



ALAT ZA KLASIFIKACIJU ENERGETSKE UČINKOVITOSTI

Autor:
Damir Digula
Siemens d.d.
damir.digula@siemens.com



Što je EN 15232?

EN 15232: "Energy performance of buildings – Impact of Building Automation, Controls and Building Management,,

HRN EN 15232: "Energijska svojstva zgrada – Utjecaj automatizacije zgrada, upravljanja i upravljanja zgradama"

Standard CEN (Comité Européen de Normalization, odnosno Europski odbor za standardizaciju), razvijen u okviru projekta standardizacije kojeg sponzorira EU kako bi se poboljšala energetska učinkovitost zgrada u državama članicama EU



Standard EN15232 određuje:

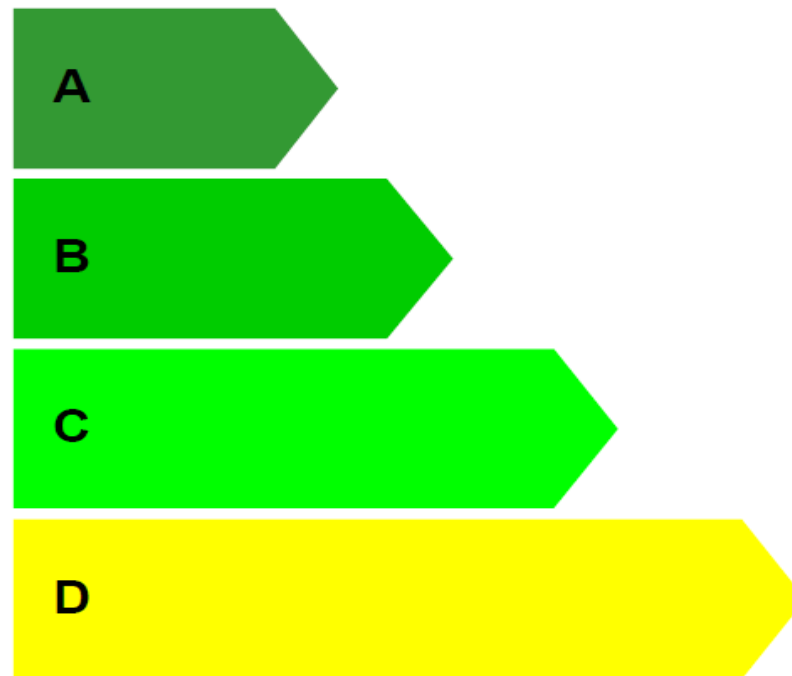
- strukturirani popis funkcija kontrole, automatizacije zgrada i funkcija tehničkog upravljanja zgradama koje utječu na energetske učinkovitost zgrada
- metodu za definiranje minimalnih zahtjeva u vezi s funkcijama upravljanja, automatizacije zgrada i tehničkog upravljanja zgradama koje će se provoditi u zgradama različite složenosti,
- detaljne metode za procjenu utjecaja tih funkcija na energetske učinkovitost određene zgrade. Ove metode omogućuju uvođenje utjecaja tih funkcija u izračune energetske svojstva i pokazatelja izračunatih prema relevantnim standardima,
- pojednostavljenu metodu za prvu procjenu utjecaja tih funkcija na energetske karakteristike tipičnih zgrada





Ukupne klase učinkovitosti BACS-a

EN 15232 definira četiri različite klase učinkovitosti BACS-a za automatizaciju i upravljanje zgradama.



BACS - Building Automation and Control System (Sustav automatizacije i upravljanja zgradom)

TBM - *Technical Building Management* (Sustav tehničkog upravljanja zgradom)





Klasa A odgovara visokoj energetskej učinkovitosti BACS i TBM

- Umrežena automatizacija prostorija s automatskom kontrolom potražnje
- Planirano održavanje
- Nadgledanje energije
- Održiva energetska optimizacija

Klasa B odgovara naprednim BACS i nekim specifičnim TBM funkcijama

- Umrežena automatizacija prostorija bez automatske kontrole potražnje
- Nadgledanje energije

Klasa C odgovara standardnom BACS-u

- Umrežena automatizacija primarnih postrojenja
- Nema elektroničke automatizacije prostorija, termostatski ventili za radijatore
- Nema nadgledanja energije

Klasa D odgovara ne-energetski učinkovitim BACS-u

Zgrade s takvim sustavima bi trebale biti modernizirane. Nove zgrade ne bi trebale biti opremljene takvim sustavima.

