



ODYSSEE-MURE



Monitoring, reporting and verification of energy savings in Croatia

(EED + NECP)

First Meeting of the Project “OdysseeMure fit-4-55, Monitoring the Energy Efficiency Pillar for Climate Neutrality”

Zagreb, 24th April 2023

Agenda

- Monitoring system in the context of EED
 - SMIV
- NECP reporting in the dimension Energy Efficiency

Monitoring system in the context of EED

Article 7 of EED

Legal framework for art. 7 EED in Croatia

Law on EE
(amended April 21)

- Art 7. targets are defined in Law, NEEAP and NECP
- AM defined in NEEAP and NECP
- EEOS for energy suppliers (electricity, gas, heat, oil products) – gradual introduction (300-100-50 GWh threshold)
- 50-50 AM-EEOS for 2014-2020; **30-70 AM-EEOS for 2021-2030**
- **Annual reporting**
- **M&V prescribed by by-law**

Regulation on M&V
(Revised version adopted
Sept 2021; March 2022)

- Obligatory use of **MVP (SMIV)** for subsidy providers, obligated parties, public sector and ESCOs
- BU methods for calculation of energy savings for **33 measures**

MRV provisions

- Monitoring
 - Process of data and information collection about implemented EE measures: type of measure; input data for energy saving calculation; cost of implementation, received subsidies
- Measurement
 - Calculation of new annual energy savings achieved by EE measures using prescribed methods -> always using project specific data rather than reference data prescribed in methodology
 - For measures for which methods are not prescribed, energy savings should be calculated by the authorized design engineers or energy auditors
- Reporting
 - Annually by 15th March
 - Savings from EEOS and AM
 - All other data and information required by Regulation (EU) 2018/1999
 - Reported savings to be based on data from SMiV
 - Report to be published on national web site for EE
- Verification
 - Process of confirming energy savings by the authorized body – National EE Coordination Authority within Ministry of Economy and Sustainable Development

System for M&V (SMiV)

- Developed through regional cooperation project implemented by GIZ – ORF EE
- Used since 2015
 - transfer of savings
 - stimulation of energy poverty related measures –10 to 30% higher savings are accounted
 - primary energy savings
- Obligatory tool for subsidy providers, public sector, obligated parties and ESCOs
 - Dominant user is EE Fund – subsidy provider (cca 90% of all entries)
- Data base of implemented EE measures in Croatia
 - > 26,000 EE projects
- Tool for calculation of energy savings and CO2 emission reductions
 - Calculates new and cumulative annual savings from a measure

System for M&V (SMiV)

Sustav za praćenje, mjerjenje i verifikaciju ušteda energije

Prijava

Korisničko ime:

Zaporka:

→ Prijavi se **User name / Password**

→ Promjena zaporke

Sustav za praćenje, mjerjenje i verifikaciju ušteda energije

Planovi i provedba

New implemented measure

Buildings and Public Lighting / Industry / Transport / Other

e.g. Eco-driving (T2) or Energy renovation of existing buildings (M1)

