical)
- Business valuation vs. Asset valuations

KEY TO ENERGY AT A GLANCE

KEY CREDENTIALS



In the last 10 years we have worked on...

Long-term forecasting & business plans	30 projects	24,000 MW	73,000 GWh
Market advisory & training	80 projects	15,000 MW	34,000 GWh
Portfolio & risk management	160 years of consulting	5,500 MW	76,000 GWh
Reporting	130 accounts		
Short-term forecasting	90 projects	29,000 MW	57,000 GWh
Technical advisory	90 projects	4,000 MW	10,000 GWh

A blurred background image showing two people in business attire shaking hands, symbolizing a partnership or agreement.

€ 12 bn
Investments

MAIN CLIENTS

1/3



MAIN CLIENTS

2/3



MAIN CLIENTS

3/3





KTE TOOLS FOR THE ENERGY TRANSITION

EUROPEAN ENERGY TRANSITION

RENEWABLES



Renewable growth,
exposed to volatile
markets

STORAGE



Upcoming **storage** wave,
based on new market
schemes and revenue
stacking approach

GAS



Need for programmable
gas resources, backed
by LT contracts and new
market and regulatory

REGULATORY

TODAY'S ENERGY TRANSITION

RENEWABLES



From the old incentive-based scheme

- Significant **incentives** are offered to renewable power plants
- These incentives represent a large portion of **revenues and profitability**
- This in turn **sharply reduces the risk profile** for the bank providing the debt:
 - Revenues and cash flows are more stable
 - Debt service capacity is enhanced
 - Easier to determine capital structure and debt covenants
 - Public backing on the incentives

To today's market-based remuneration

- **Near-absence of incentives** means renewable power plants have to capture revenues from the energy markets
- This **deteriorates the risk position** of debt providers
 - Volatility of revenues and cash flows is much greater; renewable power plants are not shielded from market instability any longer
 - Long-term PPAs are still rare in several European markets
 - Counterparty risk becomes a material aspect

Renewables today are fully exposed to market volatility. Energy operators need to stay always on top of market trends and directions

TODAY'S ENERGY TRANSITION

GAS AND STORAGE



New storage (mainly electro-chemical)

- A strong increase in renewables requires a **widespread installation of new storage facilities**
- Historically, storage services have been delivered through pumped-storage hydroelectric plants
- However, new pumped-storage plants are not environmentally friendly and opportunities are very scarce
- **New technologies for electro-chemical storage** are rapidly maturing and coming to market
- **New storage facilities (across all technologies) are a key element of the transition**

New programmable gas resources

- **New storage will not be available soon enough** for the ongoing increase in renewables
 - Renewables are reducing the use of programmable fossil plants that provide essential services (besides energy)
 - Electro-chemical storage technologies are not yet commercially available to be rolled out at grid scale
- **A transition period is necessary**, where energy is provided by renewables, when available, but balancing and backup are still required
- Gas is the cleanest technology that can provide this **inevitable bridge role to achieve the energy transition**

Gas and storage are essential resources to enable the energy transition in Europe.

TODAY'S ENERGY TRANSITION

REGULATORY



Policy and regulatory analysis on energy markets is essential in the ongoing transition, as well as assessing impacts of evolutions on operators

Electricity markets

- Spot and long-term market rules
- IPP frameworks and PPA agreements
- Interconnection management rules
- Trade platforms
- Retail market deregulation
- Policy/regulatory issues
- Tariffs models

Gas markets

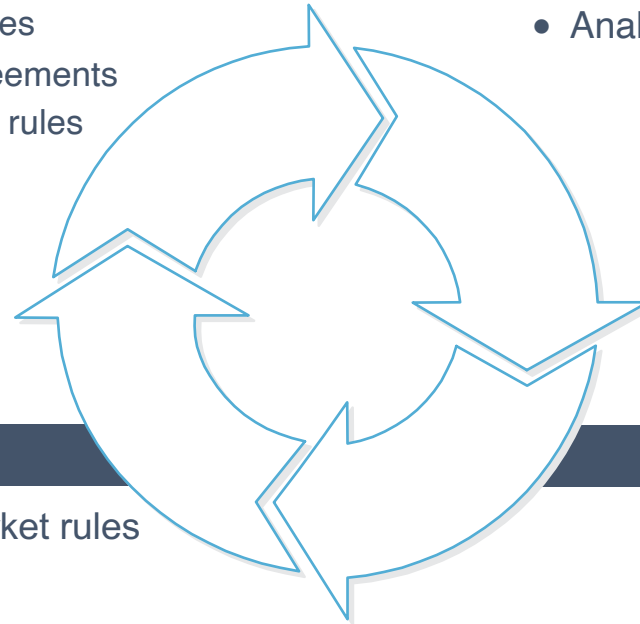
- Analysis and creation of market rules, e.g. capacity allocation
- Retail market/deregulation policy/regulatory issues

Carbon market

- Policy support to define market rules
- Carbon price projections
- Carbon strategy

RES and EE markets

- RES polices and incentives
- RES integration in the markets
 - Energy efficiency policy
- Implications of smart grids and smart energy



THE SOLUTION: DEEP MARKET INSIGHT



Energy markets can present numerous challenges and risks without proper know-how and experience

Key to Energy can provide two key tools for achieving proper market insight every day

Real-time market data, News, Analyses, Regulatory.

All in one user-friendly platform



Deep-dive simulations, Long-term market view, Scenarios.

Merging market and network points of view



K4VIEW – WHAT IS

MARKET



Key to Energy in 2015 launched its new information portal

K4VIEW is an innovative consulting platform created for Power & Gas market operators, designed to **share the information** in the companies in a uniform, simple and intuitive way

- A view on the European markets with live prices and main market drivers
- Live quotations of the main underlying assets (es. Brent, currency exchange,..)

K4VIEW is a cross tool useful for all company functions (i.e. trading, portfolio management, production, regulatory, control) and cross commodity

K4VIEW is a single repository of shared data that is always available and accessible in real time

K4VIEW provide editorial section with real time updates from the market, analysis and alerting on breaking news and a Regulatory Update Section

WHO CHOSE K4VIEW



BETWEEN THE MANY CUSTOMERS WHO HAVE CHOSEN K4VIEW AS A REAL TIME UPDATE TOOL AND DATA REPOSITORY SAFE ...

○ ARERA

○ ACQUIRENTE UNICO

○ SNAM RETE GAS

○ ENEL

○ ACEA

○ SIRAM

○ AXPO

○ EP PRODUZIONE

○ TIRRENO POWER



K4VIEW

SAMPLE SCREENSHOTS

carlo occhiena

- Italy Spot Market
- Forward Market
- Market Driver
 - Italy Short-Term Power
 - France Short-Term Power
 - Germany Short-Term Power
 - Italy Natural Gas
 - EU Natural Gas
- Forecast Model
- Tools
- Custom Report

Contact
Privacy Policy

powered by

Custom Report / Custom Report

MI - Power MI: Prices (hourly) Chart

EUWF - Historical Temperature (daily average)

ITACFP - Historical Load and MGP Demand (daily total)

RTFMEEEX - Power Live Prices Grid

Period	ITALY BASE			ITALY PEAK			FRANCE BASE			FRANCE PEAK			GERMANY BASE			GERMANY PEAK			SPAIN BASE			
	Bid	Ask	Trade	Bid	Ask	Trade	Bid	Ask	Trade	Bid	Ask	Trade	Bid	Ask	Trade	Bid	Ask	Trade	Bid	Ask	Trade	
Sat2021-07-03			98.50				73.80	76.05					80.00	84.00	85.25							
Sun2021-07-04	93.00		94.00				91.65	93.85					95.80	97.24	96.00	70.50						
Mon2021-07-05													82.00	93.00								
Tue2021-07-06													86.40	86.79	86.15	93.08	96.08		98.50			
Aug-21	102.90	103.90	102.50	101.50	108.00		85.00	86.19	85.76				86.75	88.00	86.50	92.59	96.59				110.00	
Sep-21	102.75	104.00		105.25	112.50		88.35	91.00					86.61	88.35	86.50	95.49	99.49					
Oct-21																						
Nov-21																						
Q421	103.50	106.45	103.50	112.50	118.95		100.95	103.25	100.10				89.25	89.45	89.25	103.13	106.13	103.35	99.00	101.00		
Q122	97.30			106.50			96.65	99.45	99.50				87.65	88.75	87.75	100.75	102.75				95.00	
Q222	71.00	73.50		74.25	81.25		61.95	63.50				66.70	67.40	66.70	72.60	74.80						
Q322	73.50	77.00		74.50			63.25	64.95				68.50	69.93	68.15	74.27	78.27						
2022	81.05	81.75	81.60	87.25	89.00		74.86	76.20		86.75		73.75	73.90	73.95	85.15	85.95	84.90					
2023	68.55	68.85	68.80	70.80	76.75			63.80				64.90	65.15	65.05	75.60	76.50		54.30				

alendar 09:00 DE EUA Primary Auctions; Act. 57,11 €/t... Consumption Forecast IT - 02/07/2021 - Trend: Il Load Terna previsto per i prossimi giorni risulta essere in rialzo rispetto al...

carlo occhiena

- Italy Spot Market
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powered by Artesian

Market Driver / Italy Natural Gas

Transported Gas Balance Chart

Stoigt Shippers' Stock Levels - Daily User Storage Chart

LNG Operational Data Chart

MARKET HIGHLIGHTS

REGULATORY UPDATES

RICERCA AVANZATA

ARERA – Entrata in vigore del nuovo Codice di Condotta Commerciale

📅 JULY 01, 2021

Il nuovo Codice di Condotta Commerciale, approvato con la deliberazione 426/2020, entra in vigore a partire dal 1 luglio 2021...