- Bez umreženih funkcija automatizacije zgrada
- Nema elektroničke automatizacije prostorija
- Nema nadgledanja energije





Ukupni BACS faktori učinkovitosti za toplinsku energiju Nestambene zgrade

Non-residential building types	BACS efficiency factors thermal $f_{BAC,th}$			
	D	C	B	A
	Non energy efficient	Standard (reference)	Advanced energy efficiency	High energy performance
Offices	1.51	1	0.80	0.70
Lecture halls	1.24	1	0.75	0.5 ^a
Educational buildings (schools)	1.20	1	0.88	0.80
Hospitals	1.31	1	0.91	0.86
Hotels	1.31	1	0.85	0.68
Restaurants	1.23	1	0.77	0.68
Wholesale and retail buildings	1.56	1	0.73	0.6 ^a
Other types: <ul style="list-style-type: none"> • Sport facilities • Storage • Industrial facilities • etc. 		1		
^a The values are highly dependent on heating/cooling demand for ventilation				



Ukupni BACS faktori učinkovitosti za toplinsku energiju Stambene zgrade

Residential building types	BACS efficiency factors thermal $f_{BAC,th}$			
	D	C	B	A
	Non energy efficient	Standard (reference)	Advanced energy efficiency	High energy performance
<ul style="list-style-type: none"> • Single family dwellings • Multi family houses • Apartment houses • Other residential or residential-like buildings 	1.10	1	0.88	0.81



Ukupni BACS faktori učinkovitosti za električnu energiju Nestambene zgrade

Non-residential building types	BACS efficiency factors electrical $f_{BAC,el}$			
	D	C	B	A
	Non energy efficient	Standard (reference)	Advanced energy efficiency	High energy performance
Offices	1.10	1	0.93	0.87
Lecture halls	1.06	1	0.94	0.89
Educational buildings (schools)	1.07	1	0.93	0.86
Hospitals	1.05	1	0.98	0.96
Hotels	1.07	1	0.95	0.90
Restaurants	1.04	1	0.96	0.92
Wholesale and retail buildings	1.08	1	0.95	0.91
Other types: <ul style="list-style-type: none"> • Sport facilities • Storage • Industrial facilities • etc. 		1		





Ukupni BACS faktori učinkovitosti za električnu energiju Stambene zgrade

Residential building types	BACS efficiency factors electrical $f_{BAC,el}$			
	D	C	B	A
	Non energy efficient	Standard (reference)	Advanced energy efficiency	High energy performance
<ul style="list-style-type: none"> • Single family dwellings • Multi family houses • Apartment houses • Other residential or residential-like buildings 	1.08	1	0.93	0.92





Primjer kalkulacije za neku poslovnu zgradu

Description	No.	Calculation	Unit	Heating	Cooling	Ventilation	Lighting
Thermal energy							
Energy demand	1		$\frac{kWh}{m^2 \cdot a}$	100	80		
Plant losses Reference case	2		$\frac{kWh}{m^2 \cdot a}$	22	28		
Energy expense for Reference class C	3	$\Sigma 1+2$	$\frac{kWh}{m^2 \cdot a}$	122	108		
BACS factor thermal Reference class C	4			1	1		
BACS factor thermal Actual case (Class B)	5			0.80	0.80		
Energy expense Actual case class B	6	$3 \cdot \frac{5}{4}$	$\frac{kWh}{m^2 \cdot a}$	98	86		
The expense of thermal energy must be distributed among various energy carrier to complete the calculation.							
Electrical energy							
Auxiliary energy class C	7a		$\frac{kWh}{m^2 \cdot a}$	5	20	21	
Lighting energy	7b						34
BACS factor electrical Reference class C	8			1	1	1	1
BACS factor electrical Actual case (class B)	9			0.93	0.93	0.93	0.93
Auxiliary energy Actual case (class B)	10	$7 \cdot \frac{9}{8}$	$\frac{kWh}{m^2 \cdot a}$	4.6	18.6	19.5	31.6





EPC alat procjenjuje BACS klasifikaciju energetske učinkovitosti vaše zgrade na temelju standarda EN 15232-1: 2017

Ključne funkcije alata su:

- Akvizicija trenutnog stanja postojećeg BACS-a i dodjeljivanje njegovih kontrolnih funkcija klasama energetske učinkovitosti A do D
- Određivanje novog stanja BACS-a nakon modernizacije i poboljšanja kontrolnih funkcija klasama energetske učinkovitosti A do D
- Određivanje godišnje potencijalne uštede energije i indikacija u odgovarajućoj valuti
- Pružanje informacija o vremenu povrata
- Brzo priređivanje prateće dokumentacije





Potencijalne uštede su izvedene prema odjeljku 6 standarda EN 15232-1:2017 u...

- litrama
- kWh
- CO₂

Posebne funkcije:

- Alat se može koristiti *online* ili lokalno na računalu
- Svi standardni web-preglednici su podržani
- Rad s alatom i standardni tekstovi za EN 15232 mogu se odabrati na različitim jezicima

Procjena automatizacije i upravljanja zgradama:

- Pomoću ukupnih ili pojedinačnih faktora prema EN 15232-1:2017
- Korištenjem ponderiranja na temelju iskustava dobivenih procjenom vrijednosti eu.bac sustava

Ako nema podataka o potrošnji zgrade (financijski troškovi i potrošnja energije (kWh, litri, m³, itd.)), korisna osnova za akcije su i potencijali uštede energije u postocima. Potrebna poboljšanja mogu se opisati u obliku kataloga mjera.

