



# M&V in Croatia – sticks and carrots

M&V platform SMIV

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- Useful reports:
  - European best practices for M&V schemes and coordination mechanisms
  - Report on General Formulae of Bottom-Up Methods
  - Synthesis report on M&V schemes and coordination mechanisms in EU countries
  - Analytical framework for mapping and analysis

## Publications

### European best practices for M&V schemes and coordination mechanisms

Report

25 Apr 2016

What can we learn from European best practices on the existing M&V schemes and coordination mechanisms in Europe? Why do countries without an established centralized structure implement more efficient M&V schemes? Which countries have introduced more efficient coordination mechanisms, and what are their functioning structures?

[Read more](#)

### Report on General Formulae of Bottom-Up Methods

Report

02 Feb 2016

How to evaluate the impact of energy efficiency measures and the achievement of energy efficiency targets on national, regional or local level? The multEE project has compiled a comprehensive report with a variety of methods to calculate energy savings from single energy efficiency measures.

### Synthesis report on M&V schemes and coordination mechanisms in EU countries

Report

30 Nov 2015

The report presents the results of the mapping of the existing M&V schemes and coordination mechanism in the 28 Member States plus the FYR of Macedonia. The collection of the data for the mapping and the analysis of the existing M&V schemes and coordination mechanisms were performed with a common methodology, which was based on a specialized questionnaire.

[Read more](#)

### Analytical framework for mapping and analysis

Report

15 Jul 2015

The current report aims at the establishment of the appropriate framework for the effective identification and evaluation of the existing M&V schemes and coordination mechanisms in the EU28 and the FYR of Macedonia.



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#### Related Projects



# Why Croatia?

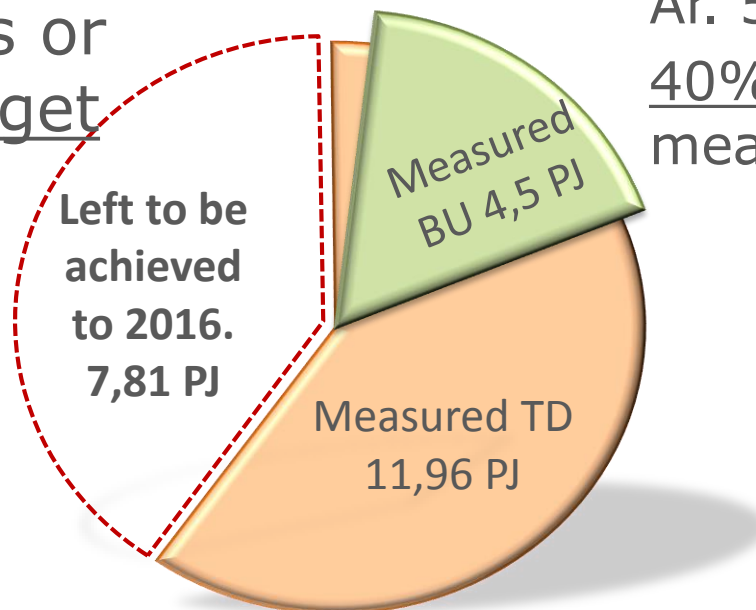
- Croatia still struggles with EE, but...

2<sup>nd</sup> NEEAP:

**38%** of savings or  
**23%** of our target  
measured **BU!**

2015:

Ar. 5 **200%**  
40% of our target  
measured **BU!**



Croatia's EE target after 2<sup>nd</sup> NEEAP

# SMIV - System for Monitoring, Measurement and Verification of Energy Savings



- in line with the Croatian NEEAP
- Measures targets under EED (**Article 3, 5 and 7 targets**)
- M&V started as a project in cooperation with GIZ in 2008
- has become an official Croatian M&V tool through the new EE Act (OG 127/2014)
- integral monitoring through SMIV involves the following:
  - Collecting all public EE plans and uploading them to the system. All measures mentioned in the plan are linked to the provided algorithms in SMIV.
  - Bottom-up monitoring of EE targets under Article 3 EED
  - Bottom-up monitoring of EE targets under Article 7 EED – since all measures are in the same system, there is a diminished possibility of double counting.
  - Monitoring of EE targets under Article 5