LNG ADRIATIC – Semplificazione Tariffe per Servizi Marittimi 1 luglio – 31 dicembre

📅 JUNE 30, 2021

Adriatic LNG ha semplificato le tariffe per i servizi marittimi per il periodo 1 luglio – 31 dicembre 2021 per...

ARERA – Consultazione su Disposizioni Obblighi Informativi Venditori Elettricità e Gas

📅 JUNE 30, 2021

L'ARERA ha pubblicato, nell'ambito del processo aperto dalla Delibera 259/2021, il documento di consultazione 260/2021 dedicato alle "Disposizioni sugli obblighi..."

ARERA – Consultazione Smart Metering Gas

📅 JUNE 29, 2021

L'ARERA ha pubblicato il documento per la consultazione "Smart Metering Gas: Regolazione degli output e della performance del servizio di..."

TERNA – Procedura Approvvigionamento a Termine Risorse Dispacciamento per UVAM

📅 JUNE 29, 2021

Terna ha reso noti gli esiti dell'assegnazione tramite procedure di appalto per la fornitura di energia elettrica a...

endar 09:00 DE EUA Primary Auctions; Act. 57,11 €/t... Consumption Forecast IT – 02/07/2021 - Trend: Il Load Terna previsto per i prossimi giorni risulta essere in rialzo rispetto al...

K4VIEW

FORWARD MARKET CURVES

Product: Italy	2021									2022			2023		
€/Mwh	Base	Peak	OffPeak	Base	Peak	OffPeak	Base	Peak	OffPeak	Base	Peak	OffPeak			
Month															
Jan	60.71	72.42	54.72	300.99	343.30	279.32	184.81	217.96	166.58						
Feb	56.57	67.44	50.54	302.40	341.79	280.52	172.58	199.15	157.82						
Mar	60.39	64.57	57.92	269.00	303.78	248.45	165.32	186.37	152.88						
Apr	68.02	73.18	66.61	197.96	213.15	189.78	101.02	108.31	97.37						
May	68.91	75.27	67.16	177.48	192.28	169.35	98.61	106.55	93.93						
Jun	84.80	90.80	81.32	176.77	191.53	168.23	97.50	106.25	92.43						
Jul	102.66	111.31	97.90	181.69	199.98	172.33	101.75	111.94	96.54						
Aug	112.40	118.44	109.07	186.13	204.89	175.06	104.43	113.06	99.33						
Sep	158.59	169.95	152.01	185.26	203.96	174.43	107.56	120.38	100.66						
Oct	217.63	242.93	204.69	193.66	226.83	176.71	113.38	129.51	104.53						
Nov	225.95	265.03	203.33	196.10	229.72	176.63	113.64	135.58	100.94						
Dec	279.07	328.65	249.83	192.30	225.35	174.13	112.05	131.86	101.90						
Quarter															
Q1	59.31	68.04	54.49	290.42	328.62	269.33	174.30	200.99	159.20						
Q2	74.52	79.82	71.58	184.00	198.77	175.79	99.04	106.99	94.62						
Q3	124.18	133.23	119.11	184.35	203.02	173.91	104.55	115.06	98.80						
Q4	241.03	280.17	219.16	194.00	227.31	175.82	113.02	132.33	102.48						
Year															
Y	125.28	141.10	116.47	212.84	238.95	198.40	122.50	138.84	113.46						

Product: PSV	€/MWh			2021			2022			2023		
Month												
Jan				20.34			120.80			74.09		
Feb				18.25			119.95			70.03		
Mar				18.24			111.65			68.00		
Apr				21.42			81.85			35.61		
May				25.52			71.38			34.11		
Jun				27.90			69.46			31.96		
Jul				35.35			70.72			32.00		
Aug				42.24			72.45			32.89		
Sep				62.12			72.56			35.07		
Oct				90.34			72.70			36.28		
Nov				80.23			74.50			37.02		
Dec				110.95			74.62			38.18		
Quarter												
Q1				18.97			117.38			70.73		
Q2				24.95			74.20			33.89		
Q3				46.40			71.90			33.30		
Q4				93.99			73.93			37.16		
Seasons												
Winter Y-1				16.73			105.56			72.35		
Summer Y				35.74			73.04			33.60		
Year												
GY Y-1/Y				26.26			89.26			52.92		

* Spark Spread Grid	IT-PSV								
Report Date: 2021-12-14T13:41:00	2021			2022			2023		
€/Mwh	Base	Peak	OffPeak	Base	Peak	OffPeak	Base	Peak	OffPeak
Month									
Jan	20.03	31.74	14.04	59.39	101.70	37.72	36.63	69.78	18.40
Feb	20.07	30.94	14.04	62.50	101.89	40.62	32.52	59.09	17.76
Mar	23.91	28.09	21.44	45.70	80.48	25.15	29.32	50.37	16.88
Apr	26.18	30.34	23.77	34.26	49.45	26.08	29.80	37.09	26.15
May	18.87	24.23	16.12	34.72	49.52	26.59	30.39	38.33	25.71
Jun	29.00	35.00	25.52	37.85	52.61	29.31	33.58	42.33	28.51
Jul	31.96	40.61	27.20	40.25	58.54	30.89	37.75	47.94	32.54
Aug	27.92	33.96	24.59	41.23	59.99	30.16	38.65	47.28	33.55
Sep	34.35	45.71	27.77	40.14	58.84	29.31	37.42	50.24	30.52
Oct	36.95	62.25	24.01	48.26	81.43	31.31	40.82	56.95	31.97
Nov	65.49	104.57	42.87	47.10	80.72	27.63	39.60	61.54	26.90
Dec	57.17	106.75	27.93	43.06	76.11	24.89	35.69	55.50	25.54
Quarter									
Q1	21.37	30.10	16.55	55.66	93.86	34.57	32.84	59.53	17.74
Q2	24.62	29.92	21.68	35.60	50.37	27.39	31.26	39.21	26.84
Q3	34.38	40.43	26.34	40.65	60.22	20.44	27.05	49.46	23.20

Aggregated Time Spread Grid	Base		
Report Date: 2021-12-30T14:31:00	€/MWh	Base	Spread
Month			
Jan22 - Feb22			M+1 - M+2
Feb22 - Mar22			M+2 - M+3
Mar22 - Apr22			M+3 - M+4
Apr22 - May22			M+4 - M+5
Quarter			
Q122 - Q222			Q+1 - Q+2
Q222 - Q322			Q+2 - Q+3
Q322 - Q422			Q+3 - Q+4
Q422 - Q123			Q+4 - Q+5
Year			
2021 - 2022			Y - Y+1
2022 - 2023			Y+1 - Y+2

TERNA – Esiti asta interrompibilità 2022 - Tema ha pubblicato gli esiti dell'assegnazione del servizio di interrompibilità istantanea...

Brent 1L (\$/bbl) 79,0 -0,9% | Co

K4VIEW

RENEWABLES LONG TERM FORECAST

Francesca Egidi

- Italy Spot Market
- Spain Spot Market
- Forward Market
- Market Driver
- Forecast Model
 - Italy Renewable Forecast
 - Italy Consumption Forecast Power
 - Spain Renewable Forecast
 - EU Weather Forecast
 - Italy Long Term Forecast
- Tools
- Custom Report
- Artesian
- Contact
- Privacy Policy

powered by

Forecast Model / Long Term Forecast

* Long Term (Wind&PV) Forward Market Grid

Report Date: 2021-12-14

	2022-2026	2022-2031	2022-2036
Energy: PV			
NORD	109.19	89.15	83.05
CNOR	109.80	89.45	82.22
CSUD	110.01	89.75	82.65
SUD	109.38	89.02	81.67
SICI	110.16	89.45	81.97
SARD	103.91	86.10	79.46
CALA	108.83	88.71	81.43
ITA	109.23	89.13	82.38