Poveznica na *online* alat <https://hittest.sbt.siemens.com/EPC-Tool/>





Kreiranje novog projekta

EPC-Tool

Energy Performance Classification Tool

BACS Energy Performance Class - EN 15232-1:2017

- High performance
BACS and TBM
- Advanced performance
BACS and TBM
- Standard
BACS
- Inefficient
BACS

BACS: Building Automation system
TBM: Technical Building Management System

► English

- Create new project
- Open existing project

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Unošenje “Informacija i projektu” i početna pohrana

EPC-Tool

new project

Project Building automation Results Info

Project information Customer information Options

Project number

Project name Office building "Step-by-step"

Street

ZIP code 6300

City Zug

Country Switzerland

Remark

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Unošenje „Informacija o klijentu“

project: Step-by-step_201801

Project Building automation Results Info

Project information Customer information Options

Company name	ECO Ltd.
Department	
Street	
ZIP code	6300
City	Zug
Country	Switzerland
Contact person	
Name	
First name	
Function	
E-mail	
Phone	
Mobile	
Fax	

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Uređivanje funkcija Status “Danas” prije uređivanja

EPC-Tool

project: Step-by-step_201801

Project **Building automation** Results Info

Today Future

1 - Heating control 2 - Domestic Hot Water supply control 3 - Cooling control 4 - Ventilation and Air Conditioning control 5 - Lighting control 6 - Blind control

7 - Technical Home and Building Management

Shall this function be included in the classification? include exclude

1.1 Emission control	No automatic control			D	
	Future: No automatic control			D	
1.2 Emission control for TABS (heating mode)	-- not applicable --				
	Future: -- not applicable --				
1.3 Control of distribution network hot water temperature (supply or return)	No automatic control			D	
	Future: No automatic control			D	
1.4 Control of distribution pumps in networks	No automatic control			D	
	Future: No automatic control			D	
1.5 Intermittent control of emission and/or distribution	No automatic control			D	
	Future: No automatic control			D	
1.6 Generator control for combustion and district heating	Constant temperature control			D	
	Future: Constant temperature control			D	

Evaluation conforming to EN 15232-1:2017 and overall performance factors.

select A select B select C select D copy to future generate document save save as cancel

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Uređivanje funkcija Padajući izbornik

EPC-Tool

project: Step-by-step_201801

Project **Building automation** Results Info

1 - Heating control 2 - Domestic Hot Water supply control 3 - Cooling control 4 - Ventilation and Air Conditioning control 5 - Lighting control 6 - Blind control

7 - Technical Home and Building Management

Today Future

Shall this function be included in the classification? include exclude

1.1 Emission control		No automatic control			D	
1.2 Emission control for TABS (heating mode)		Individual room control				
1.3 Control of distribution network hot water temperature (supply or return)		Individual room control with communication and occupancy detection			D	
1.4 Control of distribution pumps in networks		No automatic control			D	
1.5 Intermittent control of emission and/or distribution		No automatic control			D	
1.6 Generator control for combustion and district heating		Constant temperature control			D	

Evaluation conforming to EN 15232-1:2017 and overall performance factors.

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Uređivanje funkcija Definiranje klase učinkovitosti za određenu funkciju

EPC-Tool

project: Step-by-step_201801

Project **Building automation** Results Info

1 - Heating control 2 - Domestic Hot Water supply control 3 - Cooling control 4 - Ventilation and Air Conditioning control 5 - Lighting control 6 - Blind control

7 - Technical Home and Building Management

1.5 Intermittent control of emission and/or distribution Automatic control with fixed time program C
Future: No automatic control D

1.6 Generator control for combustion and district heating -- not applicable --
Future: Constant temperature control D

1.7 Heat generator control (heat pump) Variable temperature control depending on outside temperature C
Future: Constant temperature control D

1.8 Heat generator control (outdoor unit) -- not applicable --
Future: On/Off-control of heat generator D

1.9 Sequencing of different heat generators -- not applicable --
Future: Priorities only based on running time D

1.10 Control of Thermal Energy Storage (TES) charging -- not applicable --
Future: Continuous storage operation D

Energy efficiency evaluation of complete function C
Future: D

Evaluation conforming to EN 15232-1:2017 and overall performance factors.