Opis plana	Vrsta plana	Lokacija	Kreirano	Kreirao
Ispraznjenje energetske učinkovitosti Međimurske županije za 2019. godinu	Županijski plan	Istarska	9.8.2018	Anita Milardović
Godišnji plan energetske učinkovitosti Međimurske županije za 2019. godinu	Županijski plan	Međimurska	21.8.2018	Alen Vlačić
Godišnji plan energetske učinkovitosti Istarske županije za 2019. godinu	Gradski plan	Slavonski Brod	4.9.2018	Irena Kozina
Godišnji plan energetske učinkovitosti Istarske županije za 2019. godinu	Županijski plan	Brodsko-posavska	5.9.2018	Katica Bošnjaković
Godišnji plan energetske učinkovitosti Istarske županije za 2019. godinu	Županijski plan	Dubrovačko-neretvanska	20.10.2018	Jurica Perko
Godišnji plan energetske učinkovitosti Istarske županije za 2019. godinu	Županijski plan	Krapinsko-zagorska	11.9.2019	Valerija Vrhček
Godišnji plan energetske učinkovitosti Istarske županije za 2019. godinu	Gradski plan	Slavonski Brod	7.11.2019	Irena Kozina
Godišnji plan energetske učinkovitosti Istarske županije za 2019. godinu	Gradski plan	Rijeka	7.11.2019	Tajana Nežnanović
Godišnji plan energetske učinkovitosti Istarske županije za 2019. godinu	Gradski plan	Rijeka	8.11.2019	Tajana Nežnanović
Godišnji plan energetske učinkovitosti Istarske županije za 2019. godinu	Županijski plan	Sisačko-moslavačka	11.11.2019	Davor Matić
Godišnji plan energetske učinkovitosti Istarske županije za 2019. godinu	Gradski plan	Pula	9.12.2019	Karmen Štanić
Godišnji plan energetske učinkovitosti Istarske županije za 2019. godinu	Gradski plan	Velika Gorica	23.12.2019	Josip Filipović
Godišnji plan energetske učinkovitosti Istarske županije za 2019. godinu	Županijski plan	Istarska	7.1.2020	Nikola Petrić
Godišnji plan energetske učinkovitosti Istarske županije za 2019. godinu	Županijski plan	Zagrebška	9.1.2020	Mihaela Mehadžić
Godišnji plan energetske učinkovitosti Istarske županije za 2019. godinu	Županijski plan	Međimurska	15.1.2020	Iva Vrankić
Godišnji plan energetske učinkovitosti Istarske županije za 2019. godinu	Županijski plan	Međimurska	16.1.2020	Iva Vrankić
Godišnji plan energetske učinkovitosti Istarske županije za 2019. godinu	Gradski plan	Zadar	20.3.2020	Ana Bajo
Godišnji plan energetske učinkovitosti Istarske županije za 2019. godinu	Županijski plan	Brodsko-posavska	13.5.2020	Katica Bošnjaković
Godišnji plan energetske učinkovitosti Istarske županije za 2019. godinu	Gradski plan	Zadar	28.5.2020	Ana Bajo
Godišnji plan energetske učinkovitosti Istarske županije za 2019. godinu	Gradski plan	Pula	10.6.2020	Karmen Štanić

Lifetime of measure

Owner of savings

Calculation results
Energy savings (kWh/a)
CO2 emissions (t)
Investment cost (kn)

Input data for
calculation of savings

Mjera - Integralna obnova postojećih zgrada (M1)

Opći podaci

Naslov mjere

Opis mjere

Vrsta mjere: Integralna obnova postojećih zgrada (M1)

Lokacija

Sektor: ZGRADARSTVO

Grupa

Vrsta goriva (stari)

Vrsta goriva (novi)

Datum provedbe

Vrijedi do

MIS kod

Lokacija mjere

Ulica i broj

Nositelj uštede

Odgovorna osoba (ime)

Odgovorna osoba (email)

Odgovorna osoba (tel)

Komentar

Sufinanciranje

Dokumenti

Uštede i troškovi

Uštede primarne energije [kWh/god]: 0,00

Ušteda energije [kWh/god]: 0,00

CO2 ušteda [t]: 0,00

Trošak mjere [kn]

Prijenos uštede

Podaci za izračun

Formula:
$$FES = \left(\frac{SHD_{init}}{\eta_{init}} - \frac{SHD_{new}}{\eta_{new}} \right) \cdot A_{heated}$$

Specifična potreba za grijanjem - Stara [kWh/m2]

Specifična potreba za grijanjem - Nova [kWh/m2]

Ploština korisne površine zgrade [m2]

Učinkovitost sustava grijanja - Stara (ukupno)

Učinkovitost sustava grijanja - Nova (ukupno)

Ili

Učinkovitost sustava grijanja - Stara (kotao)

Učinkovitost sustava grijanja - Nova (kotao)

Učinkovitost sustava grijanja - Stara (emisija)

Učinkovitost sustava grijanja - Nova (emisija)

Učinkovitost sustava grijanja - Stara (distribucija)

