









Zero Emission Buildings

Sveučilite u Zagrebu Arhitektonski fakultet University of Zagreb Faculty of Architecture



Praćenje CO2 otiska

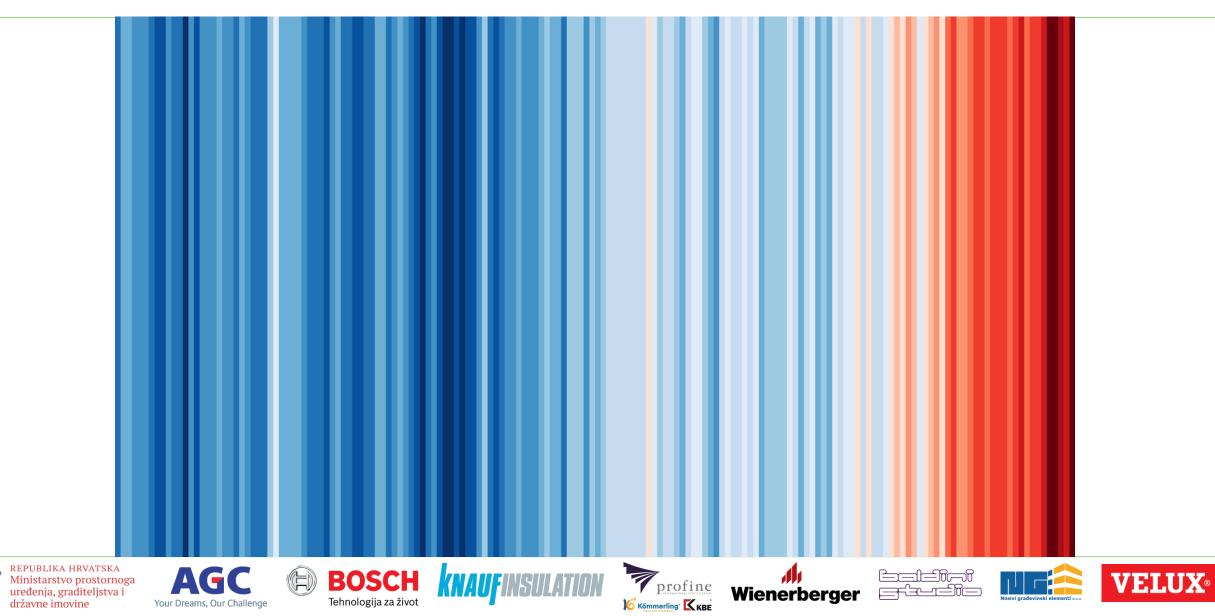
Predavač: dia, Gianmarco Ćurčić Baldini





Sveučilite u Zagrebu Arhitektonski fakultet University of Zagreb Faculty of Architecture









Portfolio-wide value & Market legislation

"With buildings being responsible for approximately **40% of energy consumption** and **36% of CO2 emissions** in the EU¹, the relevance of Sustainable Finance Disclosure Regulation (SFDR) to the real estate sector is indisputable"¹

"Of these emissions, **approximately 70% are produced by building operations**,

while the remaining 30% comes from construction. ...Property owners may need to make investments to meet new energy efficiency standards to avoid restrictions on renting or sales."²

≡Forbes

40% Of Emissions Come From Real Estate; Here's How The Sector Can Decarbonize

David Carlin Contributor *Helping you to understand and thrive in our changing world*

Apr 5, 2022, 11:14am EDT

Wienerberge

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¹ Deloitte: ESG Real Estate Insights 2021 | Article #1 Sustainable Finance Disclosure Regulation (SFDR) in the Real Estate Industry from European Commission: New rules for greener and smarter buildings will increase quality of life for all Europeans, April 2019.

