



AYEP

SUSTAINABLE ENERGY DEVELOPMENT AGENCY BULGARIA



SEDA

## EEOS in Bulgaria

Tsvetomira Kulevska  
SEDA Bulgaria



## Content

- ✍ The EEO Scheme in Bulgaria
- ✍ Results of the implementation
- ✍ Energy Efficiency Improvement Activities and Measures
- ✍ Now to prove the obtained energy savings?
- ✍ Specific methodologies for energy savings assessment
- ✍ Monitoring and verification process. Energy Savings Certificates
- ✍ Draft EE Law



## The EEO Scheme



### Before EED:

- Period of obligation: 2008-2016
- Three groups of obligated persons: Energy dealers with annual sales more than 75 GWh, Municipal and State administrations and owners of Industrial enterprises with annual consumption more than 3 000 MWh
- Transport - included
- Different way of calculating the target
- Non-cumulative individual targets

### After EED:

- Period of obligation: 2014-2020
- Obligated persons – energy dealers (different threshold for the different types of fuel/energy)
- Fuels for Transport – excluded
- Cumulative scheme

Year	Obligations excl. transport and with full use of the 25 % reduction permitted by Article 7(2) ktoe
2014	69,38
2015	138,75
2016	208,13
2017	277,50
2018	346,88
2019	416,25
2020	485,63

Year /ktoe	2014	2015	2016	2017	2018	2019	2020
2014	61,7	61,7	61,7	61,7	61,7	61,7	61,7
2015		61,7	61,7	61,7	61,7	61,7	61,7
2016			75,2	75,2	75,2	75,2	75,2
2017				75,2	75,2	75,2	75,2
2018					77,1	77,1	77,1
2019						77,1	77,1
2020							78,3

1% annually for 2014 and 2015;  
 1.25% annually for 2016 and 2017;  
 1.50% annually for 2018, 2019 and 2020

## Results of the implementation

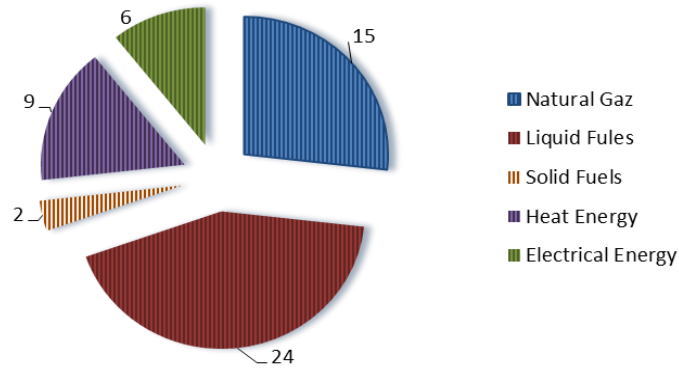
Annual report of the NEEAP's implementation for 2015:

Obligated parties	Individual energy savings targets 2016 GWh/ann.	Results 2008-2013 GWh/ann.	Results 2008-2015 GWh/ann.	Share of the total target %
Owners of municipal and state buildings	521	914,6	1 015,3	194,9
Owners of industrial enterprises	839	317,5	530	63,2
Energy dealers	4 644	1 743,4	2 010,8	43,4



**Results of the implementation – energy traders**

*Number of energy dealers with individual energy savings target by type of fuel/energy*



	First NEEAP 2008-2010	Second NEEAP 2011-2013	NEEAP 2014	NEAAP 2015	Total
Energy savings, GWh/ann.	809,0	934,4	173	94,4	2 010,8

Total energy savings target to 2016 **4 644 GWh**

Results up to 2015 **43 %**



## The Obligation Scheme in the Energy Efficiency Act, May 2015

The target shall be reduced by up to 25 per cent by excluding the volume of sales of energy used in **industrial activities listed in Annex 1 to the Climate Change Mitigation Act and by applying Items 1 and 2 of Paragraph (5) and Items 1 and 2 of Article 16 herein.**

### Article 16:

Reporting the fulfilment of the individual annual targets, the obligated parties may count, in addition to amounts of energy saved among final customers, amounts of energy saved resulting:

1. from measures newly implemented since the 31st day of December 2008 that continue have an impact until the 31st day of December 2020;
2. from energy efficiency improvement measures in energy production, transmission and/or distribution;
3. obtained in the four previous or three following years.



