

The Siemens logo, consisting of the word "SIEMENS" in a bold, teal, sans-serif font, is positioned in the top right corner of the slide.

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Energetske klase objekata

The ME! logo is located in the bottom right corner. It features the text "It's all about" in a small, white, sans-serif font, followed by "ME!" in a large, bold, white, sans-serif font. Below "ME!" are the words "Maximize" and "Efficiency!" in a smaller, white, sans-serif font. The entire logo is set against a solid orange rectangular background.

It's all about
ME!
Maximize
Efficiency!

Sadržaj



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Trenutna potrošnja energije

Osnovni pojmovi u oblasti EE

Standardizacija i potencijali uštede

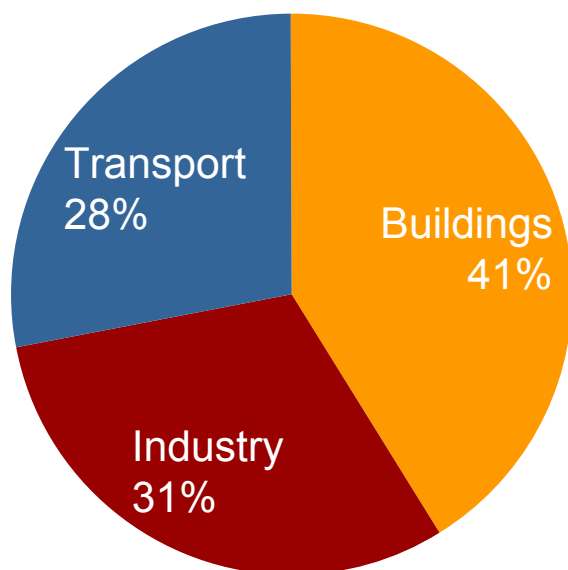
Proces poboljšanja EE objekta

Trenutna potrošnja energije



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Potrošnja energije u Evropi



Investiranjem u automatizaciju instalacija za grejanje, hlađenje i ventilaciju mogu se postići uštede u potrošnji energije do 30%



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Trenutna potrošnja energije, problemi

Raspoloživost

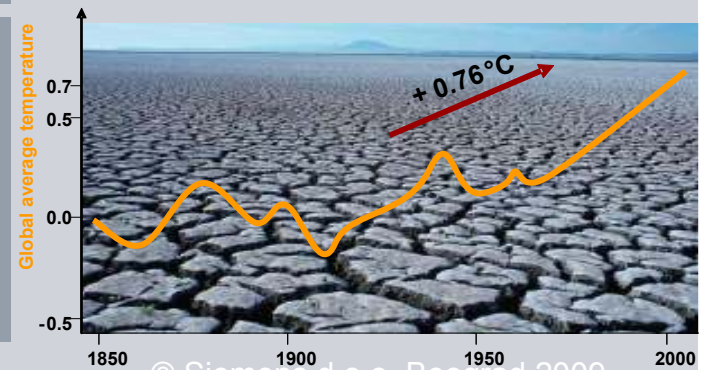
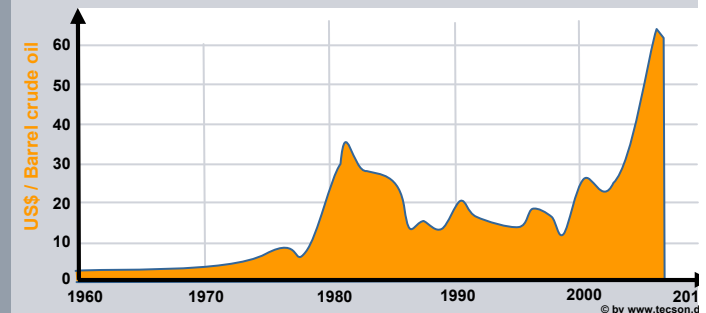
- ograničenost energetskega resursa