* Historical Monthly Load Factor Chart

NORD

* Historical Yearly Profile cost Chart

* Historical Monthly Profile Cost Chart

SUD

* Long Term Imbalance cost Chart

ZONE: NORD, SELECTED ENERGY: PV, PREVIOUS YEARS: 1

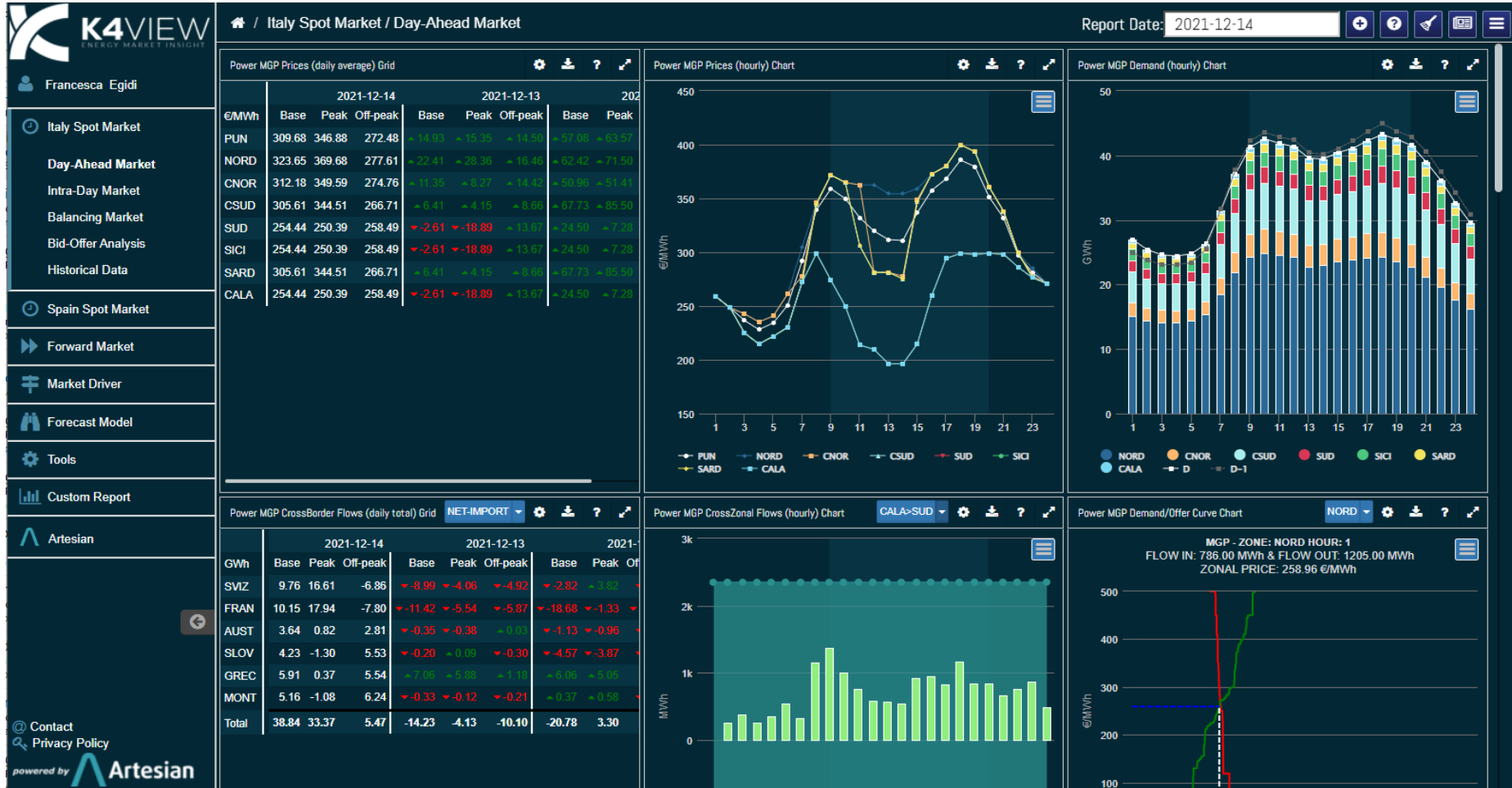
la pressione sub-tropicale inghiottirà l'Italia. Inizierà un peri...

Economic Calendar – 31/12/2021 - Time (CET) Country Macroeconomic Calendar All Day Germany – New Year's Day; All Day Italy...

Power

K4VIEW

SAMPLE SCREENSHOTS



K4VIEW

SAMPLE SCREENSHOTS



KEY TO ENERGY'S SIMULATION TOOLS



- Plexos is the most advanced market simulation tool
- Performs hourly simulations of interconnected power markets in multiple countries
- Considers detailed technical constraints of power plants when optimizing dispatch and developments in networks and grid elements
- Short & long-term horizon allows to produce granular, detailed simulations to 2050
- Key to Energy has the best input database available on the market



- PowerFactory is the leading electrical network simulation tool
- Detailed electrical transmission grid database, including the specific characteristics of power-generating units
- Implementation of market scenarios in a physical environment through Plexos-to-PowerFactory Python-based communication
- Operational security and safety evaluation, steady state and short circuit analyses
- Steady-state load flow analysis in normal conditions and under contingency events (e.g. line fault, loss of generation, load or HVDC connections, etc.)
- Short circuit analysis and evaluation of short circuit power levels on grid nodes
- Currently focused only on the Italian grid, actual and forecast topology (2030)

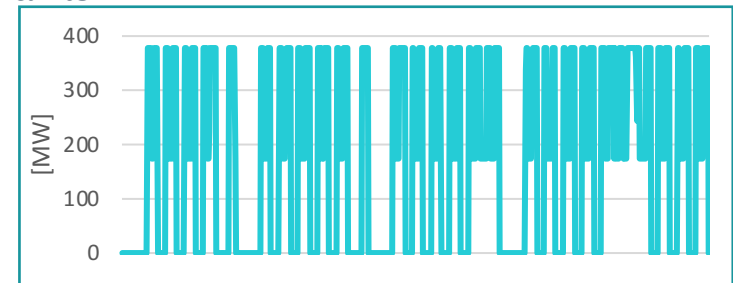
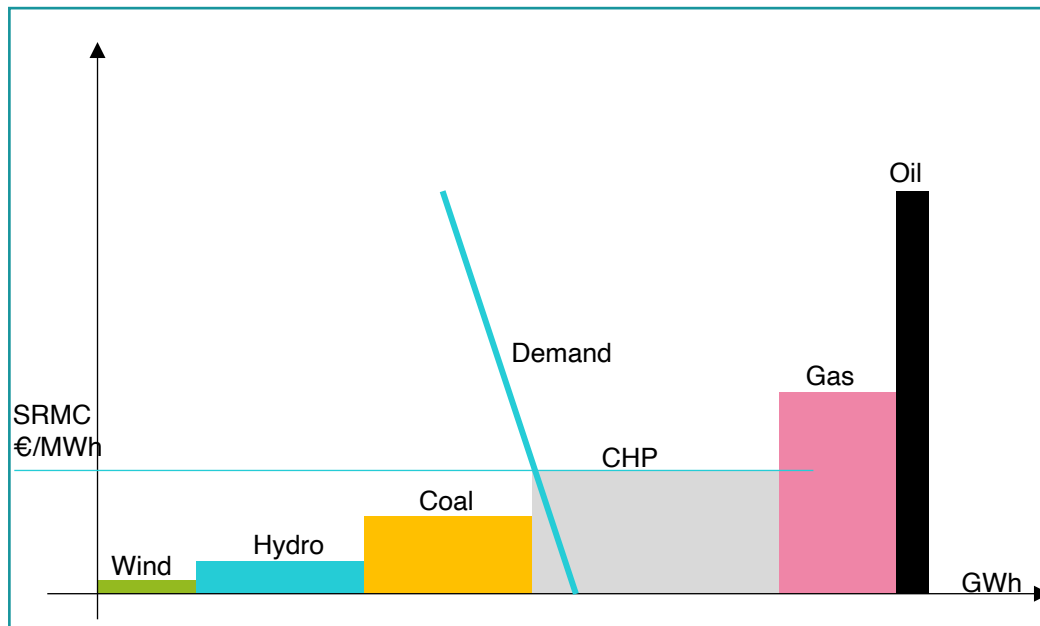
Key to Energy employs the leading simulation tools, complementing its market view with physical network analyses

PLEXOS

ENERGY MARKET SIMULATION



PLEXOS can optimize the power system over a variety of times scales from long-term (1-40 years) to medium-term (1-5 years) to short-term (less than 1 year). Modeling is carried out using deterministic linear programming techniques that aim to minimize an objective function subject to the expected cost of electricity dispatch subject to a number of constraints including availability and operational characteristics of generating plants, licensing environmental limits, and fuel costs, operator and transmission constraints.