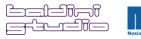
² Forbes: 40% Of Emissions Come From Real Estate; Here's How The Sector Can Decarbonize

Tehnologija za živoj

















Energy Prices + geopolitical impact

Citi: Soaring Energy Bills Raise Chances Of Windfall Taxes In Europe

By Charles Kennedy - May 23, 2022, 11:00 AM CDT

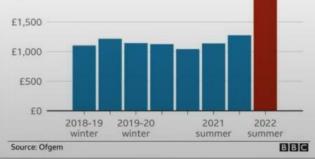
 Gas and electricity bills in Europe could jump to 4.5 percent of household disposable income in 2023.

Rising utility bills raise pressure on politicians to implement windfall tax.

Rising energy commodity prices weigh most on Eastern European countries.



The energy price cap has risen by nearly £700 Annual bill for a typical household on a price capped dual-fuel tariff paying by direct debit £2,000



Energy & Environment > Energy

(in euros per megawatt hour)

Wienerberger



VELU

Average monthly electricity wholesale prices in selected countries in the European Union (EU) from January 2020 to February 2022



REPUBLIKA HRVATSKA Ministarstvo prostornoga uređenja, graditeljstva i državne imovine











Understand energy consumption: data as the new gold

Global Agenda SDG 13: Climate Action Corporate Governance ESG

The No.1 ESG challenge organizations face: data



Here's how companies can develop a strong ESG program and reporting underpinned by data. Image: Andreas Gückihorn on Unsplast

28 Oct 2021

This article is part of the Forum COP26 Live

Matt DiGuiseppe

Vice President of Research & E80, Diligent



UpLink - Take Action for the SDGs

Tehnologija za život

- · Integration of ongoing, real-time data is key to meeting ESG commitments.
- · Just 9% of surveyed companies are actively using software that supports data collection, analysis and reporting on ESG.
- Corporations can develop a strong ESG program underpinned by data here's how.

³ World Economic Forum: The No. 1 ESG challenge organizations face: data.















"Just 9% of surveyed companies are actively using software that supports data collection, analysis and reporting on ESG"³





ELLIGENCE DEXMA Energy intelligence softwa organisations facing clime

ae © Ed Hawkins ersitv of Readina)



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VELUX

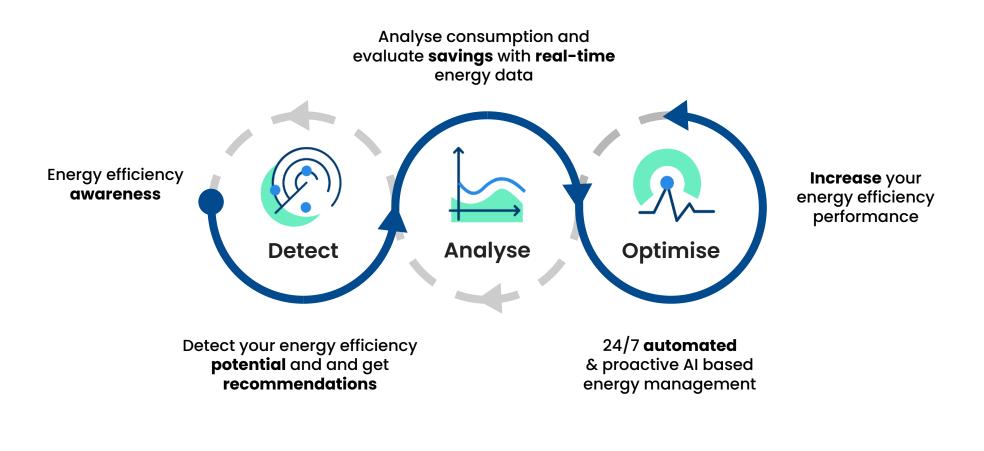


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The energy intelligence journey with DEXMA

BOSCH

Tehnologija za život



profine

Kömmerling KBE

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Your Dreams, Our Challenge





DEXMA ANALYSE

Wherever the data it is, we integrate it

+500 native integrations

From 50 different vendors, and counting. Our expertise in integrations helps us get data from everywhere

