FOURTH REPORT ON PROGRESS ACHIEVED TOWARDS MEETING NATIONAL ENERGY EFFICIENCY TARGETS IN THE CZECH REPUBLIC

(pursuant to Article 24 of Directive 2012/27/EU on energy efficiency)

Introduction

Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC ("the Directive") establishes a common framework of measures for the promotion of energy efficiency within the Union in order to ensure the achievement of the Union's 2020 20% headline target on energy efficiency and to pave the way for further energy efficiency improvements beyond that date. It lays down rules designed to remove barriers in the energy market and to overcome market failures that impede efficiency in the supply and use of energy, and provides for the establishment of indicative national energy efficiency targets for 2020.

The strategy of the Czech Republic for improving energy efficiency is described in detail in the National Action Plan for Energy Efficiency ("NAPEE" [1]), the fourth update of which (NAPEE-IV) was approved by the government in March 2016**.** This report focuses on evaluating the Czech Republic's progress in the practical implementation of the Directive and thus in complying with the national goal set in Article 3 of the Directive.

Statistical data for the Czech Republic – indicators as required by Annex XIV to the Directive for the preceding period

Historically the Czech Republic has reported its energy balance in line with the methodology of the International Energy Agency (IEA); the Updated State Energy Concept is also based on this. However on the basis of the requirement arising from the EU Pilot No 7553/15/ENER proceedings, the data have been retrospectively updated using the Eurostat methodology. There are certain methodological differences between energy consumption data compiled using IEA and Eurostat methods. The Czech Statistical Office is currently reviewing in detail the methodology used and we cannot therefore exclude the possibility of a retroactive update of the data.

[1] So far 4 versions of the Czech National Action Plan for Energy Efficiency (NAPEE) have been elaborated:
NAPEE-I was prepared in 2007.
NAPEE-II was prepared in 2011.
NAPEE-III was prepared in 2014 and approved by Government Resolution No 1085 of 22.12.2014.
NAPEE-IV was prepared in 2016 and approved by Government Resolution No 215 of 16.3.2016.

Table: Czech Republic statistical data – EUROSTAT data

	unit	2011	2012	2013	2014
Primary energy consumption - MTI	TJ	1 801 453	1 792 200	1 766 410	1 735 674
Total end-user energy consumption - MTI	TJ	1 007 406	992 408	998 571	963 635
Final end-user energy consumption by sector: - MTI					
Industry	TJ	331 173	318 247	316 822	313 213
Transport	TJ	261 421	254 079	251 338	260 383
Households	TJ	250 538	258 935	267967	237 355
Services	TJ	128 963	125 229	126 204	117 171
Gross added value by sector: MTI					
Industry	mill. CZK	1 345 223	1 346 356	1 347856	1 463 747
Services	mill. CZK	2 201062	2 196 621	2 209 454	2 287 605
Household disposable income – CSO	mill. CZK	2 187 328	2 210 088	2 210 580	Not given
Gross Domestic Product (GDP) - CSO	mill. CZK	4 022 511	4 041 610	4 077 109	4 260 886
Electricity generation from heat power stations	GWh	82 325	82 155	80 918	80 469
Electricity generation from co-generation	GWh	19 652	19 793	20 652	23 221
Heat generation from heat power stations	TJ	123 296	128 158	125 401	122 225
Heat generation from co-generation, incl. waste heat from industrial processes	TJ	98 702	100 649	98 730	98 239
Fuel consumed in electricity generation in heat power stations	TJ	974 510	979 888	962 133	929 926
No of person-kilometres – Ministry of Transport	mill. p-km	42 863	42 723	42 523	

Indicative national energy-efficiency targets for the Czech Republic to 2020

The Czech Republic's national target was first notified to the Commission in April 2014 and amounted to 47.84 PJ (= 13.29 TWh = 1,142.64 ktoe) of total new savings on final energy consumption to 2020.

The Commission was warned that this was only a preliminary value, which had not been approved by the Czech Government and which was only included in the National Reform Programme. This approach was chosen because of the lack of availability of data for 2013. Data for 2010-2012 were used to set a baseline reference value. After the missing data became available, the target value was updated to 47.78 PJ (= 13.27 TWh = 1 141.21 ktoe) and included in the updated NAPEE-III, which was approved by the Government in December 2014

Part of Czech Government Resolution No 1085 of 22 December 2014 approving NAPEE-III was a decision to update NAPEE-III in respect of the completion of the approval process for programmes financed from the European Investment and Structural Funds (see Chapter *System of Mandatory Increases in Energy Efficiency)*. The most recent update – i.e. NAPEE-IV – was approved by the Czech government on 16.3.2016 in its Resolution No

215, the wording of which has been published at http://www.mpo.cz/dokument150542.html On the basis of current analyses the Czech Republic's indicative national target was set in NAPEE-IV at **50.67 PJ** (=14,.08 TWh) of total new savings on final energy consumption to 2020.