Učinkovitost sustava grijanja - Nova (distribucija)

Faktor normalizacije: 1,00

Calculate

Unesi Izračunaj

Title, description, type
of measure

Location (HDD)

Reference values

CONSTRUCTION_PI	BUILDING_TYPE	VALUE
prije 1940	Stambene	180,000000
prije 1940	Uslužne	180,000000
1940-1970	Stambene	250,000000
1940-1970	Uslužne	250,000000
1970-1987	Stambene	200,000000
1970-1987	Uslužne	200,000000
1987-2006	Stambene	150,000000

SMiV

Sufinanciranje

Davatelj subvencije 1

Davatelj subvencije 2

Davatelj subvencije 3

Dokumenti

Napomena: Dodavanje dokumenata moguće je nakon unosa mjere

Akcije	Naziv	Kreirano
No data to display		

Co-financing

Upload of documents (proofs) -> **Verification** -> based on proof that EE measures is actually implemented and that correct input data (based on documentation) for calculation of energy savings are used

Transfer of savings (not platform for trading – trading happens outside the System) -> contract proving transfer of savings must be delivered

Prijenos uštede

Napomena: Mjera mora biti unešena da bi se uz nju mogli dodavati prijenosi uštede

Akcije	Vlasnik uštede	Iznos [kWh]	Status	Godina	Suglasnost	Poništeno	Datum poništavanja
Vlasnik uštede	<input type="text"/>	Iznos [kWh]	<input type="text"/>	Godina	<input type="text"/>		
Status	<input type="text"/>		<input type="text"/>				
Suglasnost	<input type="checkbox"/>				Poništeno	<input type="checkbox"/>	
Datum poništavanja	<input type="text"/>						

Sustav za praćenje, mjerenje i verifikaciju ušteda energije

Planovi i provedba Planiranje

Pregled mjera

Jedinica energije: Jedinica CO2:

Pretraga Prikladno **Izvezi** Promijeni kolone

Export to Excel for analyses (reporting)