Cena

- očekuje se kontinuirani rast cena energije

Ekologija

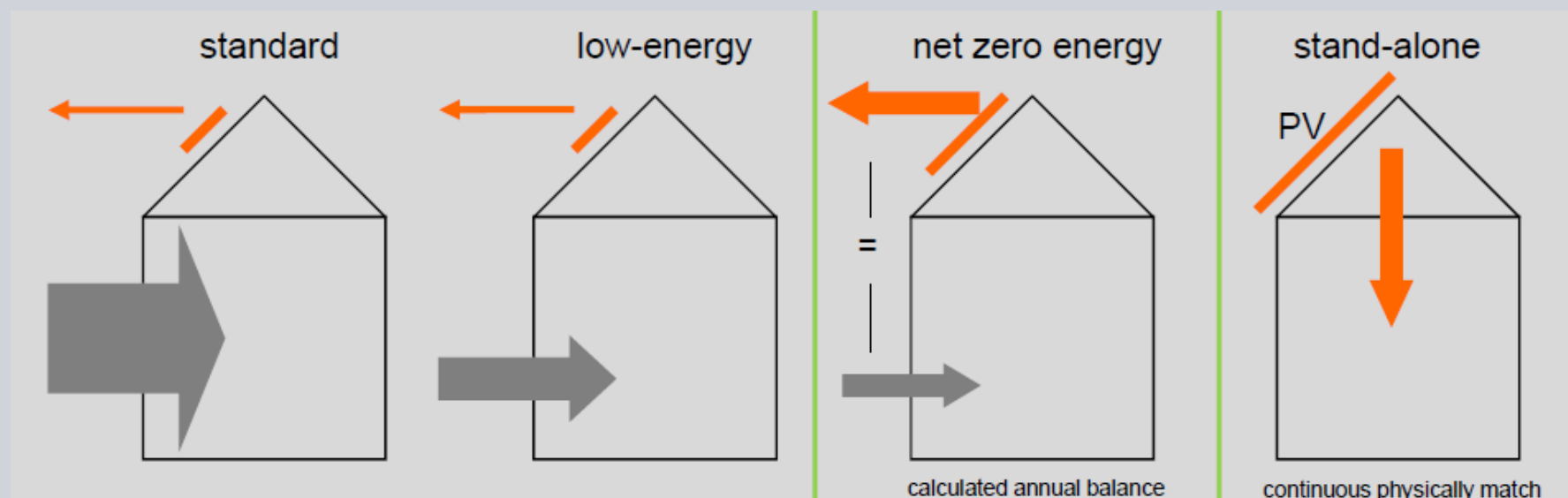
- proizvodnja i potrošnja energije kreiraju 94% emisije CO₂



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Building Technologies / Industry

Osnovni pojmovi u oblasti EE



NZEB - energija koja se troši manja je ili jednaka energiji koja se proizvodi

NZEB - Net Zero Energy Buildings



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Standardizacija i potencijali uštede, EN15232

CEN je po nalogu EU standardizovao metode kalkulacije uštede energije

CEN: European Committee for Standardization

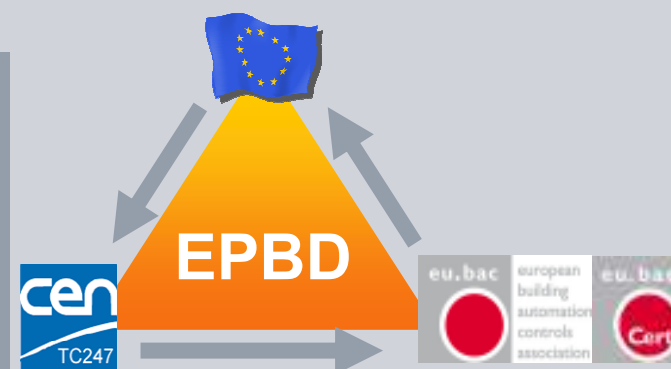
CEN je pripremio:

EN15232 - uticaj BACS na energetska efikasnost

EN15500 - energetske performanse proizvoda

eu.bac pripremio je test metode i sertifikacione procedure

eu.bac: european building automation controls assoc.





Standardizacija i potencijali uštede, EN15232

Definition of classes							
Residential				Non residential			
D	C	B	A	D	C	B	A

Automatic control

Heating control

Emission control

The control system is installed at the emitter or room level, for case 1 one system can control several rooms

0	No automatic control							
1	Central automatic control							
2	Individual room automatic control by thermostatic valves or electronic controller							
3	Individual room control with communication between controllers and to BACS							
4	Integrated individual room control including demand control (by occupancy, air quality, etc.)							