No programming, just configuring

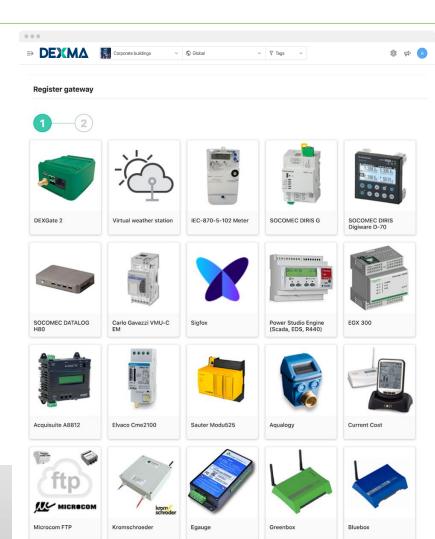
Just pick your hardware box from the list and add a few details. Data will be gathered in real-time

Create your own devices with formulas

Can't monitor everything? No worries, operate with your variables to create virtual devices

Upload excel files quick and easy.























The real-time monitoring platform

Understand your consumption patterns

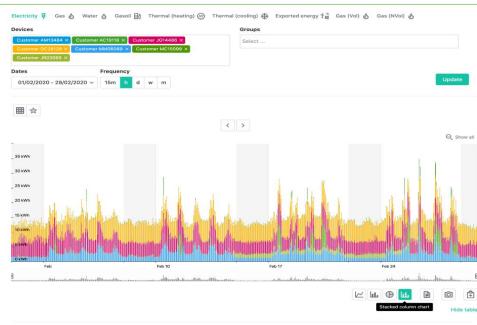
Get real-time data from your meters and IoT sensors deployed to "view" how you consume

Every energy source, and weather too

Not only electricity, but gas, water, thermal energy, etc. and +100,000 virtual weather stations available

With your own brand and soul

Boost your team engagement offering the best user experience in a fullybranded platform



Devices/Groups	Total	Average	Median	Max	Min
Customer AM13484	4.782,04 kWh	6,44 kWh	6,38 kWh	10,30 kWh	4,41 kW
Customer AM13464	+ 5,8 %	+ 5,9 %	+ 8,0 %	+ 18,1 %	4,41 kWP + 0,9 2,68 kWP - 17,5 0,07 kWP - 8,4 0,08 kWP 0,00 kWP 0,00 kWP 0,00 kWP - 0,00 kWP - 100,00 kWP
Customer AC19118	3.321,41 kWh	4,47 kWh	4,00 kWh	11,32 kWh	4,41 kW/ + 0,9 2,86 kW/ -72,5 0,87 kW/ -8,4 0,18 kW/ 0,05 kW/ 0,00 kW/ -100,05 -100,05
Customer AC19118	-14,9 %	-14,8 %	-13,9 %	+ 2,4 %	
Customer JG14486	1.496,65 kWh	2,01 kWh	1,29 kWh	14,58 kWh	* 0,9 2,68 kW -17,5 0,87 kW -8,4 0,18 kW 0,0 0,00 kW 0,0
Customer JG14486	-24,6 %	-24,5 %	-46,7 %	+ 17,7 %	
	312,68 kWh	0,42 kWh	0,18 kWh	10,62 kWh	Min 4,41 kWh + 0,8 5 2,68 kWh - 17,5 5 0,87 kWh 0,0 5 - 8,4 5 0,00 kWh - 0,00 kWh - 100,0 5 kWh - 7
Customer DC28129	+ 63,8 %	+ 64,1 %	0,0 %	+ 50,8 %	
Customer MM06089	72,28 kWh	0,10 kWh	0,00 kWh	4,21 kWh	0,00 kW
Customer MM06089	-79,6 %	-79,6 %	0,0 %	-55,8 %	4,41 kWP + 0,9 2,68 kWP -17,5 0,07 kWP -8,4 0,08 kWP 0,0 0,00 kWP 0,0 0,00 kWP -100,0 kWP
Customer MC15099	61,69 kWh	0,08 kWh	0,00 kWh	0,88 kWh	4,41 kW(+ 0,9 2,68 kW(-17,5') 0,87 kW(-8,4') 0,18 kW(0,01 kW(0,00 kW(-0,00 kW(-100,00 kW(-100,000 kW(
Customer MC15099	-85,0 %	-85,0 %	-100,0 %	-47,3 %	
Customer JR03069	kWh	kWh	kWh	kWh	kW
Customer JR03069	%	%	%	%	