- Bidding strategy of each generating unit is defined by KTE market experts according to historical market behaviour
- Pivotal units for each bidding zone
- Ancillary service market evaluation
- **Historical evidences and feasible behaviour evolution**

PLEXOS 8.300 R03 x64 Edition

Object Themes

UP_CCGTPRILIA_1 Themes

File Clipboard Edit Fill Database Options

System Simulation

- UP_CANDELA_1
- UP_CASSANO_2
- UP_CASTELMAS_1
- UP_CCGTPRILIA_1
- UP_CHIVASSO_1
- UP_CHIVASSO_2
- UP_CNTRLDSCND_1
- UP_CNTRLDSCND_2
- UP_CNTRLDTRNL_1
- UP_CNTRLDTVRL_1
- UP_CSSINOMETA_1
- UP_CTE_DEL_M_2
- UP_CTNUCENORD_2
- UP_CTNUCENORD_3
- UP_CTTAMARETE_1
- UP_ENI_S.P.A_2
- UP_FIUMESANT_3
- UP_FIUMESANT_4
- UP_FUSINA_T_1
- UP_FUSINA_T_2
- UP_FUSINA_T_3
- UP_FUSINA_T_4
- UP_GISSI_1
- UP_GISSI_2

UP_CCGTPRILIA_1

- Template
- Inheritors
- Lists
- Fuels
 - PSV
- Start Fuels
 - PSV
- Head Storage
- Tail Storage
- Nodes
 - Italia
 - CSUD

UP_CCGTPRILIA_1

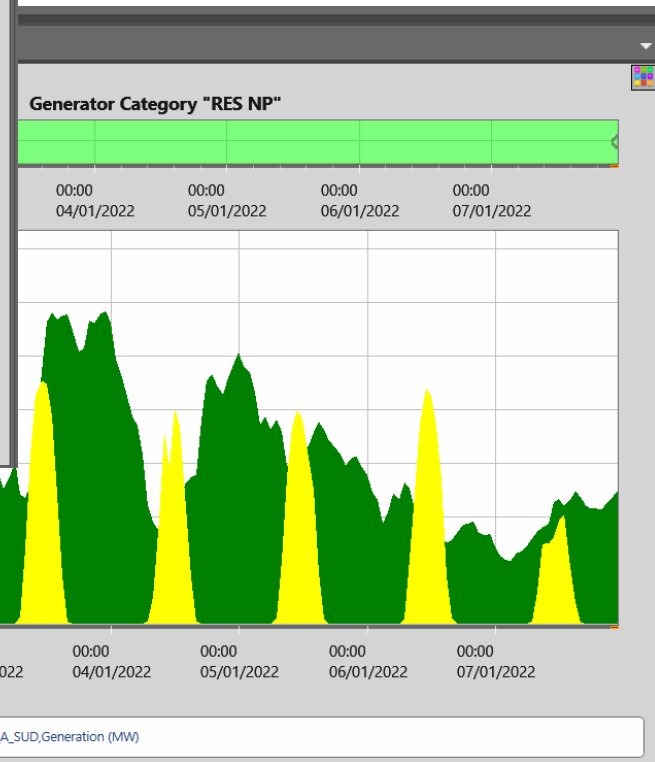
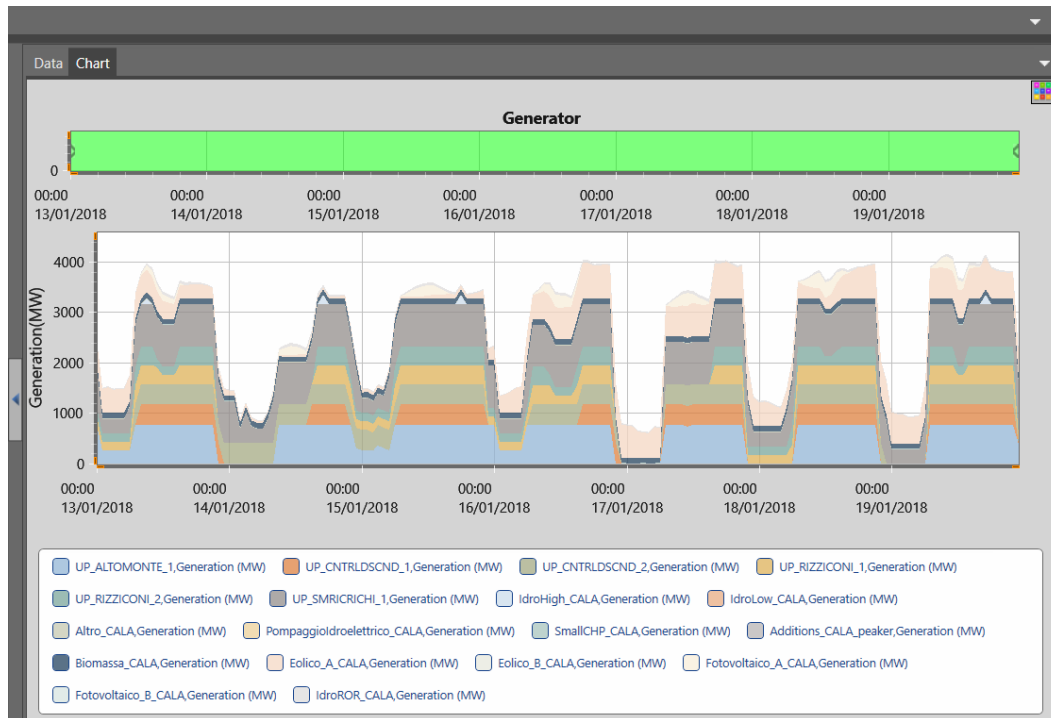
- Generators
 - Production
 - Units
 - Max Capacity
 - Min Stable Level
 - Load Point 2
 - Heat Rate 2
 - VO&M Charge
 - UoS Charge
 - Start Cost 1
 - Run Up Rate 1
 - Start Penalty

Category	Template	Start Fuels	Head Storage	Tail Storage
Termoelettrici		PSV		

Collection	Parent Object	Child Object	Property
Generators	System	UP_CCGTPRILIA_1	Units
Generators	System	UP_CCGTPRILIA_1	Max Capacity
Generators	System	UP_CCGTPRILIA_1	Min Stable Level
Generators	System	UP_CCGTPRILIA_1	Load Point
Generators	System	UP_CCGTPRILIA_1	Load Point
Generators	System	UP_CCGTPRILIA_1	Heat Rate
Generators	System	UP_CCGTPRILIA_1	Heat Rate
Generators	System	UP_CCGTPRILIA_1	VO&M Charge
Generators	System	UP_CCGTPRILIA_1	Start Cost
Generators	System	UP_CCGTPRILIA_1	Run Up Rate
Generators	System	UP_CCGTPRILIA_1	Rating Factor
Generators	System	UP_CCGTPRILIA_1	Min Up Time
Generators	System	UP_CCGTPRILIA_1	Mark-up
Generators	System	UP_CCGTPRILIA_1	FO&M Charge
Generators	System	UP_CCGTPRILIA_1	Units Out
Generators	System	UP_CCGTPRILIA_1	Capacity Price