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Pregled rezultata Rezultati „u skladu s EN15232-1:2017“

EPC-Tool

project: Step-by-step_201801

Project Building automation Results Info

Overview Energy Saving Details Financials

Function	Today		Future		Savings potential			
	Performance class	EE factors	Performance class	EE factors	[%]			
		thermal	electrical		thermal	electrical		
HVAC plant								
Heating	C			B				
Cooling	D			B				
Ventilation and air conditioning	D			A				
Overall	D			B				
Lights and blinds								
Lighting	D			A				
Blind control	D			C				
Overall	D			C				
Technical building management	D			C				
Overall classification	A	1.51	1.10	A	1.00	1.00	34	9

The savings shown in this report are indicative amounts based on the factor-based calculation method described in European Norm EN 15232:2017 Section 6. In practice, the actual savings may differ from these amounts depending on the building structure, the building equipment, the weather and building usage patterns. Any liability for the correctness of the energy saving values determined by this software and the resultant possible savings is excluded.

Evaluation conforming to EN 15232-1:2017 and overall performance factors.

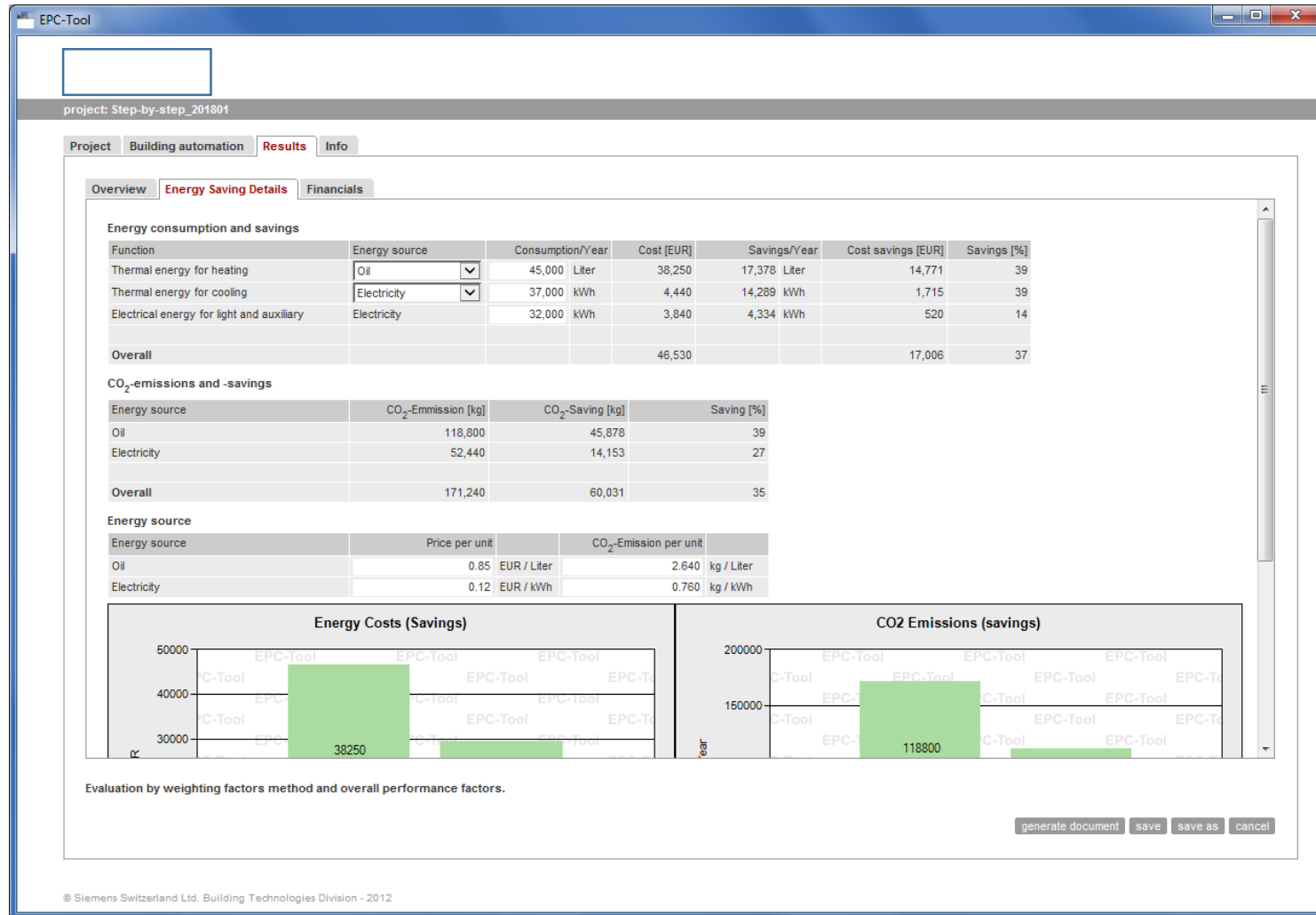
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Detalji o uštedi energije Odabir izvora energije / dodavanje potrošnje uklj. cijene i emisija CO₂





