National Energy Efficiency Action Plan of Bulgaria

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SEDA Bulgaria
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Bulgaria in numbers

Founded: 681
Current territory: 110 994 square kilometers (Europe's 16th-largest country)
Population: 7 075 947 (2016, NSI)
GDP: 44 530 M€ (2017, NSI)
Final Energy Consumption: 9 738 ktoe (2017, NSI)
Primary Energy Consumption: 18 334 ktoe (2017, NSI)
including PEC of RES: 1 952 ktoe (2017, NSI)

The largest (per capita) producer and exporter of electricity on the Balkan Peninsula.
Kozloduy Nuclear Power Plant: 1 327 ktoe (2017, NSI)
(34% of Bulgaria's electricity)

The largest thermal power plants in Southeastern Europe are located in the Maritsa East complex.
Total production of TPPs: 1 998 ktoe (2017, NSI)

RES electricity
Total production: 584 ktoe (2017, NSI)
including hydro electricity: 243 ktoe (2017, NSI)
The Belmeken-Sestrimo-Chaira cascade is the most powerful hydropower facility: 1 479 MW
So far, so good…

- Part of the European Union since 2007 - Mandatory European Legislation
- NATIONAL ENERGY EFFICIENCY ACTION PLAN 2014–2020 is developed in accordance with the Directive 2012/27/EU on energy efficiency requirements on the basis of a template which ensures the inclusion of all obligations. The requirements of Directive 2010/31/EU on the energy performance of buildings are also taken into account.
- NEEAP was updated in 2017 and currently covers the 2017-2020 period

With the NEEAP, Member States set their indicative national energy efficiency target.

NEEAPs cover significant measures to improve energy efficiency and what is expected or achieved energy savings, including measures for the supply, transmission and distribution of energy, as well as for final energy consumption, with a view to meeting national energy efficiency targets.

NEAPs must contain information on:

- Energy audits and management systems (Directive 2012/27 / EU, Article 8)
- Reporting and invoicing for end users (Directive 2012/27 / EU, Articles 9-11)
- Consumer information and training programs (Directive 2012/27 / EU, Articles 12 and 17).
- Provision of qualification, accreditation and certification schemes (Directive 2012/27 / EU, Article 16)
- Energy services (Directive 2012/27 / EU, Article 18)
- Building renovation strategy (Directive 2012/27 / EU, Article 4)
- Information on the published list of central and local heated and cooled buildings of the administration, including a list of public authorities: who have developed an action plan for energy effectiveness (Directive 2012/27 / EU, Article 5 (5))

End-user energy efficiency measures, including in industry and transport - details of significant measures to improve energy efficiency in industry and in transport with a view to meeting national energy efficiency targets

Measures to promote energy efficiency in heating and cooling

Criteria for energy efficiency in the regulation of networks and network tariffs, energy efficiency at network design and regulation (Directive 2012/27 / EU, Article 15)

“Each Member State shall set an indicative national energy efficiency target, based on either primary or final energy consumption, primary or final energy savings, or energy intensity.”

“By 30 April 2014, and every three years thereafter, Member States shall submit National Energy Efficiency Action Plans. The National Energy Efficiency Action Plans shall cover significant energy efficiency improvement measures and expected and/or achieved energy savings, including those in the supply, transmission and distribution of energy as well as energy end-use, in view of achieving the national energy efficiency targets”

“By 30 April each year as from 2013, Member States shall report on the progress achieved towards national energy efficiency targets”

Energy Efficiency Law – Bulgaria

Promulgated, SG No. 35/15.05.2015, effective 15.05.2015, amended and supplemented, SG No. 105/30.12.2016

“The National Energy Efficiency Action Plan shall be developed according to a template adopted by the European Commission. The plan shall contain energy efficiency improvement measures and the expected or obtained energy savings, including measures in energy transmission and distribution, as well as in final energy consumption, with a view to reaching the national energy efficiency target”