Control of distribution network hot water temperature (supply or return)

Similar function can be applied to the control of direct electric heating networks

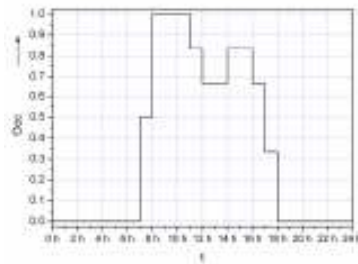
0	No automatic control							
1	Outside temperature compensated control							
2	Indoor temperature control							



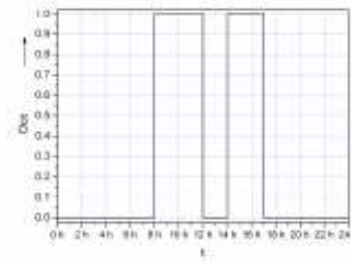
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Standardizacija i potencijali uštede

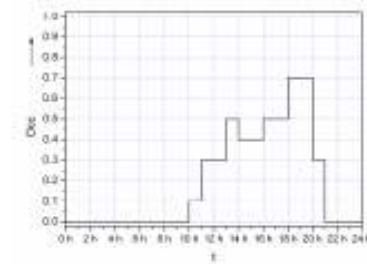
Office



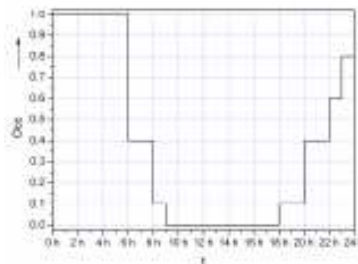
School



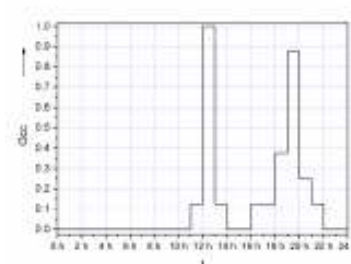
Wholesale centre



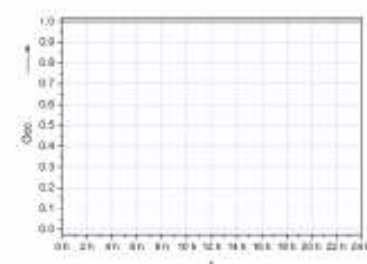
Hotel



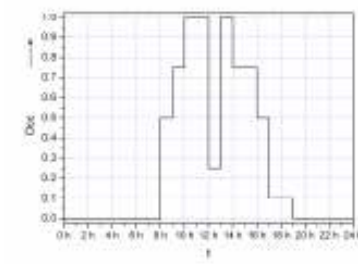
Restaurant



Hospital



Lecture hall



User profiles as defined by EN 15217



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Standardizacija i potencijali uštede

Class	Thermal energy				Electrical energy			
	D	C	B	A	D	C	B	A
Offices	1,51	1	0,80	0,70	1,10	1	0,93	0,87
Lecture hall	1,24	1	0,75	0,50	1,06	1	0,94	0,89
Education	1,20	1	0,88	0,80	1,07	1	0,93	0,86
Hospitals	1,31	1	0,91	0,86	1,05	1	0,98	0,96





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Standardizacija i potencijali uštede

Class	Thermal energy				Electrical energy			
	D	C	B	A	D	C	B	A
Hotels	1,31	1	0,85	0,68	1,07	1	0,95	0,90
Restaurants	1,23	1	0,77	0,68	1,04	1	0,96	0,92
Wholesale & retail	1,56	1	0,73	0,60	1,08	1	0,95	0,91
Residential	1,10	1	0,88	0,81	1,08	1	0,93	0,92





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Standardizacija i potencijali uštede

Hotels



25%

Education



34%

Hospitals



18%

Residential



27%

Restaurants



31%

Shopping C.