Financije

Dodatni financijski izračuni

EPC-Tool

project: Step-by-step_201801

Project Building automation Results Info

Overview Energy Saving Details Financials

	Calculation 1	Calculation 2	Calculation 3	Calculation 4
Financial calculation variant	Basic variant	no subsidies	higher energy prices	minimal variant
Cost savings [EUR]	17,006	17,006	17,006	17,006
manual adjustment factor	1.00	1.00	1.00	0.90
Total energy cost difference [EUR]	17,006	17,006	17,006	15,305
Investment for EE-functionality [EUR]	75,000	75,000	75,000	7,500
Corporate tax rate (once initially) [%]	25.0	25.0	25.0	25.0
Subsidies (once initially) [%]	5.0	0.0	5.0	50.0
Investment incl. tax red., subsidies [EUR]	52,500	56,250	52,500	1,875
Payback time for investment [years]	3.1	3.3	3.1	0.1
Cash value / Net present value (over 10 years)				
Interest rate / Discount rate [% per year]	4.0	4.0	4.0	4.0
Change of energy prices [% per year]	2.0	2.0	5.0	2.0
Addl. costs (+), savings (-) [EUR per year]	5,000	5,000	5,000	5,000
2018	-52,500	-56,250	-52,500	-1,875
2019	-40,494	-44,244	-40,494	8,430
2020	-28,815	-32,565	-28,324	18,441
2021	-17,457	-21,207	-15,990	28,164
2022	-6,413	-10,163	-3,489	37,603
2023	4,322	572	9,181	46,765
2024	14,754	11,004	22,020	55,654
2025	24,890	21,140	35,031	64,276

Evaluation by weighting factors method and overall performance factors.

add financial calculation delete financial calculation generate document save save as cancel

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Dokumenti Funkcije

<div style="border: 1px solid black; width: 100px; height: 100px; margin-bottom: 20px;"></div> <p style="text-align: center;">Energy Performance Classification Tool</p> <p style="text-align: center;">functions comparison today and future result overview result details financials list of action items</p>	<div style="border: 1px solid black; width: 100px; height: 100px; margin-bottom: 20px;"></div> <p style="text-align: right;">Office building "Step-by-step" ECO Ltd. 6300 Zug, Switzerland</p> <p style="text-align: right;">01.02.2018</p> <p>Table of contents</p> <ul style="list-style-type: none"> 1 Building automation - Today5 1.1 Heating control5 1.1.1 Emission control5 1.1.2 Emission control for TABS (heating mode)5 1.1.3 Control of distribution network hot water temperature (supply or return)5 1.1.4 Control of distribution pumps in networks5 1.1.5 Intermittent control of emission and/or distribution5 1.1.6 Generator control for combustion and district heating5 1.1.7 Heat generator control (heat pump)5 1.1.8 Heat generator control (outdoor unit)5 1.1.9 Sequencing of different heat generators5 1.1.10 Control of Thermal Energy Storage (TES) charging5 1.2 Domestic Hot Water supply control6 1.3 Cooling control6 1.3.1 Emission control6 1.3.2 Emission control for TABS (cooling mode)6 1.3.3 Control of distribution network cold water temperature (supply or return)6 																																																			
<div style="border: 1px solid black; width: 100px; height: 100px; margin-bottom: 20px;"></div> <p style="text-align: right;">Office building "Step-by-step" ECO Ltd. 6300 Zug, Switzerland</p> <p style="text-align: right;">01.02.2018</p> <p>1 Building automation - Today</p> <p>1.1 Heating control</p> <p>1.1.1 Emission control</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="background-color: #f2f2f2;">Position</td> <td>Individual room control</td> <td style="text-align: right;">C</td> </tr> <tr> <td style="background-color: #f2f2f2;">Explanation</td> <td colspan="2">Individual room control by thermostatic valves or electronic controller.</td> </tr> </table> <p>1.1.2 Emission control for TABS (heating mode)</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="background-color: #f2f2f2;">Position</td> <td colspan="2">-- not applicable --</td> </tr> <tr> <td style="background-color: #f2f2f2;">Explanation</td> <td colspan="2"></td> </tr> <tr> <td style="background-color: #f2f2f2;">Remark</td> <td colspan="2">no TABS in this building. 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Position	-- not applicable --		Explanation			Position	Demand based control	A	Explanation	E.g. based on indoor temperature control variable; actions generally lower the mean flow temperature.		Position	Variable speed pump control	A	Explanation	Variable Δp following an external demand signal, e.g. hydraulic requirement, ΔT , energy optimization.	
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Dokumenti