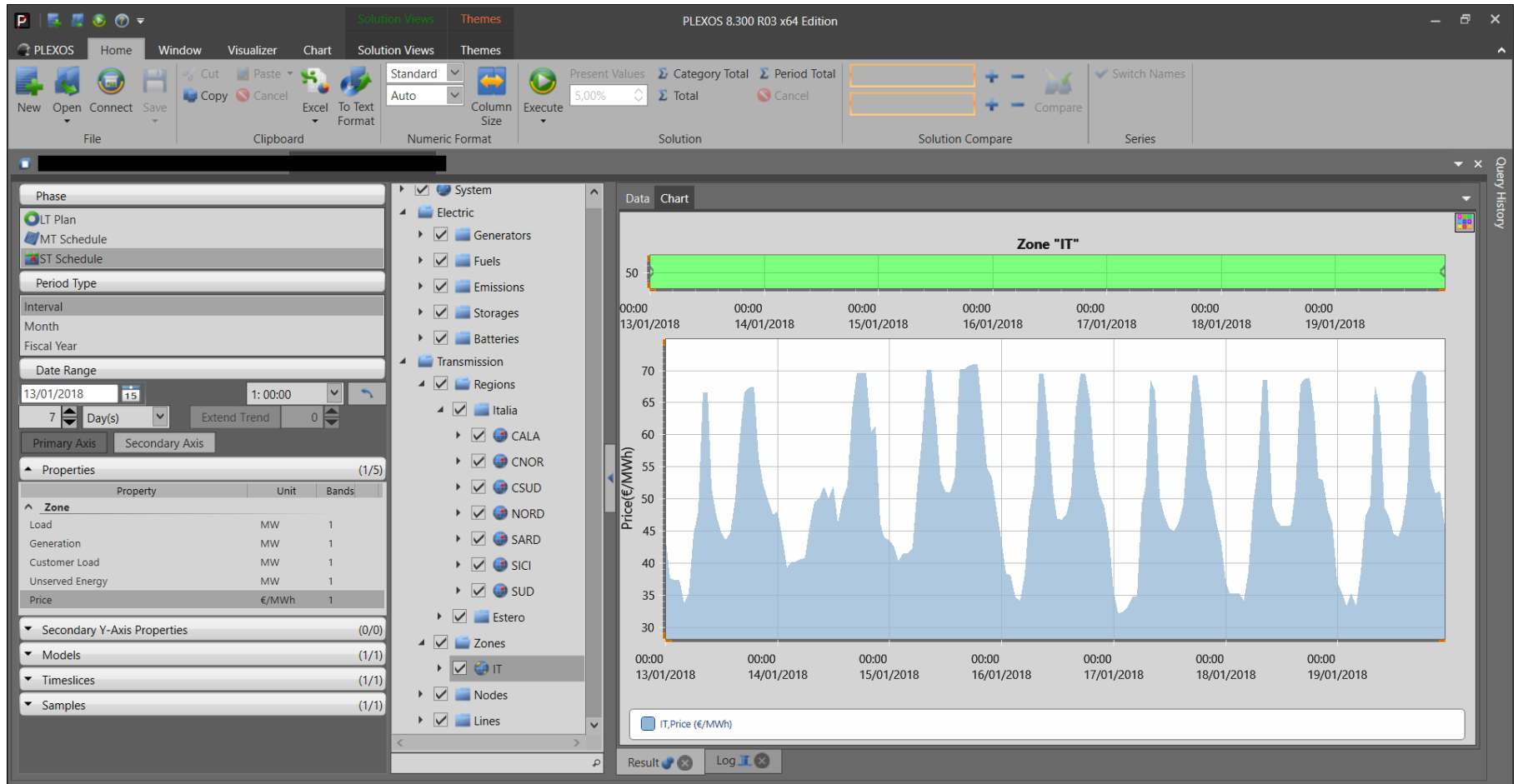
PLEXOS

HOURLY DISPATCH OF EACH POWER PLANT AND TECHNOLOGY



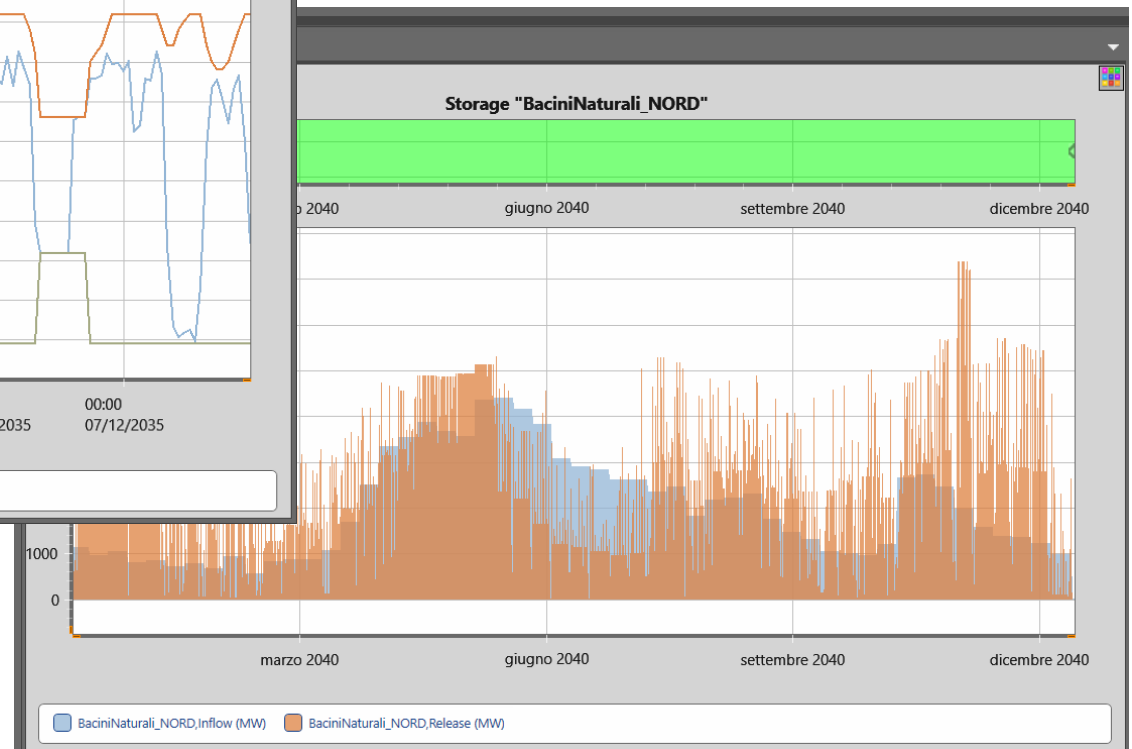
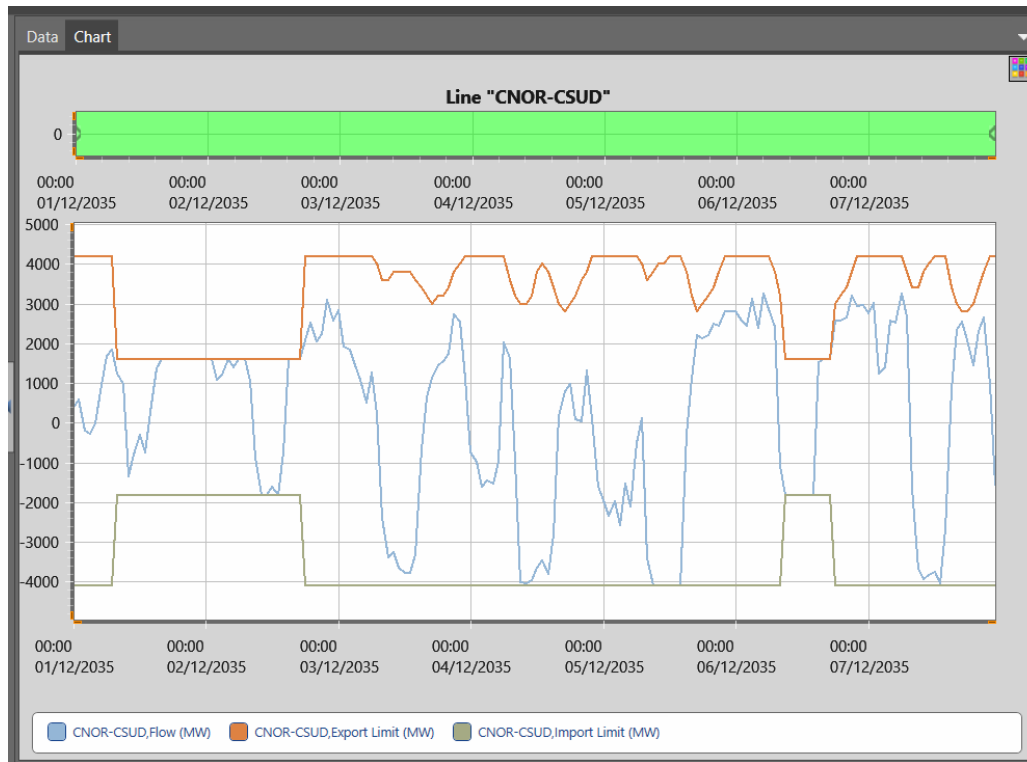
PLEXOS