The Executive Director of SEDA shall organize the preparation, not later than the 31st of March, Annual reports on the implementation of the National Energy Efficiency Action Plans and shall submit it to the Minister of Energy.
SEDA prepares an annual report on the implementation of the national target and the NEEAP
The NEEAP implementation report includes information on:
- **Analysis of trends in energy consumption in Bulgaria** - primary and final energy consumption; final energy consumption and gross value added by sectors
- **Measures implemented in the previous year** that contribute to the achievement of the national energy target
- **Effectiveness and the reported and / or expected impact of these measures**
- **Meeting individual energy savings targets**
- **Energy audits and energy management**
- **Provision of energy services**

**Bottom-up evaluation sources of information:**
- reports on the implementation of energy efficiency plans by public authorities and public authorities local self-government;
- energy efficiency management reports from building owners and industrial systems;
- implemented activities and energy efficiency measures by energy traders;
- reports of agencies implementing the NEEAP measures in 2014;
- - results of inspections of industrial systems and buildings;
- - results of inspections of boilers and air-conditioning systems;
- - information from different funding institutions;
- official websites of the organizations concerned.
The national energy efficiency target was determined using the ‘bottom-up’ method on the basis of:

- Bulgaria’s reference energy consumption scenario as set out in the Detailed Analytical Results’ report by the National Technical University of Athens (7 January 2013). The forecasts in the report are based on the Primes Version 4 energy forecasting method;
- and an assessment of the economic potential for saving energy under the reference scenario.

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<th>Indicator</th>
<th>Year</th>
<th>2012</th>
<th>2016</th>
<th>2020</th>
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<td>PEC — reference scenario</td>
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<td>PEC saving target</td>
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PEC – Primary Energy Consumption
FEC – Final Energy Consumption
- Industry and Services – the share in GDP remains the same
- Structural changes in the economy have no impact on FEC and FEI
- The reduction of FEI in 2017 is entirely due to the changes in FEI in the individual economic sectors

Source: NSI; Annual report on NEEAP implementation, March 2019, SEDA.
In 2017, compared to 2016, energy consumption in all major sectors is increasing.
Buildings:
→ Energy savings obligations for public buildings (up to 2016)
→ Mandatory energy audits for all buildings with floor area more than 250 m²
→ Mandatory inspection of water heating boilers and air conditioning systems
→ National residential buildings renovation program
→ National Nearly-zero Energy Buildings (nZEB) program
→ State-owned buildings – mandatory renovation of 5%/ann of the total floor area

The role of the regions and municipalities/Services:
→ Mandatory Energy Efficiency Programs for regional and municipal administrations
→ Energy audits for public lighting systems
→ Energy efficiency management
→ Mandatory annual reporting to SEDA
→ Information and education campaigns
Industry:
→ Energy savings obligations for Industrial enterprises (up to 2016)
→ Mandatory energy audits for non-SMEs and for all industrial systems with more than 3 GWh/ann. energy consumption
→ Energy efficiency management for Industrial enterprises and annual reporting to SEDA

Transport:
→ Increasing the share of the public electricity transport
→ Rehabilitation and modernization of existing road infrastructure
→ Intelligent Transport Systems on the National Road Network and in the Urban Environment
→ Design and construction of new cycling infrastructure for

Financing energy efficiency:
→ National Energy Efficiency and Renewable Energy Fund
→ Operational Program "Innovation and Competitiveness" 2014-2020
→ Operational Program "Regions in Growth" 2014-2020
→ Operational Program “Transport and Transport Infrastructure” 2014-2020
→ Financial Mechanism of the European Economic Area 2014-2021
Energy Efficiency Obligation Scheme and alternative measures

Introduced 2008
Updated 2014

Obligated energy suppliers:

- Electrical energy < 20 GWh/ann.
- Heat energy < 20 GWh/ann.
- Natural gas < 1 mln. nm³/ann.
- Liquid fuels < 6,500 tones /ann. (fuels for transport excluded)
- Solid fuels < 13,500 tones /ann.