Drag a column header here to group by that column

Akcije	SMiV ID	Zaključano	Nositelj uštede	Naslov mjere	Opis mjere	Vrsta mjere	Lokacijska razina 1	Lokacijska razina 2	Lokacijska razina 3	Lokacijska razina 4	Lokacijska razina 5	Ušteda energije	CO2 ušteda	Trošak mjere [kn]	Vrijedi od	Naziv entiteta	Entitet (šifra)	Vrsta goriva (stari)	Vrsta goriva (novi)	Sektor	Grupa	Status
	25	<input checked="" type="checkbox"/>		solar water heating	solar water heating	Instalacija solarnog toplinskog sustava za pripremu PTV (M7)	Hrvatska					350.000,00	131.600,00	2.000,00	23.12.2013			Električna energija	Električna energija	ZGRADARSTVO		Obrisan
	26	<input checked="" type="checkbox"/>		Osnovna Skola Kustosija Zagreb	Promjena kotla loženog tečnim gorivom s kotlom na proredni plin	Integralna obnova postojećih zgrada (M1)	Hrvatska	Zagrebačka	Zagreb			149.017,86	43,45	45.000,00	02.09.2013			Ekstra lako loživo uje	Prirodni plin	ZGRADARSTVO		Obrisan
	27	<input checked="" type="checkbox"/>		Obnova osam škola u Zagrebu	Postavljanje izolacije na zidove i krovove u osam osnovnih škola u Zagrebu	Obnova toplinske izolacije (M2)	Hrvatska	Zagrebačka	Zagreb			2.310.776,47	610,05	646.525,00	01.08.2012			Ekstra lako loživo uje	Ekstra lako loživo uje	ZGRADARSTVO		Obrisan
	30	<input checked="" type="checkbox"/>		Obnova pet osnovnih škola u Sisku	Postavljanje izolacije i promjena sustava grijanja	Integralna obnova postojećih zgrada (M1)	Hrvatska	Sisačko-moslavačka	Sisak			2.810.136,55	905,17	403.000,00	25.07.2012			Lako loživo uje	Prirodni plin	ZGRADARSTVO		Obrisan
	31	<input checked="" type="checkbox"/>		Primjena fiventnih regulatora u proizvodnom procesu	Primjena fiventnih regulatora za pumpe i rashladnu masinu	Mjere u industriji (I99)	Hrvatska	Zagrebačka	Zagreb			2.500.000,00	450,00	500.000,00	15.11.2012					INDUSTRIJA		Obrisan
	32	<input checked="" type="checkbox"/>		Promjena javne rasvjete u gradu Sisku	Program sustavne promjene javne rasvjete na glavnim gradskim prometnicama u Sisku	Instalacija ili zamjena javne rasvjete (M12)	Hrvatska	Sisačko-moslavačka	Sisak			270.600,00	101,75	200.000,00	06.09.2011			Električna energija	Električna energija	ZGRADARSTVO		Obrisan
	35	<input checked="" type="checkbox"/>		Solarni sustav za zagrijavanje potrošne tople vode	Solarni sustav za zagrijavanje potrošne tople vode za dom za starije osobe Kantrida u Rijeci	Instalacija solarnog toplinskog sustava za pripremu PTV (M7)	Hrvatska	Primorsko-goranska	Rijeka			55.000,00	11,06	0,00	01.01.2007			Prirodni plin	Solarna energija	ZGRADARSTVO		Obrisan
	36	<input checked="" type="checkbox"/>		Optimizacija sustava javne rasvjete Grada Koprivnica	Zamjena postojećih svjetiljki novim te regulacija sustava	Mjere u ostalim sektorima (O99)	Hrvatska	Koprivničko-križevačka				86.655,93	31,34	3.091.252,26	01.01.2009					DRUGO	JAVNA RASVJETA	Obrisan
	37	<input checked="" type="checkbox"/>		Rekonstrukcija javne rasvjete na području Općine Sunja	Zamjena postojećih svjetiljki te regulacija sustava	Mjere u ostalim sektorima (O99)	Hrvatska	Sisačko-moslavačka				188.785,62	70,98	1.513.437,50	01.01.2013					DRUGO		Obrisan
	38	<input checked="" type="checkbox"/>		Javna rasvjeta Grad Osijek-naselje Težja	Zamjena postojećih svjetiljki	Mjere u ostalim sektorima (O99)	Hrvatska	Osječko-baranjska	Osijek			135.072,00	50,79	466.953,78	01.01.2010					DRUGO		Obrisan
	39	<input checked="" type="checkbox"/>		Javna rasvjeta Grad Osijek-naselje Vršinec	Izgradnja javne rasvjete	Mjere u ostalim sektorima (O99)	Hrvatska	Osječko-baranjska	Osijek			291.564,00	109,63	2.428.882,26	01.01.2010					DRUGO		Obrisan
	40	<input checked="" type="checkbox"/>		Javna rasvjeta Grad Osijek-Uli J.J. Strossmayera, naselje Sjenjak, Uli. M.Gupca, naselje Klisa	Rekonstrukciju postojeće javne rasvjete na tri gradske lokacije (Uli. J.J. Strossmayera, naselje Sjenjak, Uli. M.Gupca) te novu izgradnju javne rasvjete u naselju Klisa, Dalmatinska ul.	Mjere u ostalim sektorima (O99)	Hrvatska	Osječko-baranjska	Osijek			548.108,00	206,09	2.176.435,80	01.01.2011					DRUGO		Obrisan
	41	<input checked="" type="checkbox"/>		Javna rasvjeta Grad Ivanec	Ugradnja nove regulacije sustava	Mjere u ostalim sektorima (O99)	Hrvatska	Varaždinska				169.854,00	63,87	518.000,00	01.01.2012					DRUGO		Obrisan
	42	<input checked="" type="checkbox"/>		Javna rasvjeta Grad Ivanec	Zamjena postojećih svjetiljki	Mjere u ostalim sektorima (O99)	Hrvatska	Varaždinska				264.260,00	99,36	1.463.482,54	01.01.2010					DRUGO		Obrisan
	43	<input checked="" type="checkbox"/>		Javna rasvjeta Općina Marija Gorica-faza 1	zamjena postojećih svjetiljki	Mjere u ostalim sektorima (O99)	Hrvatska	Zagrebačka				72.786,36	23,37	853.318,79	01.01.2009					DRUGO		Obrisan
	44	<input checked="" type="checkbox"/>		Javna rasvjeta Općina Marija Gorica-faza 2	zamjena postojećih svjetiljki te izgradnja novih	Mjere u ostalim sektorima (O99)	Hrvatska	Zagrebačka				178.464,00	67,10	632.092,02	01.01.2011					DRUGO		Obrisan
	45	<input checked="" type="checkbox"/>		Javna rasvjeta Grad Ivanič-Grad	Rekonstrukcija javne rasvjete u ulicama Matije Gupca, Beličevoj ulici, Moslavačkoj ulici, Babočevoj ulici i Cundičevoj ulici te ugradnje regulabilne prigušnice	Mjere u ostalim sektorima (O99)	Hrvatska	Zagrebačka				82.880,12	31,16	1.480.326,84	01.01.2009					DRUGO		Obrisan
	46	<input checked="" type="checkbox"/>		Javna rasvjeta Općina Nerežišća	Zamjena postojećih svjetiljki	Mjere u ostalim sektorima (O99)	Hrvatska	Špiltsko-dalmatinska				52.290,00	19,66	390.000,00	01.01.2006					DRUGO		Obrisan
	47	<input checked="" type="checkbox"/>		Javna rasvjeta Grad Vukovar	Zamjena svjetiljki u ulicama (ulica Trpinjka cesta, A Stepinca, Zupanijska, A Bauera, Frankopanska, Tig Krajja Tomislava, N. Andrića, S. Andrića, Bana J. Jelačića	Mjere u ostalim sektorima (O99)	Hrvatska	Vukovarsko-srijemska				297.000,00	111,67	1.204.237,60	01.01.2009					DRUGO		Obrisan
	48	<input checked="" type="checkbox"/>		Javna rasvjeta Grad Rijeka	Zamjena postojećih svjetiljki	Mjere u ostalim sektorima (O99)	Hrvatska	Primorsko-goranska	Rijeka			615.303,57	231,35	2.997.871,24	01.01.2011					DRUGO	JAVNA RASVJETA	Obrisan