ADVANCED SIMULATION OF DAY-AHEAD MARKETS



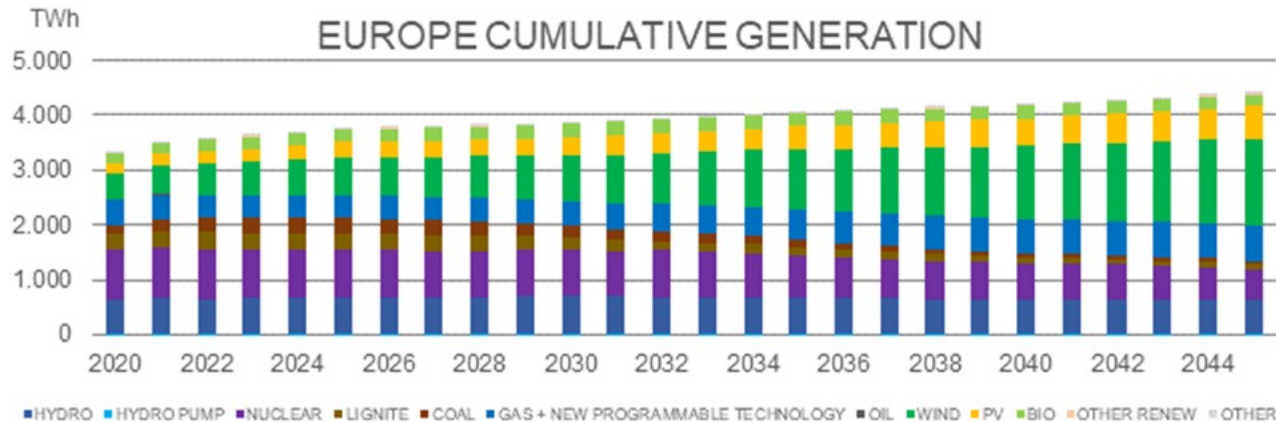
PLEXOS

ZONAL DISPATCHING ACROSS MARKET AREAS

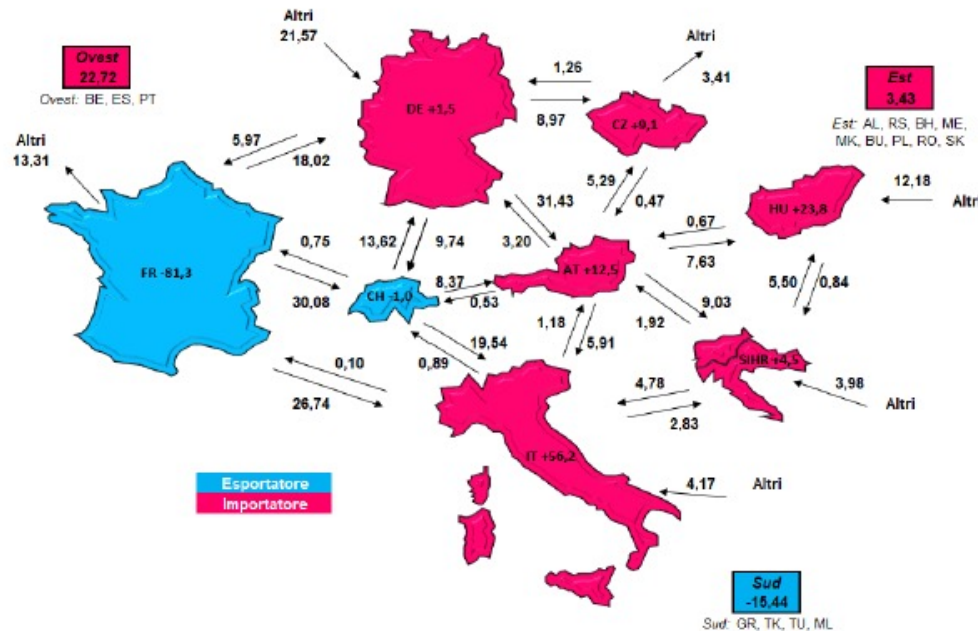


PLEXOS

SAMPLE GENERATION AND FLOW RESULTS

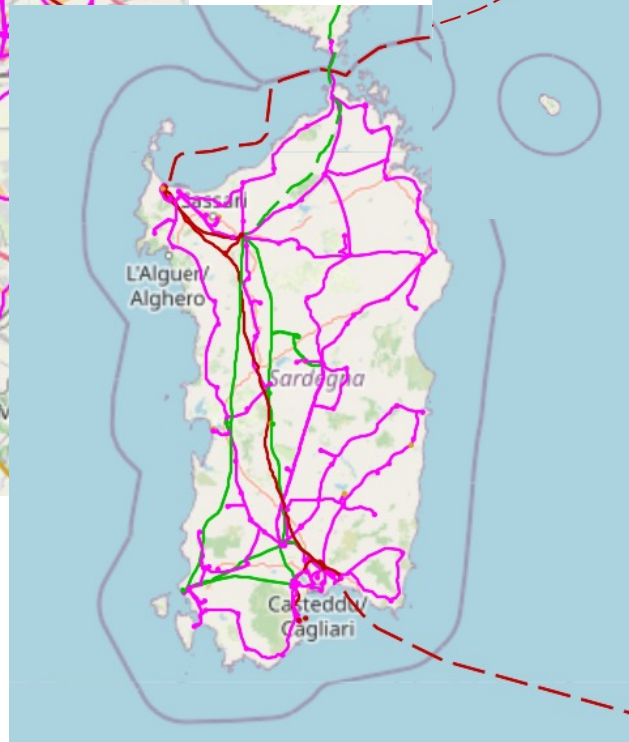
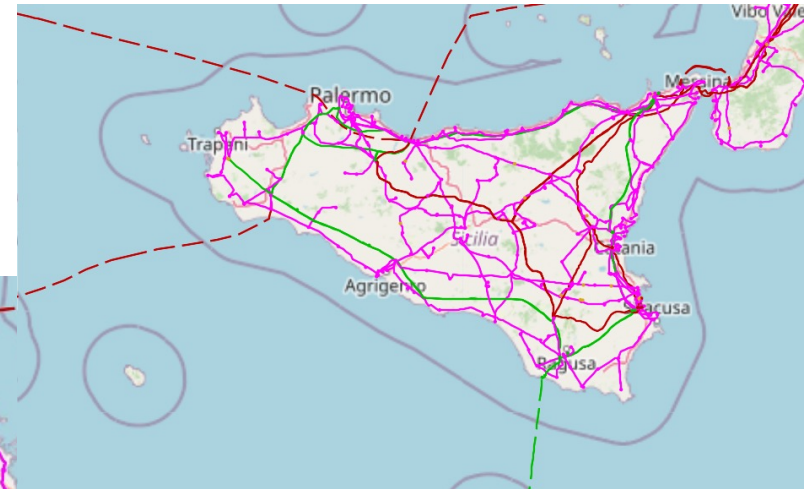
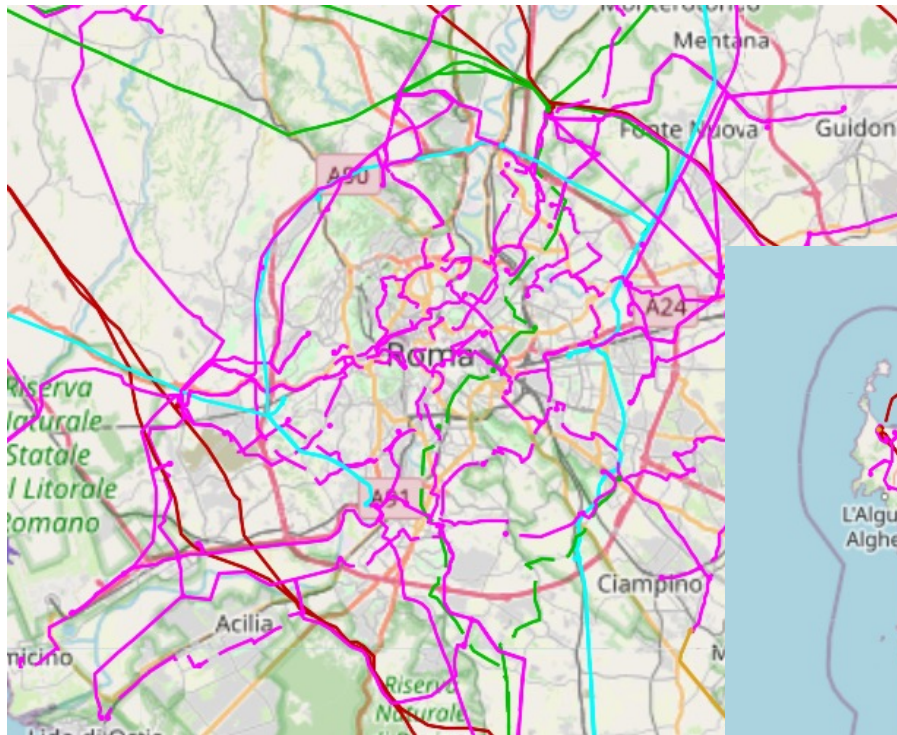


- Austria
- The Balkans
- The Baltics
- Belgium
- Bulgaria
- Croatia
- Czech Rep.
- Denmark
- England
- Finland
- France
- Germany
- Greece
- Hungary
- Italy
- Netherlands
- Norway
- Poland
- Portugal
- Romania
- Slovakia
- Slovenia
- Spain
- Sweden
- Switzerland
- Turkey