# Main Actors and Instruments



UNDP EE project SEM  
**Sustainable energy management** in public buildings

**EMIS** – Energy Management Information System

**'Eco Fund'**  
– Croatian  
Fund for  
Environmental  
Protection and  
Energy  
Efficiency



## Carrots

- Eco fund –34%
- Operational Programme Competitiveness and Cohesion
- Competition among local governments

## Sticks

- Obligatory data monitoring and delivery:
  - Companies providing energy service contracts
  - Public sector
  - Subsidy providers
- Fines for physical person responsible (e.g. mayor, prefect, minister) and the public body  
~ 1000 – 80.000 €

When planning **EE measures**, funding needs to be ensured in the local **budget!**

- Competition among local governments = benchmarking, ideas



## Planning EE measures on local level

- Template is given, but flexible
- An **necessity** is having each measure covered in the budget

When planning **EE measures**, funding needs to be ensured in the local **budget**!

- In the MVP tool plans are connected to NEEAP
- Achieved measures are connected to plans



# Including all sectors

## Public sector

- Planning
- SMIV
- EMIS

## Distributors

- Planning

## Large companies, industry

- Energy audits

## Financial Institutions

- Planning

## SMEs

- Eco Fund

## Residential

- Eco Fund



- 6142 measures registered so far, 5000 are insulation
- 30 local EE plans entered into SMIV
- Savings verified in 2015.: cca 0,61 PJ
- 80 educated users

No double-counting!

Locatio	Energy savings	CO2 savings (t)	Measure cost	subvention (kn)	Sector	Group	
Splitsko-dalmatinska	9.438.889	2.520	68.140.514	23.018.658	ZGRADARSTVO	USLUŽNI J.	
Grad Zagreb	1.947.450	456	62.478.120	15.736.404	ZGRADARSTVO	KUĆANST	
Grad Zagreb	Zagreb-M	1.478.701	405	3.526.493	1.410.597	ZGRADARSTVO	USLUŽNI J.
Krapinsko Krapina	1.311.855	265	2.698.973	729.865	ZGRADARSTVO	KUĆANST	
Grad Zagreb	Zagreb-M	1.216.532	333	2.526.603	1.010.641	ZGRADARSTVO	USLUŽNI J.
Zagrebačk	Zagreb-M	1.121.828	227	2.850.618	760.185	ZGRADARSTVO	KUĆANST
Koprivničk	Koprivnica	1.016.830	205	1.533.374	613.350	ZGRADARSTVO	USLUŽNI J.
Koprivničk	Koprivnica	904.045	183	2.190.287	876.115	ZGRADARSTVO	USLUŽNI J.
Sisačko-moslavačka	807.796	221	609.897	243.959	ZGRADARSTVO	KUĆANST	
Karlovačk	Karlovac	761.097	203	2.268.031	907.212	ZGRADARSTVO	KUĆANST

# MultEE partner-countries' status:

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## Partners **adopting** M&V platform (localized):

- Lithuania, Latvia, Slovakia, Macedonia, Greece

## Partners with **already implemented** M&V platform:

- Austria, Croatia

## Partners and beneficiaries who **did not** opt for M&V platform:

- Germany – has local implementation and TD approach
- Denmark – has developed system for monitoring EEOs

## Others through GIZ: Ukraine, Moldova

- List of BU measures suggested by country's official Methodology
- Translation of all terms and expression used in MVP
- Check and input of reference values in MVP code-table according to country's recommendation
- Transfer to local server
- MVP administrator training

Thank you!



## More about SMIV:

<http://cei.hr/en/smiv-system-measuring-and-verifying-energy-savings/>

## More about MultEE M&V platform:

GIZ & Open regional funds for South-East Europe – Energy Efficiency

<https://www.giz.de/en/worldwide/31746.html>

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