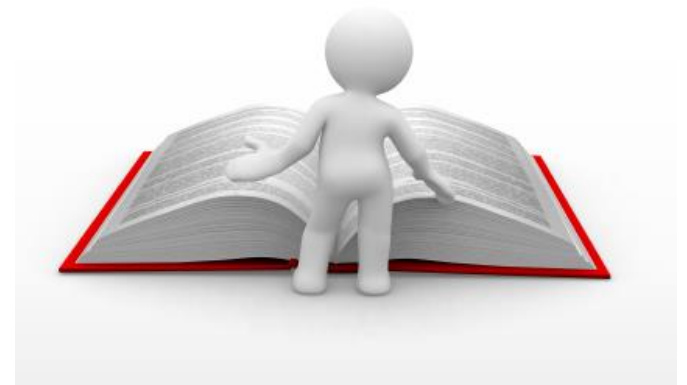
## Energy Efficiency Improvement Activities and Measures

*Subject of special Ordinance under EE Law*

Energy efficiency improvement measures shall be the actions that lead to **verifiable, measurable or estimable energy efficiency improvement in final energy consumption**, as well as in energy production, transmission and distribution.

*There shall be the following energy efficiency improvement activities:*

1. reduction of energy expenditure in energy production, transmission and distribution, as well as in final energy consumption;
2. training and attainment of qualification in the field of energy efficiency of persons delivering energy efficiency services;
3. conformity assessment of development-project designs of buildings as regards energy efficient requirements;
4. energy efficiency audits and certification of buildings;
5. energy efficiency inspection of heating systems with hot-water boilers and air-conditioning systems in buildings;
6. energy efficiency audits of enterprises, industrial systems and outdoor lighting systems;
7. energy efficiency management;
8. delivery of energy efficiency services;
9. raising awareness among households.





## Eligible measures categories

The eligible measures for obtaining energy savings in final consumption must satisfy the following conditions:

1. Their payback time must not be longer than the lifetime of the corresponding measures;
2. They must save primary energy resources;
3. They must reduce greenhouse gas emissions;
4. They must not damage the quality of the environment;
5. They must not damage sanitary and hygiene elements.



In order to reach their targets, the obligated parties may:

- ✓ offer competitively priced energy efficiency services through an energy efficiency service provider.
- ✓ pay contributions to the Energy Efficiency and Renewable Sources Fund or other specialized funds.
- ✓ conclude agreements with energy efficiency service providers or other non-obligated parties on transfer of energy savings by means of transfer of energy savings certificates

**Incentive:** To fulfil the individual energy savings targets, the obligated parties may benefit from a reduction of the individual annual target by 1% by:

- Annually, not later than the 1st day of March, the obligated parties shall provide to the mayor of the municipality concerned information on the amount of energy sold to final customers within the territory of the municipality for the previous year





## Now to prove the obtained energy savings?

The energy savings obtained shall be proved **not earlier than one year after the introduction of the energy efficiency improvement measures** among final customers by means of:

- ✓ an **energy efficiency audit** of buildings, enterprises, industrial systems or outdoor lighting systems, inspection of heating systems with hot-water boilers and air-conditioning systems, or
- ✓ applying the **specific methodologies** developed according to the requirements established by a special ordinance under EE Law.

The energy savings obtained shall be proved by the persons in SEDA's public register – the energy auditors.

The methodologies used to assess the effect of the various types of energy efficiency improvement measures implemented shall be verified by SEDA.





## Specific methodologies for energy savings calculation (*scaled savings*)

### Main requirements:

- ✓ One measure – one specific methodology
- ✓ “Bottom-Up” approach
- ✓ Template for methodology development

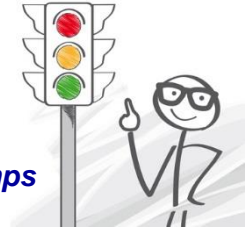
**Up to date:** 12 specific methodologies officially adopted  
50 specific methodologies ready for adoption

Measure what is  
measurable, and make  
measurable what is  
not so.

Galileo Galilei



## Specific methodologies for energy savings assessment - Example



**Methodology for energy savings assessment from measure “Replacement of incandescent traffic light lamps with led traffic light lamps” – Public Sector**

**DEFINITION OF ENERGY SAVINGS:** Calculation methodology takes into account the difference between performance efficiency of machinery typologies before and after the LED installation.