POWERFACTORY

SAMPLE SCREENSHOTS



POWERFACTORY

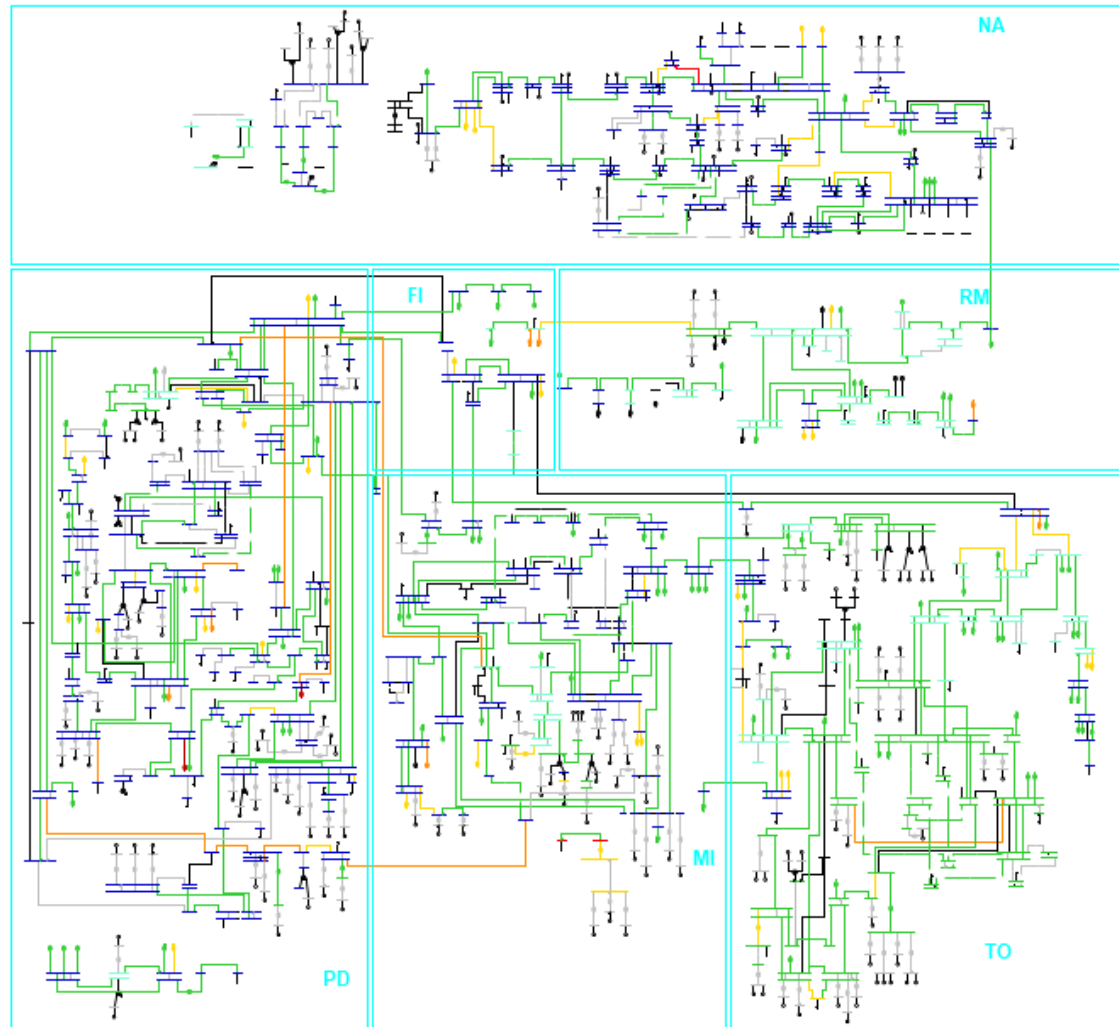
SAMPLE SCREENSHOTS



Inactive
 Out of Calculation
 De-energised

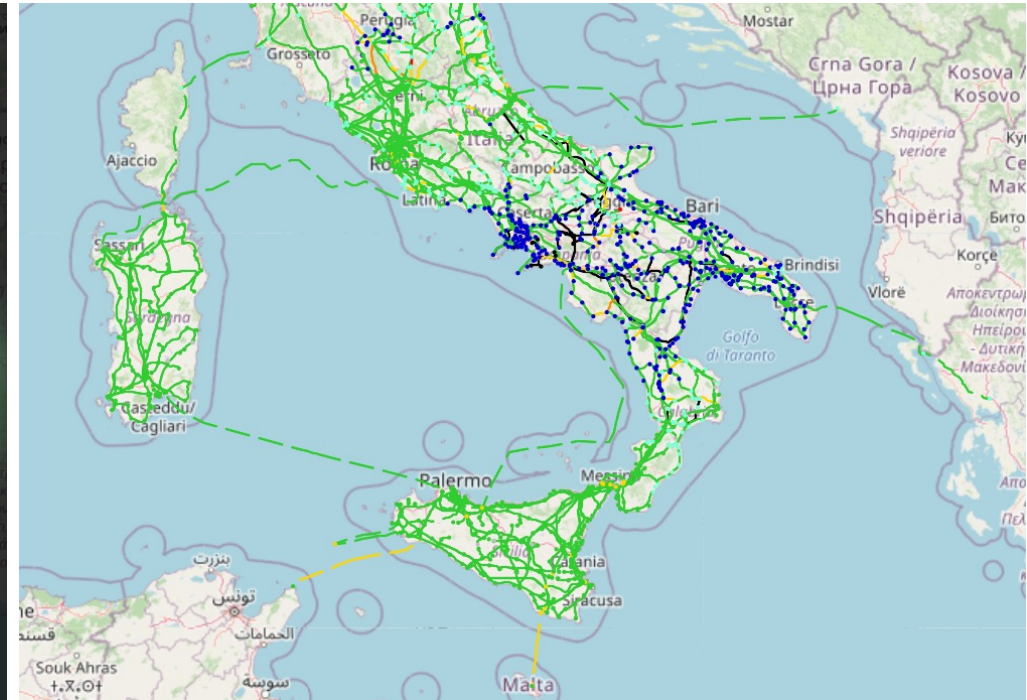
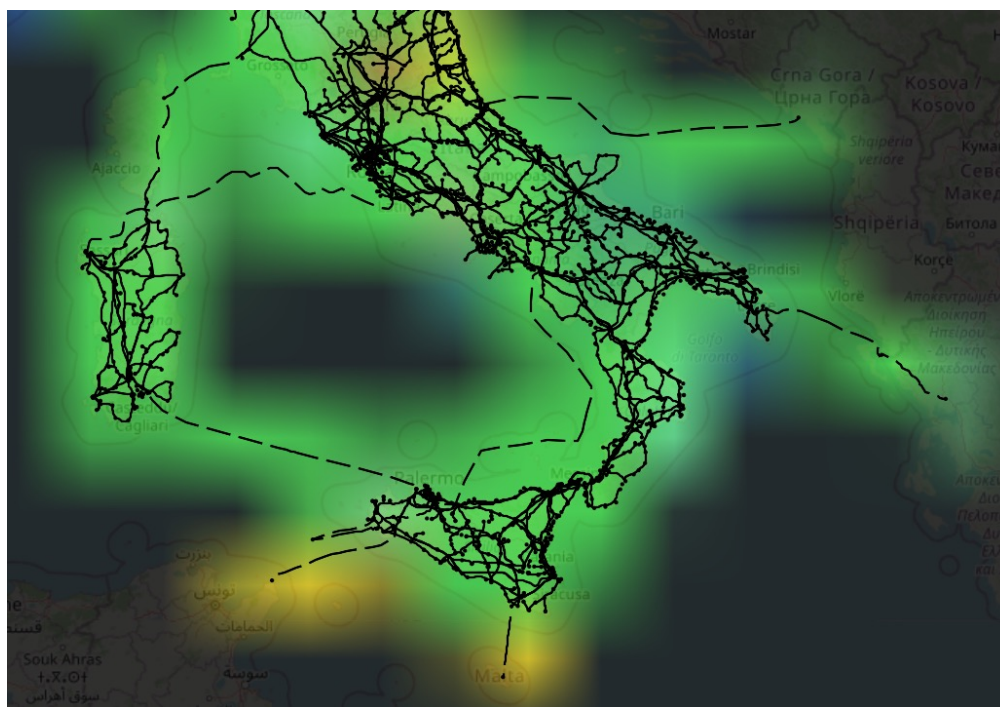
Filtro completo (loading e voltage)

- Trafo loading > 80%
- 80% < Trafo loading < 110%
- 50% < Trafo loading < 80%
- Trafo loading < 50%
- LV-side lower than 150 kW
- Voltage < 0.95 pu
- 0.95 < Voltage < 0.98
- 0.98 < Voltage < 1.02
- 1.02 < Voltage < 1.05
- Voltage > 1.05 pu
- Nominal Voltage lower than 150 kW
- Line loading >120%
- 100% < Line loading < 120%
- 80% < Line loading < 100%
- 60% < Line loading < 80%
- Line loading <60%
- Length lower than 3 km
- Out of service



POWERFACTORY

SAMPLE SCREENSHOTS





OUR TEAM

TEAM

SENIOR TEAM



Orazio Privitera - Partner – CEO. Graduated with top marks in electrical engineering, he began his career in 2000 in Assolombarda, the territorial association of industries in the province of Milan belonging to Confindustria. In Assolombarda he dealt with the supply of electricity and gas to consumer consortia which, for the first time in Italy, had the right to access the free energy market. In those years he contributed to the creation of the Confindustria Consortium Observatory. From 2005 he worked in Enel within the Supply & Risk Management department of Enel Energia and then he was head of the Wholesale unit in the department of Power Trading & Portfolio Management in Enel Trade. In 2007, he left Enel to found Key to Energy: a leading independent company in Italy in consulting services in the Energy Trading & Risk Management sector of which he is CEO. Author of many publications and articles in the sector, speaker in conferences and seminars, he collaborates as a lecturer in various post-graduate master's degrees.

Riccardo Goggi – General Manager. Graduated with honours in electronic engineering at the University of Pavia, he has worked in the energy sector for 19 years. He began his career at McKinsey, mainly in the London office. After obtaining an MBA at INSEAD, in France, from 1999 he worked in Vodafone Italia as coordinator of strategic planning and head of investor relations. From 2001 he worked for Goldman Sachs in London, focusing on the energy sector. From 2003 to 2007 he has been executive assistant of the COO Generation and Energy Management in Enel, and then Head of the Italian Wholesale Electricity Market, managing both front office and back office activities. From 2007 to 2010 he worked for CIR where he focused on the portfolio companies Sorgenia and KOS, for which he was appointed on the Board of Directors, as well as for Energia Italiana. Since 2011 he has been General Manager of Key to Energy.

TEAM

SENIOR TEAM



Luigi Michi – Senior Advisor. Graduated cum laudae in Electrical Engineering, he has attended numerous senior executive business programs at prestigious institutes (Columbia University, Harvard, IESE). With a significant over thirty-years' experience in the energy industry, where he has been playing different roles since 1985, he is a 'fully fledged' expert of energy markets and complex electrical systems, being intensively involved in the current energy transition, with particular regard to the issues associated with decarbonisation targets and the integration of renewable sources. He started his activity in the ENI group, dealing with turbogas power station designing and the management of the related works (turnkey contracts). He then continued his career in Enel where he was involved, among other things, in the management and development of renewable plants and carried out several activities related to the grid and power transmission line field (design, construction, control). He later developed a long and intense experience as Head of Energy Management, with responsibility for the management and dispatching of Enel's entire Italian generation portfolio, the related sale of energy and services on the Italian market, the procurement and management of the fuel portfolio (gas and coal) as well as wholesale and energy and commodity trading activities in the European spot and forward (OTC) markets. Finally, he was Head of Strategy, Development and Dispatching at Terna – the Italian Transmission System Operator, where he dealt in particular with dispatching, grid planning and development, regulatory affairs, strategies, market analysis and innovation. In Key to Energy he follows strategic projects supporting important national and European players in the energy transition throughout the supply chain, from production to retail sale, dealing with a wide range of electricity and gas topics in the energy sector.