Usporedba „Danas” i „Budućnost”, rezultati

Office building "Step-by-step"
 ECO Ltd.
 6300 Zug, Switzerland
 01.02.2018

3 Comparison of functions between today and future

3.1 Heating control

	Today		Future	
1. Emission control	Individual room control	C	Individual room control with communication and occupancy detection	A
2. Emission control for TABS (heating mode)	-- not applicable --		-- not applicable --	
3. Control of distribution network hot water temperature (supply or return)	Outside temperature compensated control	C	Demand based control	A
4. Control of distribution pumps in networks	On off control	C	Variable speed pump control	A
5. Intermittent control of emission and/or distribution	Automatic control with fixed time program	C	Automatic control with optimum start/stop	B

Office building "Step-by-step"
 ECO Ltd.
 6300 Zug, Switzerland
 01.02.2018

5 Energy Saving Details

Evaluation by weighting factors method and overall performance factors.
 The savings shown in this report are indicative amounts based on the factor-based calculation method described in European Norm EN 15232:2017 Section 6. In practice, the actual savings may differ from these amounts depending on the building structure, the building equipment, the weather and building usage patterns. Any liability for the correctness of the energy saving values determined by this software and the resultant possible savings is excluded.

5.1 Energy consumption and savings

Function	Energy source	Consumption/Year	Cost [EUR]	Savings/Year	Cost savings [EUR]	Savings [%]
Thermal energy for heating	Oil	45,000 Liter	38,250	17,378 Liter	14,771	39
Thermal energy for cooling	Electricity	37,000 kWh	4,440	14,289 kWh	1,715	39
Electrical energy for light and auxiliary	Electricity	32,000 kWh	3,840	4,334 kWh	520	14
Overall			46,530		17,006	37

Office building "Step-by-step"
 ECO Ltd.
 6300 Zug, Switzerland
 01.02.2018

4 Results - Overview

Evaluation by weighting factors method and overall performance factors.
 The savings shown in this report are indicative amounts based on the factor-based calculation method described in European Norm EN 15232:2017 Section 6. In practice, the actual savings may differ from these amounts depending on the building structure, the building equipment, the weather and building usage patterns. Any liability for the correctness of the energy saving values determined by this software and the resultant possible savings is excluded.

Function	Today			Future			Savings potential	
	Performance class	EE factors		Performance class	EE factors		[%]	
		thermal	electrical		thermal	electrical	thermal	electrical
HVAC plant								
Heating	C			B-A				
Cooling	D-C			B-A				
Ventilation and air conditioning	D-C			A				
Overall	D-C			B-A				
Lights and blinds								
Lighting	D-C			A				
Blind control	D			C				
Overall	D-C			B				
Technical building management	D-C			C-B				
Overall classification								





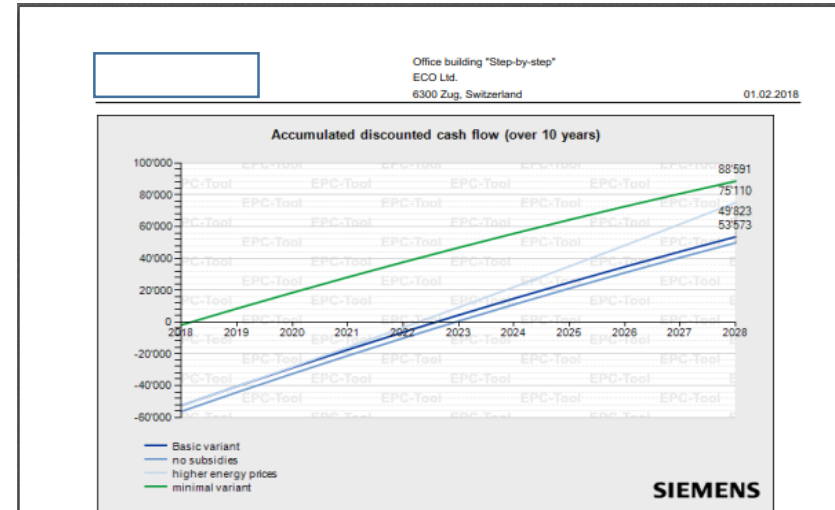
Dokumenti Financije, popis akcijskih stavki

Office building "Step-by-step"
ECO Ltd.
6300 Zug, Switzerland
01.02.2018

6 Financials

Evaluation by weighting factors method and overall performance factors.
The savings shown in this report are indicative amounts based on the factor-based calculation method described in European Norm EN 15232:2017 Section 6.
In practice, the actual savings may differ from these amounts depending on the building structure, the building equipment, the weather and building usage patterns.
Any liability for the correctness of the energy saving values determined by this software and the resultant possible savings is excluded.