49%

Offices



39%

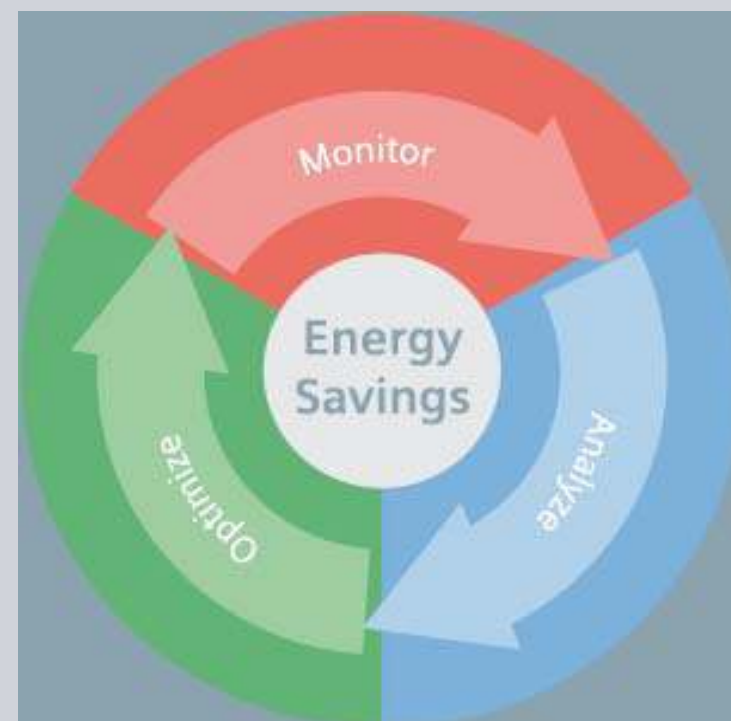
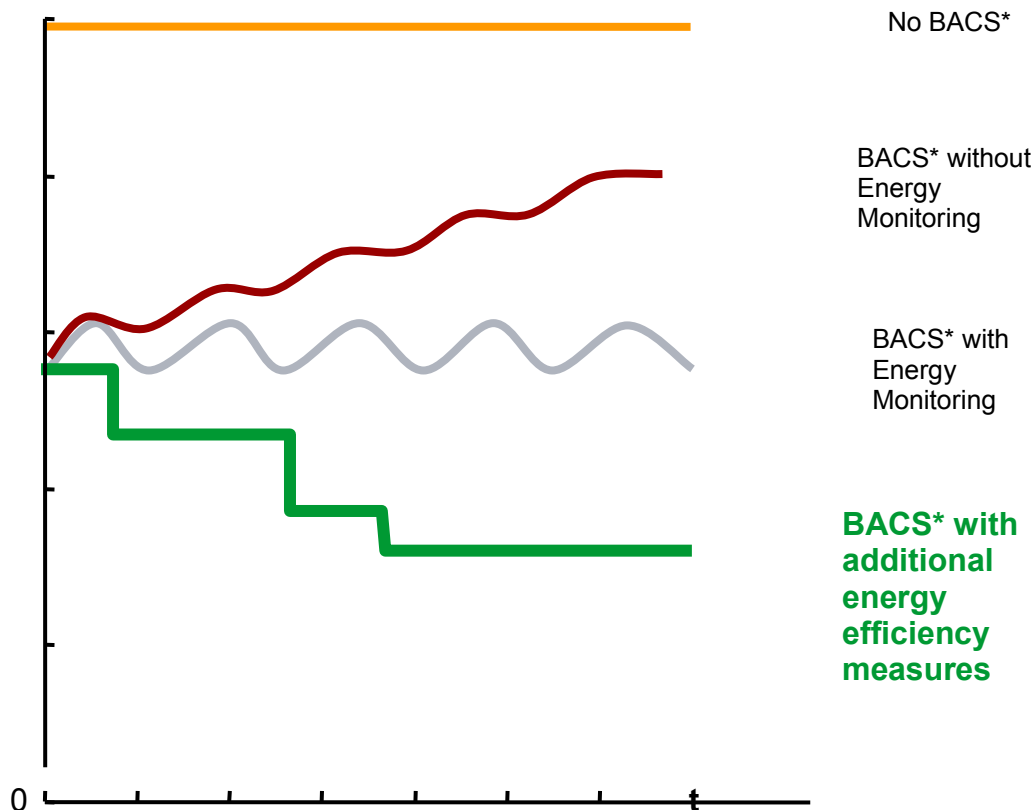
Determined by means of building simulation / FH Aachen DE



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Standardizacija i potencijali uštede