TEAM

SENIOR TEAM



Carlo Sabelli – Senior Advisor. Master’s Degree in electrical engineering gained in Rome and Advanced School in Power System, sponsored by Westinghouse Corporation and Penn State University in USA. He has more than 40 years of experience in the electricity sector, most of these as Manager in the major Italian Electricity Companies (ENEL, GRTN, TERNA). Till 2018 he has been Responsible of the international relationship with other TSOs for Terna S.p.A.. He has a particularly qualified experience in the field of planning, design and operation of electricity transmission systems (including protection, Substation Automation, EMS and SCADA Systems) and management of cross border power exchanges, having covered the role of Head of Dispatching Department and System Engineering. Furthermore, as Director of Engineering Department at GRTN, he borne the responsibility of organizing the new Italian electricity Market and the related rules (in primis the Italian Grid Code). After a ten-year convenorship in the European associations of transmission operators, until June 2017 Mr. Sabelli has been Chairman of the System Operation Committee in ENTSOE and Chairman of the Research, Development and Innovation Committee of ENTSOE. He has been in the Board of Directors of CORESO and President of the technical Committee TC01 (Planning) of MedTSO. Until June 2018 He has been active in GO15 in the position of Chair of various Committees and Working Groups since it was established. He is also distinguished member of CIGRE and the main European and Italian industrial associations such as CEI, AEIT. Currently, Mr. Sabelli is cooperating with CESI, where he has taken part as Project Advisor to various successful projects in the field of technical regulation. Among the others, the Revision of the GCC Interconnection Authority Scope of Operational Studies, CASA 1000 Technical Code, AFESD Planning and Operation Codes, WAPP Grid Codes and Maintenance procedure optimization for Enel Green Power.

TEAM

SENIOR TEAM



Luca Piemonti – Partner. He has attended senior executive business programmes at prestigious national and international institutions (Bocconi, Harvard, IESE). He began his professional career in the energy sector in 2001 with GRTN, where he was responsible for managing interconnections and actively participated in the set-up and launch of the electricity market. He then moved to Acquirente Unico, managing relations with distribution companies during the start-up of operations on AU markets. He arrived at Enel at the end of 2006 where he remained until 2012 as head of trading and management of the group's power portfolio in Italy. Amongst other things, he was actively involved in the development of OTC markets and launching market-making activities on the IDEX market. In 2012, he launched a start-up company (Beetwin S.p.A.) active in the sale of electricity and natural gas to domestic end users as CEO. In 2015, he joined Terna where he was appointed CEO of Terna Energy Solutions, a company active in the development of the Group's non-regulated activities in Italy. He was also CEO of the subsidiary Avvenia (energy efficiency) and Member of the Board of Tamini S.p.A. (production of transformers). In 2020 he was appointed Director of Network Planning and Interconnections at Terna. At Key to Energy since March 2022, he is in charge of external relations and business development.

TEAM

SENIOR TEAM



Modesto Gabrieli Francescato – Senior Electrical System Specialist. Graduated in Electrical Engineering at the Faculty of Studies in Padua, he has gained twenty years of experience in the electricity transmission sector first in GRTN and then in Terna, where he held the roles of Grid Planning Manager, dealing with the preparation of the Development Plan and Market Analysis and managed consultancy projects for operators in the power market. Member of the CIGRE', he collaborated in the drafting of publications and scientific papers on technological development and strategic planning on long-term scenarios. He gained ten-year experience in ENTSO-e (European association of electricity transmission operators) collaborating in the preparation of the TYNDP ten-year development plans and in studies on demand scenarios and short-term and long-term adequacy, covering the roles of coordinator of working groups with the participation of ACER and the European Commission. He worked in synergy with Med-TSO (association of electricity transmission operators in the Mediterranean area), carrying out coordination activities on network studies and the drafting of the 2020 Development Plan. He has participated as speaker in conferences and seminars organized at international level on issues related to network and market modeling and simulations on long-term scenarios. At Key to Energy he currently coordinates the team of analysts who develop market and network scenarios and models to support specialist technical consultancy in the power and gas sector.

TEAM

SENIOR TEAM



Massimo Poiesi – Partner. Graduated with honours in mechanical engineering, he began his career in Andersen Consulting and then in Amga spa working on development and M&A projects. He was Chief Executive Officer and Board Member in group companies operating in the Integrated Water Service. In the business development of Iride spa he represented the company in LNG Medgas Terminal, a company set up to build the Gioia Tauro regasification plant. He was subsequently CEO of Energieya, a company that produces XDM®, an Energy Trading and Risk Management system. In Key to Energy he has participated in projects related to portfolio management and implementation of operations processes and followed the creation of start-ups in the energy sales sector. He has also managed some special projects, including the development of the company's platforms Rengate and K4View and the creation of a prospective market report with long-term energy price forecasting.

Simone Corbo – Partner. Graduated with honors in Management Engineering he has attended the Executive MBA in SDA Bocconi School of Management and senior executive business programs at San Francisco University and UCLA. He has a significant 15 years' experience in the energy industry starting his professional career in Enel Trade where he has covered, after a first experience as an Originator on the energy markets of Eastern Europe, the role of Power Trading Manager dealing with trading on the main energy commodities and energy and portfolio management. He then moved to Axpo where he took responsibility over the whole Energy Management & Trading division dealing with physical and financial trading, structured products on all energy commodities, plain vanilla and asian options trading, management and procurement of the customer portfolio, dispatching and procurement of the group's Italian generation portfolio. In Key to Energy he deals with: business development, investment evaluation, pricing, market analysis, market optimization (both short term and long term) of energy assets, PPA, strategies and trading models and optimization and management of generation portfolio and both physical and financial structuring and trading.

TEAM

SENIOR TEAM



Francesco Basile – Partner. Graduated with top marks in management engineering, he began his professional career in "Procter & Gamble" in the logistics and marketing area, then in Enel dealing with portfolio management and energy trading on the OTC markets both in Italy and abroad. In Enel Trade he was appointed coordinator of the Italian trading desk and cross border trading. Subsequently he worked for the Erg Group as Head of trading and cross-border activities in Italy and abroad, where he oversaw the set-up of the trading desk. In Key to Energy he deals with an all-round consultancy on the management of the wholesale portfolio: pricing, operations, risk management, economic optimisation on the market (both short-term and long-term) of production and consumption assets, forecasting, market analysis, portfolio strategies, multi-year PPAs, evaluation of production facilities and portfolios of end customers.

Francesca Egidi – Partner. In Key to Energy since 2009. Graduated with honors in Statistics and Economics, she began her career in the Management Information System e Scoring area of the Credit Risk Department of Citibank PLC. Later in the Power Desk of Enel Trade she supported activities such as Power & Commodities Market Monitoring, Price Forecasting, Wholesale Energy Pricing and Trading of energy in Italian and foreign markets. Responsible of Cross Border Trading activity for Enel Trade on Italian borders. In KtE she coordinates market analysis and modelling area and works on structured project of asset evaluation. She is involved in portfolio and risk management, spot and forward market strategies, short and long-term Power Purchasing Agreement, short term Forecasting model of renewable production and energy consumptions, long term modelling of Italian electricity markets, developments of KtE proprietary web portal (K4view), monitoring regulation (Remit, Emir, Mifid), training. She enhanced her know how on managerial finance at the London School of Economics and Political Science and focus on long term project that aims to evaluate both traditional and renewable electricity assets and third part exemption (TPA) request on cross border merchant line for Regulators.

TEAM



SENIOR TEAM

Guido Dolcetta – Partner. Graduated with top marks in electrical engineering at the University of Padua, he began his professional career in 2001 in Assolombarda with increasing responsibilities in the management of consortia for the purchase of electricity and gas. He then worked for Assoutility as Head of the Customer Relations and Development and Energy Efficiency Reporting Areas. From 2006 he worked in General Electric Jenbacher, a leader company in the construction of endothermic gas engines, as Sales Manager, with responsibility in the national market for cogeneration and trigeneration applications with natural gas, biogas, landfill gas, special gases. During this experience he has developed methods of analysis for assessing the correct sizing and feasibility of the plants (in the industrial, district heating, hospital, tertiary sectors). Over the years he has followed the development of various initiatives for the production / self-production of electricity from conventional and renewable sources. Since 2011 he has been in Key to Energy where he deals transversally with the Business Development of group companies and follows the integration of the company. As Head of the Technical Advisory, he coordinates all energy efficiency activities, industrial projects and energy production / self-production projects from renewable sources and cogeneration.

Giulio Marice – Partner. Graduated in Mechanical Engineering, he started working at the Regional Energy Agency of Liguria and continued his work experience in AMGA Commerciale where he held the role of trader and portfolio manager, after the merger with AEM Torino. He took part in the design of power processes having actively participated in the development of the electricity supply chain within the Genoese utility. He then moved to ERG Power & Gas and during the company's entry into the electricity market, where he was Head of Portfolio Management and Production Optimization. After having actively contributed to the development of the wholesale area and having specifically followed the start-up of the Priolo Gargallo CCGT, he left the ERG group as Head of Energy Management to join Key to Energy as Head of Operations & Portfolio Management. Other than supporting wholesalers and producers in the core activities on the energy market, he also manages projects related to complex electrical systems such as: Independent Networks and Closed Distribution Systems (SDC), Self-generation Systems and Efficient User Systems (SSPC).