Add comment +

4176 Registered readings

Export mesurements to Excel



















A new wave for Indoor Air Quality

Ensure air quality is good

Use DEXMA's monitoring capabilities to monitor IAQ and track CO2, VOCs, PM levels, etc.

Combine IAQ + Energy data

Monitor HVAC parameters together with IAQ to detect inefficiencies in ventilation processes

Show them you care

Having a healthy working environment help your team to be more productive.

Tehnologija za živo

	👃 Temp.	20,12 °C
74	% Hum.	64,48 %
+50 air quality is good!		0.1 µg/m3
	°_ co₂	424,94 ppm



















We all know that renewables matter

Analyse how renewable assets

impact your bill

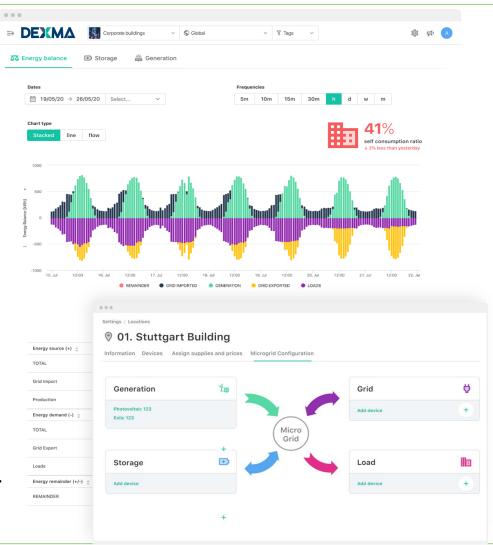
Easily track carbon impact for reporting, energy savings & avoided cost from PV

Seamless green energy balance analytics

Energy production, consumption, grid & storage - all together in one platform

Specific PV features

Track the performance ratio, production dashboards, gather data from PV inverters...



















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DEXMA ANALYSE

Fully charge with EV-mobility

New EV chargers in the building?

Monitor all your point of consumption, including EV chargers in the same platform.

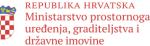
Make visible valuable info about EV

Complete your reporting with data from EV chargers including updated information about EV retrofits in your assets.

Easily integrate your EV apps

Use the DEXMA API to integrate your energy data into the third-party EV smart charger application of your choice.









Focus where

to invest







Emissions Management Tool box

Track and calculate direct and indirect emissions for scope 1, 2 & 3

Track your consumptions as well as your business travel, procurement, waste and water.

Use your local conversion factors to calculate emissions.

Automate the carbon emission reporting by site or group of sites

Aggregate emissions, calculate daily, monthly and yearly emission at site and at portfolio level.





















Carbon reduction pathways

Monitor your carbon risk

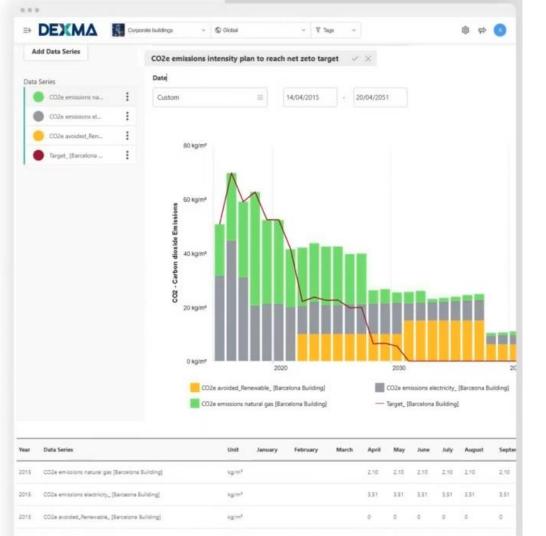
Automate carbon emission intensity reporting by site or group of sites. Aggregate emission intensity at site and at portfolio level.