- Mixed approach – Alternative measures introduced 2016 as a supplemented approach to the suppliers obligation
- Total amount of savings – 1,942 ktoe cumulative savings 2014-2020

2017 – 112 obligated companies
2018 – 89 obligated companies
2019 – 96 obligated companies
Successful measures - Industry

1. Mandatory energy efficiency management in enterprises and industrial systems

Annual reporting to SEDA (deadline 1 March, template for reporting);

Bottom-up assessment by summarizing and analyzing the information received by 1 March on the measures implemented by the owners of enterprises and industrial systems.

2. Operational Program “Innovation and Competitiveness”
   Results up to 31.12.2018

- Energy Efficiency for SMEs
  - 448 projects
  - 517 mln. BGN (329 mln. BGN grant)
  - 550 GWh energy savings

- Enhancement of Energy Efficiency in Large Enterprises
  - 68 projects
  - 253 mln. BGN (123 mln. BGN grant)
  - 554 GWh (estimated savings)

Energy savings 2018 – 459,6 GWh
Industry
Energy Audits: 45 audits were carried out and more than 346 energy saving measures were undertaken
- Lightning
- Technology equipment
- Technology aggregates and facilities
- Leaks and insulation
- Monitoring and control systems
- Cogeneration, RES, etc.

Buildings/Services
Energy Audits (685 audited buildings, 429 of them state and municipal)
More than 1,400 EE activities and measures have been implemented by the regional and municipal administrations and by the state authorities in the country

Transport
Increase of the share of electric and hybrid vehicles
Charging infrastructure development
Rehabilitation and modernization of road and transport infrastructure
Construction of the Sofia subway system

✓ 600% increase in the number of electric and hybrid cars in the country for the past 5 years
✓ In 2018 the start of the production of Bulgarian hybrid and fully electric cars was announced
✓ Municipal authorities efforts on local level
### Industry

- "Innovation and Competitiveness" OP
  - 165 projects in SMEs
  - 104 mln. BGN grant support

### Buildings/Services

- "Regions in Growth" OP - 31 contracts for public buildings and households; 22 mln. BGN grant support
- EE and RES Fund: 9 loan agreements; 3 mln. BGN.

### Households

- Energy Efficiency of Multi-Family Residential Buildings National Programme:
  - 100% grant
  - 511 renovated residential buildings
  - 560 mln. BGN

- Residential Energy Efficiency Credit Line (REECL):
  - 10-15% grant
  - 1,031 measures
  - 5 mln. BGN

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[http://seea.government.bg/bg/finansirane](http://seea.government.bg/bg/finansirane)
Progress towards National energy efficiency target

Energy Savings 2014-2018 (ktoe) 530.4
National EE target 2014-2020 (ktoe) 716

74.1%

Annual report on NEEAP implementation, March 2019, SEDA
Energy Efficiency potential

Total building floor area of the central administrative buildings that, on 1 January 2019 did not meet the energy performance requirements referred to in Article 5(1) EED – 1,849,081.4 m².

EE Obligation Scheme – insufficient implementation

Applying the nZEB definition for new and existing buildings

ESCO Market development

Multifamily residential buildings’ stock – 11.6 mln. m² (cumulative) renovated to 2020
Useful links to the main National documents

Bulgarian Energy Law (EN)

Bulgarian EE Law (EN)

Bulgarian NEEAP (EN)

http://www.measures-odyssee-mure.eu/

National plan for improvement of the energy performance of heated and/or cooled State-owned buildings occupied by the State administration (EN)

National long-term programme to encourage investments in implementing measures to enhance the energy performance of buildings of the public and private national residential and commercial building stock (EN)

National Plan for Nearly Zero-Energy Buildings (EN)
Thank you!

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Credit to Ms. Tzvetomira Kulevska
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