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All analyses for evaluation and reporting purposes are done outside SMiV

Lessons learned

- Art.7 targets are very tough to achieve -> but art.7 has become the single most important driver for energy savings
- M&V system is critical for evaluating the progress
 - IT platform is a practical and comprehensive way of collecting all the data
 - Subsidy providers (EE Fund) qualified and experienced for entries
 - Obligated parties – struggle, especially smaller -> clearer guidelines needed
 - In Croatian case, upgrade should be directed towards enabling analytical functions -> easier reporting
- Verification based on documentation (evidence)
 - Huge amount of paperwork to be delivered (often not possible to upload in the system)
 - New regulation introduces Report of energy savings – systematic representation of saving calculation and accompanying evidence – prepared by authorised experts (design engineers, energy auditors) -> facilitates the verification process

NECP reporting in the dimension Energy Efficiency

1st report 2023

Overview of required report

Annex 1	Decarbonisation: GHG emissions
Annex 2	Decarbonisation: renewable energy
Annex 4	Energy Efficiency
Annex 5	Energy Security
Annex 6	Internal energy Market
Annex 7	Research, Innovation and Competitiveness
Annex 8	National objectives to phase out energy subsidies, in particular fossil fuels
Annex 9	Policies and measures
Annex 10	New policies and measures pursuant to Article 21, point (b) 3 of Regulation (EU) 2018/1999
Annex 11	Information on the energy savings achieved under Article 7 of Directive 2012/27/EU
Annex 12	Reporting in accordance with Article 5 of Directive 2012/27/EU
Annex 13	Progress towards financing
Annex 14	Air Quality
Annex 15	Policies and measures to phase out energy subsidies, in particular for fossil fuels
Annex 16	Additional reporting obligations in the area of renewable energy
Annex 17	Additional reporting obligations in the area of energy efficiency
Annex 18	Energy Poverty
Annex 19	Energy Poverty
Annex 20	Information on how the implementation of the integrated national energy and climate plan contributes to just transition, the promotion of both human rights and gender equality, and addressing inequalities in energy poverty
Annex 21	Implementation of regional cooperation
Annex 22	Reporting on implementation of recommendations referred to in Article 32(1) or (2) of Regulation (EU) 2018/1999
Annex 23	Reporting on multilevel climate and energy dialogue referred to in Article 11 of Regulation (EU) 2018/1999