Benchmark your carbon footprint

Compare carbon intensity across your portfolio.

Set GHG and energy efficiency targets and monitor your real performance

Automate targets tracking with Measurement and Verification projects at site and portfolio level



















DEXMA ANALYSE

Streamline multiscope reporting

Pick the data and get the report

Create and share reports via PDF, Excel or CSV file

Choose a report from the library

Try out more than 10 predefined report templates to tackle each stakeholder's interests, ie: cost & energy, bill simulations, M&V projects summary...

Not enough? Create your own custom reports

Be able to fully personalize the way you show the energy management outcomes of your portfolio at every level

Tehnologija za život

Library reports











DEXMA OPTIMISE

24/7 automated anomaly detection

Artificial intelligence at service

Have a virtual energy managers troupe detecting anomalies. No holidays, no out hours.

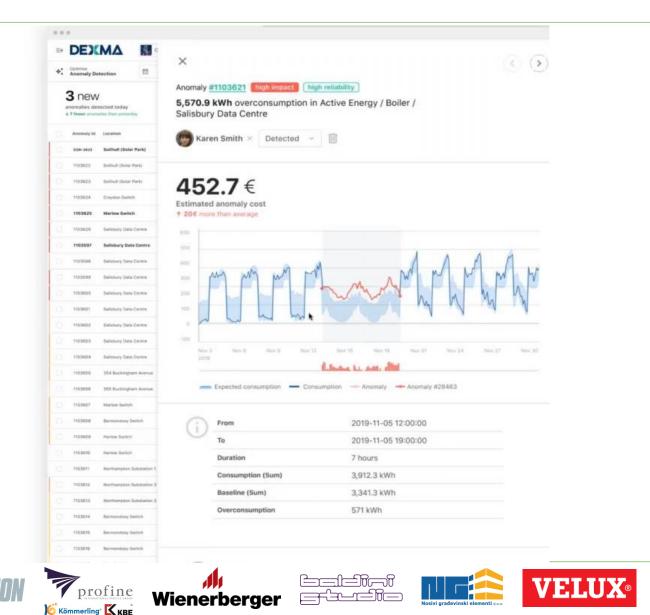
Focus on what matters most

Al analyses the data so yours teams can invest their time on decisions and solving problems

Use smart meters in the smart way

Take advantage of smart meter data to deliver useful insights not only huge amounts of data.

Tehnologija za život













DEXMA OPTIMISE

From a reactive to a proactive mode

Local weather and calendar

Algorithms automatically adjust their outputs based on local holidays and clima.

Learn from your historical data

Al Algorithms learn from your consumption behaviours and previous anomalies

Proactively avoid over consumptions and emissions

Use data and technology to optimise your consumptions and lower emissions.

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DEXMA DETECT

First step in the energy efficiency adventure

Evaluate energy savings potential

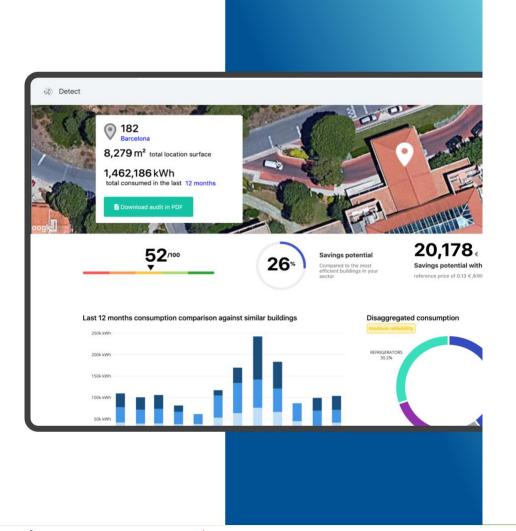
Use monthly bills or smart meter data to evaluate your portfolio potential with no CAPEX