### Final energy savings

$$FES_{kWh} = \Delta P * h * 10^{-3} \text{ (kWh/y/uref)}$$

Where: FES<sub>kWh</sub>, final energy savings per unit (kWh/year/uref)

$\Delta P$ : P<sub>inc</sub> - P<sub>led</sub> (W)

P<sub>inc</sub>: Incandescent lamp power (W) (see table in Other Attachments);

P<sub>led</sub>: LED lamp power (W)

$$FES_{tot, kWh} = FES_{kWh} * uref \text{ (kWh/year)}$$

Where: FES<sub>tot</sub>, final energy savings per unit (toe/year/uref)

K = energy conversion factor from kWh to toe (0,086\*10<sup>-3</sup> toe/kWh)

### Equivalent CO<sub>2</sub> savings:

$$CO_2 = FES_{tot, kWh} * fi \text{ (tCO}_2\text{/year)}$$

Where: CO<sub>2</sub>: equivalent CO<sub>2</sub> savings (tCO<sub>2</sub>/year);

FES<sub>tot, kWh</sub>: electrical total final energy savings (kWhel/year)

fi: coefficient for conversion in the calculation of equivalent CO<sub>2</sub> savings (tCO<sub>2</sub>/kWh) (Attachment 2, Table 3)

### Primary energy savings

$$PEStot = PES * uref \text{ (toe/year)}$$

Where: PEStot, total primary energy savings (toe/year)

uref: unit of reference of traffic light incandescent lamps replaced with LED (number)

$$PEScor = PES * d * a \text{ (toe/year/uref)}$$

Where: PEScor, corrected primary energy savings (toe/year/uref)

PES, primary energy saving per unit (toe/ annual /uref)

d, coefficient of durability

a, coefficient of additionality

👉 **Excel calculation sheet affiliated to every methodology!**

## Monitoring process

### SEDA's control activities on:

- Energy auditors – public register, certificates of entry into the register
- Energy audits - quality of the audit and conformity with the legislation
- Obligated persons – subjects to obligatory energy audits, implementation of individual targets

### Information submitted to SEDA:

- Annual reports on the implementation of the State bodies and local authorities energy efficiency programs - not later than the 1st day of March
- ***Annual reports on the implementation of the individual energy savings targets by the obligated energy sellers - not later than the 1st day of March***
- Annual reports on the implementation of the obligatory energy efficiency management by energy traders, public buildings, enterprises, industrial systems and outdoor lighting systems - not later than the 1st day of March
- Annual declarations of the energy consumption of enterprises, industrial systems and outdoor lighting systems - not later than the 31st day of January
- ***Annual declarations of the energy sales made by the energy traders to final customers during the previous calendar year - not later than the 1st day of March***
- Annual information on the performed energy audits by the energy auditors - not later than the 31st day of January
- Other – Financial institutions, State administrations, Operational Programmes managing bodies, etc.





## Verification of the energy savings. Energy Savings Certificates

**Energy Savings Certificates** – issued by the Executive Director of SEDA to prove the contribution of the holder thereof to the implementation of energy efficiency improvement measures

The terms, procedure and form for issuing, transfer and revocation of energy savings certificates is established by special ordinance under EE Law

**Step 1:** The obligated energy traders submit to SEDA:

- Application for Energy Savings Certificate (template available on the Web site)
- Document for administrative tax payed (€15)
- Energy audit report/Report for performed inspections /Protocol for energy savings assessment by using specific methodologies, issued by certified energy auditor.

**Step 2:** SEDA performs control on the data and the used methodologies

**Step 3:** The Executive Director of SEDA issues Energy Savings Certificate or sends motivated refusal to the applicant.



**For the period July 2013 – November 2016:**

29 Energy Savings Certificates → 170 GWh savings

Energy savings certificates may be transferred by:

an obligated party to another obligated party only when there is an over fulfillment of the individual energy savings target or;

a non-obligated party to an obligated party.

Draft EE Law, November 2016

- In The National Assembly of the Republic of Bulgaria - Adoption and entering into force – probably by the end of 2016
- Introduces a mixed approach for the art. 7 EED implementation – EEOS + alternative measures

➤ The individual annual targets:

The estimated annual value of energy savings under the EEOS **MINUS** the assessment of energy savings from alternative measures during the year

The difference shall be distributed among the obligated energy sellers according to the proportion of energy sold by each of during the previous year.



**Penal distribution of targets:**

Obligated energy sellers who do not submit to SEDA annual information on the amount of energy sold during the previous year will have individual targets determined on the basis of the undistributed overage of savings.

**Thank you for the patience!**



**Tsvetomira Kulevska**

**Sustainable Energy Development Agency**

Tel: +359 2 915 40 41

E-mail: [kulevska@seea.government.bg](mailto:kulevska@seea.government.bg)

Web: [www.seea.government.bg](http://www.seea.government.bg)