Main EE reporting requirements

Table 1: National contribution and indicative trajectory for primary and final energy consumption

Reporting element	Specification	Unit	Indicator	
Reporting Year (X)	2023			
Definition of the 2030 savings contribution ⁽¹⁾	M	n/a		
Description of the 2030 contribution and indicative trajectory from 2021-2030	M	n/a		
Value of the savings contribution 2029	M			
Translation into absolute level of PEC	M	ktoe		
Translation into absolute level of FEC	M	ktoe		
			X-3 ⁽⁴⁾	X-2
Baseline GDP level, if the contribution is set as an intensity target	M _{iap}	Million-euro, chain-linked volumes ⁽³⁾		
General comments on the national contribution and indicative trajectory for primary and final energy consumption ⁽⁵⁾	V			

Main EE reporting requirements

Table 2: Milestones and progress indicators of the long-term strategy for the renovation of the national stock of residential and non-residential buildings – building stock

Reporting Year (X) 2023

Specification	Number of buildings ⁽¹⁾			Total floor area (m ²) ⁽²⁾			Primary energy use of buildings (TJ) ⁽³⁾			Final energy use of buildings (TJ) ⁽³⁾			Direct GHG emissions in buildings (tCO _{2e})			Total GHG emissions in buildings (tCO _{2e})			Other ⁽⁴⁾		
	2020	X-3	X-2	2020	X-3	X-2	2020	X-3	X-2	2020	X-3	X-2	2020	X-3	X-2	2020	X-3	X-2	2020	X-3	X-2
Residential buildings	M _{1,av}	M _{1,av}	M _{1,av}	M _{1,av}	M _{1,av}	M _{1,av}	M _{1,av}	M _{1,av}	M _{1,av}	M _{1,av}	M _{1,av}	M _{1,av}	M _{1,av}	M _{1,av}	M _{1,av}	M _{1,av}	M _{1,av}	M _{1,av}	M _{1,av}	M _{1,av}	M _{1,av}
Of which worst performing buildings ⁽⁵⁾																					
Non-Residential buildings																					
Of which worst performing buildings																					
Public buildings ⁽⁶⁾																					
Of which worst performing buildings																					

Main EE reporting requirements

Table 3: Milestones and progress indicators of the long-term strategy for the renovation of the national stock of residential and non-residential buildings – renovation rates⁽¹⁾

Reporting Year (X) 2023

Specification		Number of buildings renovated		Total floor area renovated (m ²) ⁽²⁾		Renovation rate ⁽³⁾		Deep renovation equivalent rate ⁽⁵⁾	
		X-3	X-2	X-3	X-2	X-3	X-2	X-3	X-2
		M _{max}	M _{max}	M _{max}	M _{max}	M _{max}	M _{max}	V	V
Residential buildings	Light								
	Medium								
	Deep								
	Total								
Residential buildings - worst performing	Light								
	Medium								
	Deep								
	Total								
Non-residential buildings	Light								
	Medium								
	Deep								
	Total								
Non-residential buildings - worst performing	Light								
	Medium								
	Deep								
	Total								
Public buildings ⁽⁴⁾	Light								
	Medium								
	Deep								
	Total								
Public buildings - worst performing	Light								
	Medium								
	Deep								
	Total								

Examples of additional reporting requirements

Table 5: Number and floor area of new and renovated nearly zero-energy buildings ⁽¹⁾ in year X-2 and X-1, as provided in Article 9 of Directive 2010/31/EU, where necessary based on statistical sampling