Energy consumption in buildings

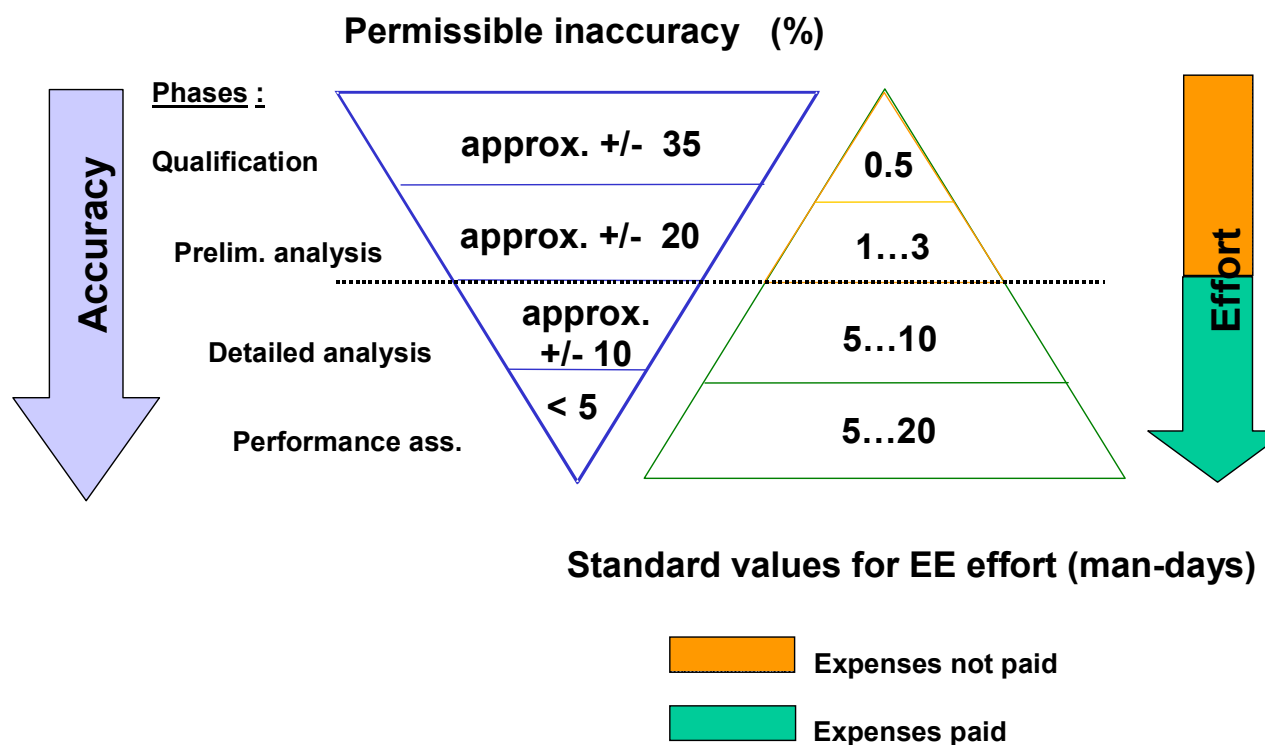


Proces poboljšanja EE objekta



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Process analysis effort versus EE effort





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Proces poboljšanja EE objekta

Advantage Operations Center

- 24/7 monitoring of energy consumption
- Advanced energy monitoring platform
- Detailed Analysis of consumption profiles by energy experts
- Energy efficiency solutions based on your building's specific needs
- A life-cycle partnership focusing on providing on-going value

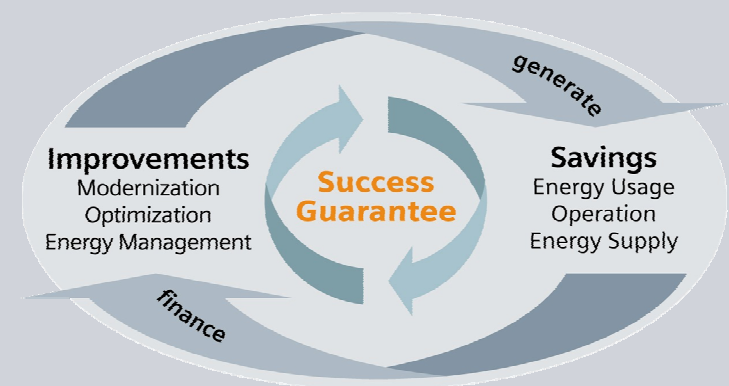




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Proces poboljšanja EE objekta

- ✓ Cost reduction
- ✓ Modernization of facilities
- ✓ Certification for Green Building (Publicity)
- ✓ Access to environmental fundings
- ✓ Success Guarantee by Siemens



Hvala na pažnji!

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