	Calculation 1	Calculation 2	Calculation 3
Financial calculation variant	Basic variant	no subsidies	higher energy prices
Cost savings [EUR]	17,006	17,006	17,006
manual adjustment factor	1.00	1.00	1.00
Total energy cost difference [EUR]	17,006	17,006	17,006
Investment for EE-functionality [EUR]	75,000	75,000	75,000
Corporate tax rate (once initially) [%]	25.0	25.0	25.0
Subsidies (once initially) [%]	5.0	0.0	5.0
Investment incl. tax red., subsidies [EUR]	52,500	56,250	52,500
Payback time for investment [years]	3.1	3.3	3.1



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7 List of action items

7.1 Heating control

7.1.1 Emission control

Individual room control with communication and occupancy detection

7.1.2 Emission control for TABS (heating mode)

-- not applicable --

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

Demand based control

7.1.4 Control of distribution pumps in networks

Variable speed pump control

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7.3.2 Emission control for TABS (cooling mode)

-- not applicable --

7.3.3 Control of distribution network cold water temperature (supply or return)

Demand based control

7.3.4 Control of distribution pumps in hydraulic networks

Variable speed pump control

7.3.5 Intermittent control of emission and/or distribution

Automatic control with optimum start/stop

7.3.6 Interlock between heating and cooling control of emission and/or distribution

Partial interlock (dependent of the HVAC system)





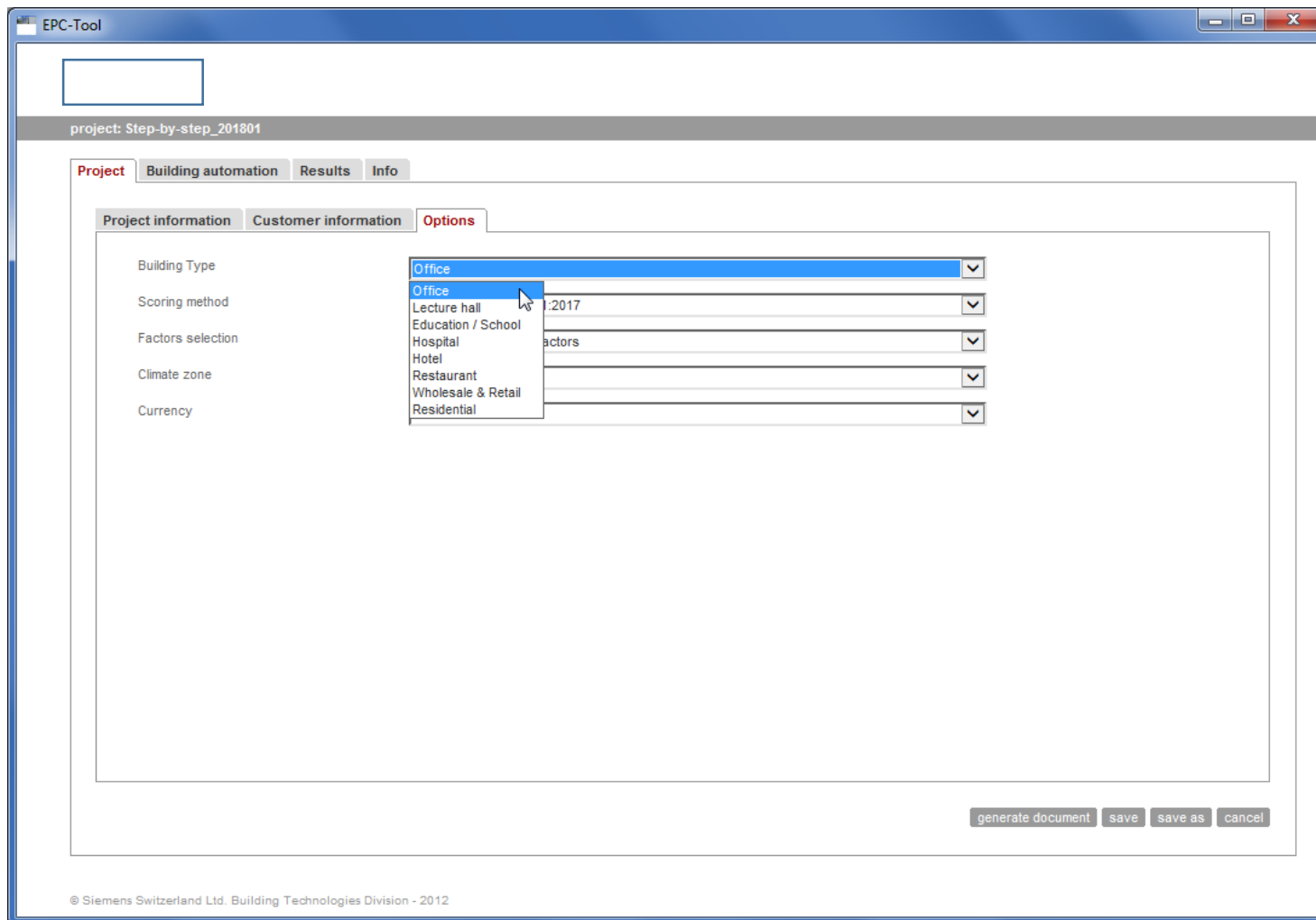
HVALA NA POZORNOSTI !