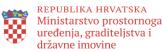
Get tailored recommendations

Get a list of specific recommendations, from HVAC to solar PV to improve your energy efficiency

Prepare your investment plan

Use the financial metrics reported to prepare your investment plan in energy efficiency





















DEXMA ANALYSE

Comprehensive real-time analytics

The real-time monitoring platform

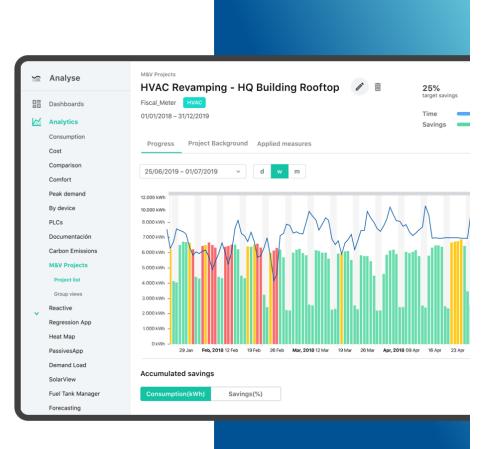
Help your customers be more efficient and competitive by understanding their performance

A complete toolbox for advanced analytics

+50 different analysis screens for every insight

Measure & verify achieved savings

Calculate baselines and track energy efficiency





















DEXMA OPTIMISE

24/7 automated energy management

Analyze all your data, automatically

Artificial intelligence is always detecting anomalies for you. No holidays, no work hours

Focus on decisions

Your Dreams, Our Challenge

Al analyses the data so your team can invest their time on decisions and solving problems

Track each anomaly's story

Add comments and get traceability from anomaly creation until its fixture. Team work!

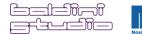
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Tehnologija za život

	DEX		porate buildings V 👯 E	urope	X Anomaly #1103623 high impact high reliability		
♦ ‡		a 29	/01/2018 → 28/06/2018	Date range	1,571.3 kWh overconsumption in Active Energy / Bo	oiler	
a	3 NeW nomalies det		₹ 538€ Total cost of a ↑ 285€ more the	nomalies	Salisbury Data Centre		
	Anomaly Id	Location	Devices / Groups	Impact 🕎	942.15 € 30.000 € Anomaly cost Projected annual cost		
	COR-3622	Solihull (Solar Park)	3rd floor corridor lighting	high	↑ 808€ more than average If anomaly recurrs weekly		
	1103622	Solihull (Solar Park)	HVAC Rooftop	high	500	_	
	1103623	Solihull (Solar Park)	CW_Pumps_level2_KWh	high			
	1103624	Croydon Switch	Switch CW_Pumps_level3_KWh	CW_Pumps_level3_KWh high	high		Ņ
	1103625	Marlow Switch	VRV Total	high			
	1103629	Salisbury Data Centre	Fiscal Electricity Meter	high	-100 Nov 3 Nov 6 Nov 9 Nov 12 Nov 15 Nov 18 2019		
	1103597	Salisbury Data Centre	Fiscal Electricity Meter	high	Expected consumption — Consumption — Anomaly	+	
	1103598	Salisbury Data Centre	HVAC Rooftop unit 1	high			
	1103599	Salisbury Data Centre	Fiscal Electricity Meter	high	From 14/11/19 20		
	1103600	Salisbury Data Centre	HVAC Rooftop	high	To 14/11/19 20 Duration 23 min.	1:38:	
	1103601	Salisbury Data Centre	Hall HVAC	high	Consumption (Sum) 3,912.3 kW	'n	
	103001	Sansoury Data Centre		nign	Baseline (Sum) 2,341.3 kW	'n	

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VELUX®







Zero Emission Buildings