Reporting Year (X) 2023

Reporting element	Specification	Number		Total floor area (m ²)	
		X-2	X-1	X-2	X-1
Residential sector: Total	M _{ia,v}				
Residential sector: New NZEBs	V				
Residential sector: Renovation	V				
Non-residential (private): Total	M _{ia,v}				
Non-residential (private): New NZEBs	V				
Non-residential (private): Renovation	V				
Non-residential (public ⁽²⁾): Total	M _{ia,v}				
Non-residential (public): New NZEBs	V				
Non-residential (public): Renovation	V				

Definition of nearly zero-energy buildings⁽³⁾ V

Number of large companies ⁽¹⁾ to which Article 8(4) of Directive 2012/27/EU applies	M	number		
Number of energy audits carried out in large companies to which Article 8(4) of Directive 2012/27/EU is applicable	M	number		

Reporting on policy measures

PaM number	Unit	Vulnerable households addressed ⁽²⁾	Final energy savings achieved through national EEOs referred to in Article 7a of Directive 2012/27/EU or alternative measures adopted in application of Article 7b of that Directive (excl. Article 7(4), point (c) of that Directive)			Of which final energy savings achieved by PaMs aimed at alleviation of energy poverty in line with Article 7(11) of Directive 2012/27/EU			Amount of final energy savings achieved in accordance with Article 7(4), point (c) of Directive 2012/27/EU		
			Total annual end-use savings achieved in Year X-2 ⁽³⁾	Thereof, savings achieved in Year X-2 only from <u>new actions</u> that were implemented in Year X-2	Total cumulative end-use savings achieved from 2021 to Year X-2	Total annual end-use savings achieved in Year X-2 ⁽³⁾	Thereof, savings achieved in Year X-2 only from <u>new actions</u> that were implemented in Year X-2	Total cumulative end-use savings achieved from 2021 to Year X-2	Total annual end-use savings achieved in Year X-2 ⁽³⁾	Thereof, savings achieved in Year X-2 only from <u>new actions</u> that were implemented in Year X-2	Total cumulative end-use savings achieved from 2021 to Year X-2
M		M	M	M	M	<u>M_{jan}</u>	<u>M_{jan}</u>	<u>M_{jan}</u>	<u>M_{jan}</u>	<u>M_{jan}</u>	<u>M_{jan}</u>
<u>PaM 1</u>	<u>ktoe</u>										
<u>PaM 2</u>	<u>ktoe</u>										
<i>Add further rows, as needed</i>	<u>ktoe</u>										