Autor:
Damir Digula
Siemens d.d.
damir.digula@siemens.com





Odabir opcija „Vrsta zgrade“





Odabir opcija „Metoda bodovanja“

project: Step-by-step_201801

Project Building automation Results Info

Project information Customer information Options

Building Type Office

Scoring method conform to EN 15232-1:2017

Factors selection Weighting factors conform to EN 15232-1:2017

Climate zone Moderate

Currency

generate document save save as cancel

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“Weighting factors” :

Weighting factors according to building type and impact on energy savings are added to the functions (see eu.bac System certification). The evaluation of the functions now appears in a bandwidth (for example C-B). This impacts the calculation of the saving potentials.

“conform to EN 15232-1:2017” :

The functions are evaluated according to their lowest evaluated sub-function





Uređivanje funkcija Prozor s informacijama

EPC-Tool

project: Step-by-step_201801

Project **Building automation** Results Info

1 - Heating control 2 - Domestic Hot Water supply control 3 - Cooling control 4 - Ventilation and Air Conditioning control 5 - Lighting control 6 - Blind control

7 - Technical Home and Building Management

Shall this function be included in the classification? include exclude

1.1 Emission control No automatic control Future:

1.2 Emission control for TABS (heating mode) -- not applicable Future:

1.3 Control of distribution network hot water temperature (supply or return) No automatic control Future:

1.4 Control of distribution pumps in networks No automatic control Future:

1.5 Intermittent control of emission and/or distribution No automatic control Future:

1.6 Generator control for combustion and district heating Constant control Future:

Evaluation conforming to EN 15232-1:2017 and overall performance factor

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close X

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

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

Position	Explanation	Reason for energy saving	EE-Class
<input checked="" type="radio"/> No automatic control		The highest design temperature of all consumers is continuously provided in distribution, resulting in significant energy losses under part load conditions.	D
<input type="radio"/> Outside temperature compensated control	Actions generally lower the mean flow temperature.	Distribution temperature is controlled depending on the outside (corresponding to the probable temperature demand of the consumers). This reduces energy losses under part load conditions.	C
<input type="radio"/> Demand based control	E.g. based on indoor temperature control variable; actions generally lower the mean flow temperature.	Distribution temperature depending on room the temperature (= controlled variable). It considers heat sources in the room as well (heat from solar radiation, people, animals, technical equipment). Keeps energy losses under part load conditions at an optimum (low).	A
<input type="radio"/> -- not applicable --			

ok cancel





Uređivanje funkcija Status “Danas” nakon uređivanja

EPC-Tool

project: Step-by-step_201801

Project **Building automation** Results Info

1 - Heating control 2 - Domestic Hot Water supply control 3 - Cooling control 4 - Ventilation and Air Conditioning control 5 - Lighting control 6 - Blind control

7 - Technical Home and Building Management

1.5 Intermittent control of emission and/or distribution Automatic control with fixed time program C

Future: No automatic control D

1.6 Generator control for combustion and district heating -- not applicable -- D

Future: Constant temperature control D

1.7 Heat generator control (heat pump) Variable temperature control depending on outside temperature C

1.8 Heat generator control (outdoor unit) -- not applicable -- D

Future: On/Off-control of heat genera D

1.9 Sequencing of different heat generators -- not applicable -- D

Future: Priorities only based on running time D

1.10 Control of Thermal Energy S -- not applicable -- D

Future: Continuous storage operation D

Energy efficiency evaluation of complete function C

Future: D

Evaluation conforming to EN 15232-1:2017 and overall performance factors.

select A select B select C select D copy to future generate document save save as cancel

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Evaluation of sub-functions

Indication for remark, “-- not applicable --”

Evaluation of function





Promjena u status “Budućnost” Kopiranje iz statusa “Danas”

The screenshot shows the EPC-Tool interface for project 'Step-by-step_201801'. The 'Building automation' tab is active, and the 'Future' status is selected. The interface lists various functions with their current status and a 'copy from today' button. A callout box points to this button with the text: "Copies '-- not applicable --' selections as well".

Function ID	Function Name	Current Selection	Today Status	Future Status
1.1	Emission control	Individual room control	Individual room control	C
1.2	Emission control for TABS (heating mode)	-- not applicable --	-- not applicable --	C
1.4	Control of distribution pumps in networks	On off control	On off control	C
1.5	Intermittent control of emission and/or distribution	Automatic control with fixed time program	Automatic control with fixed time program	C
1.6	Generator control for combustion and district heating	-- not applicable --	-- not applicable --	C

Buttons at the bottom: select A, select B, select C, select D, **copy from today**, generate document, save, save as, cancel.

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