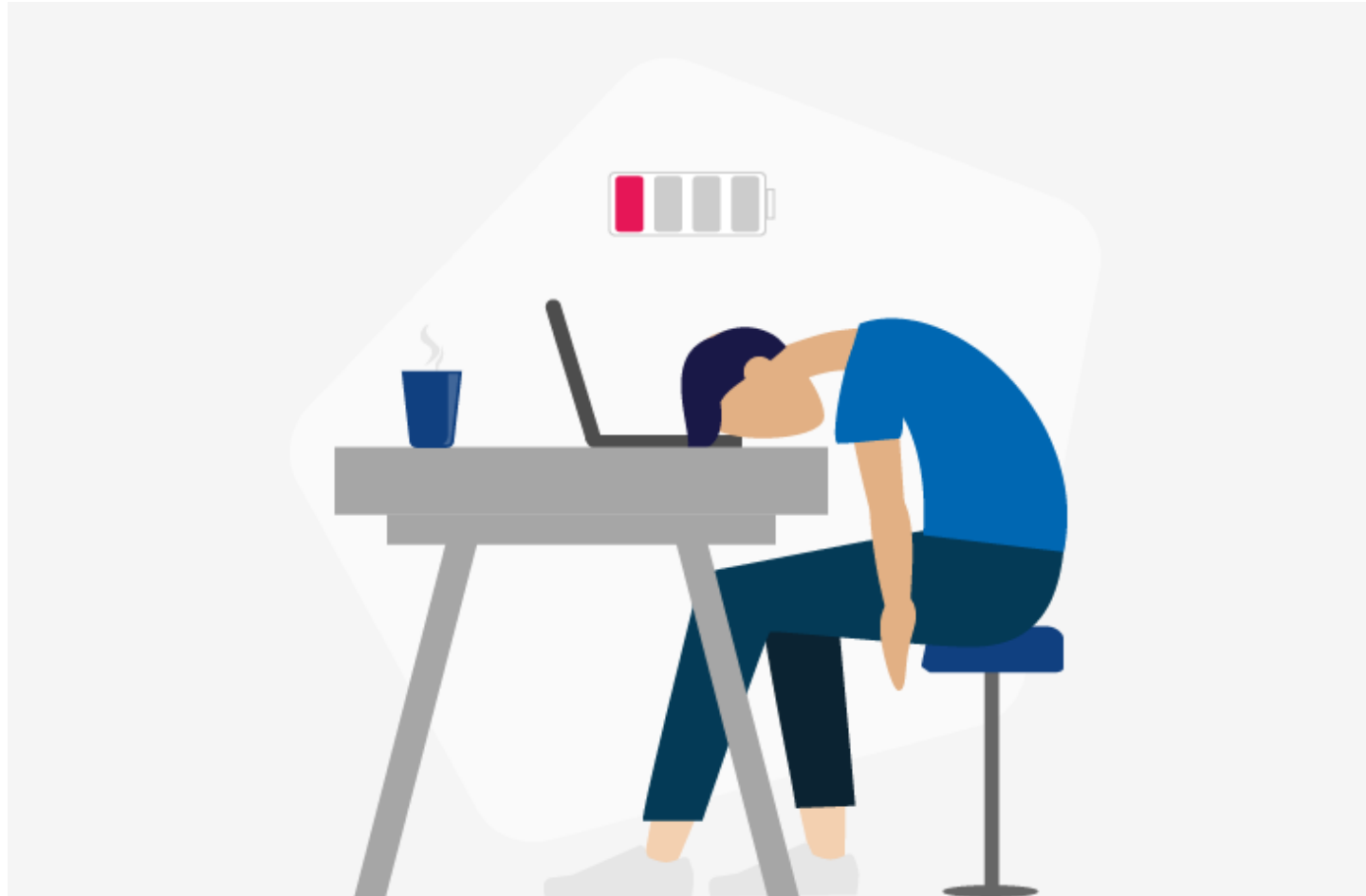
Reporting on policy measures

PaM number(s) the reporting concerns (2)	Eligible technologies/ solutions	Initial investment assumptions (EUR)		Actual investments up to and including year X-2 (EUR)							Actual investments still to be implemented (EUR)	
		Value	Price year	National public funding	Total EU funding	Of which RRF funding	Of which European Regional Development Fund and/or Cohesion Fund	Private funding (where available)	Price year	Description of source	Value	Price year
M	V	M		M	M	M	M	<u>M_{ia,y}</u>	M	M	M	
<u>PaM</u> 1, or a group of <u>PaM</u>												

NECP reporting experience

- Huge amount of data required
- Especially strong requirements related to buildings
- Annually
 - Number of buildings by purpose (residential, non-residential, public sector) + area, share of buildings with the worst characteristics, primary energy consumption, final energy consumption, emissions
 - Number and area of renovated buildings according to the depth of renovation (by purpose, with the share of buildings with the worst characteristics)
 - Number and area of nZEB (new, renovated) by purpose (residential, non-residential, public sector)
- For every measure (EEOS and AM)
 - detailed information on the implementation and especially on the method for determination of savings (including share of energy poor)
 - renovation of central government buildings
 - Financing (required investments, realized investments by year, co-financing from public sources, of which national, EU, RRF, ERDF)

NECP reporting experience - conclusion





Thank you for your attention!

Vesna Bukarica, Ph.D.

Department for Energy Efficiency

+385 99 532 6134

vbukarica@eihp.hr