The process of implementing the Directive on Energy Efficiency

Legislative measures

The Directive has an extremely broad focus and its transposition into the Czech legislation has therefore been implemented through amendments to three Acts, namely Act No. 458/2000 on business conditions and public administration in the energy sectors, Act No. 406/2000 on Energy Management and Act No. 165/2012 on subsidised energy sources.

A complete summary of the transposition regulations is given below.

Title of regulation	**Most recent update effective from:**
59) Act No 458/2000 on Business Conditions and Public Administration in the Energy Sectors and amending certain laws (the Energy Act), as amended (158/2009, 211/2011, 299/2011, 670/2004, 131/2015)	1.1.2016
Act No 165/2012 on subsidised energy sources and amending certain other laws, as amended	1.1.2016
Act No 406/2000 on energy management, as amended (177/2006, 393/2007, 318/2012, 299/2011, 103/2015)	1.7.2015
Act No 22/1997 on the Technical Requirements for Products, and on amending certain laws, as later amended (71/2000)	3.4.2000
Act No. 299/2011, by which 237/2014 amends Act No 406/2000 on energy management, as amended and Act No 458/2000, on business conditions and public administration in the energy sectors and amending certain laws (the Energy Act), as amended.	13.11.2011
Decree No 480/2012 on energy audit and energy assessment	1.1.2013
Decree No 78/2013 on building energy efficiency, as amended (230/2015)	1.12.2015
Act No 383/2012, on the conditions for trading in greenhouse gas emissions permits, as amended (257/2014)	1.1.2015
Act No 194/2007 setting out the rules for heating and supply of hot water, the unit indicators for heat energy consumption for heating and preparing hot water and the requirements for equipping the internal heating equipment of buildings with instruments regulating and recording the supply of heat energy, as amended (237/2014)	7.11.2014
Decree No 405/2015 on the method for dividing up costs for supplies of heat energy when using joint measurement of a purchased quantity of heat energy	1.1.2016
Decree No 403/2015 on guarantees of the origin of electricity from renewable energy sources and electricity from high-efficiency combined heat and power generation.	1.1.2016

Decree No 37/2016 on electricity from high-efficiency combined heat and power generation and from secondary sources	29.1.2016
Decree No 269/2015 on billing costs for heating and joint preparation of hot water for a building	1.1.2016
Decree No 70/2016 on the billing of supplies and related services in the energy sectors.	1.7.2016

It is clear from the summary that many changes took place in 2015 in respect of implementation of the Directive, relating to the three major amendments to the Acts mentioned in the Introduction.

Measures of a non-legislative nature

In 2015/2016 the government **approved basic strategic materials:**

- NAPEE-IV (more detailed information in Chapter *System of Mandatory Increases in Energy Efficiency)* – approved by Government Resolution No. 215 dated 16.3.2016
- Plan for reconstruction of buildings owned by the state (more detailed information in Chapter *Exemplary role of public bodies' buildings)* - – approved in Government Resolution No. 1035 dated 14.12.2015

Further the Ministry of Trade and Industry has in 2015, in accordance with the Directive, conducted an **assessment of the potential for combined heat and power generation (CHP).** The CBA shows that the incremental benefits exceed the incremental costs in both of the alternative scenarios. The benefit across society is higher for "CHP" scenario implementation. Calculated to net present value the additional savings under this scenario are 17.65 bn CZK. The use of the technical potential in heat supply of developing CHP technologies is shown in the following table.

Table: Use of the technical potential of developing CHP technologies

	Technical potential	CHP scenario
Micro-cogeneration	5.0 PJ by 2025	0.9 PJ by 2025
Small and medium-sized CHP plants using gaseous fuels	13,7 PJ by 2025	4.6 PJ by 2025
CHP on renewable energy sources and other alternative fuels	9.5 PJ by 2025	3.2 PJ by 2025

Thanks to the installation of these new small and medium-sized sources with CHP an increase in electricity from high-efficiency CHP of 1.3 TWh (by 2025) might also be achieved.

For the "High CHP" scenario, the relatively high total fuel costs (mix of sources with high use of natural gas) and high investment in new CHP sources to a great extent cancels out the benefits of this variant, and therefore this scenario does not achieve the absolute benefit levels of the "CHP" scenario.

It can be seen from the sensitivity analysis that there is a significant impact on the final NPV of fuel prices, the price of emissions permits and also of costs for externalities, which can vary significantly depending on the methodological approach. However, in reality the situation where NPV<0 should not occur in the case of the "CHP" scenario.

From the foregoing it is clear that from a whole-society perspective the Czech Republic should develop the conditions for growth of combined generation of electricity and heat to meet the "CHP" scenario in which the highest benefits for society as a whole are demonstrated.

In accordance with Article 15 an assessment was performed of the infrastructure potential for gas and electricity from an energy efficiency standpoint. An assessment of the potential of the electricity energy infrastructure, prepared by the Association of Regulated Power Supply Companies, states in respect of energy efficiency that "losses in the transmission system are largely determined by the scale of the output being sent for transforming at the distribution system operator, by extraction of power from power station connected to the transmission system and also by the size of the overflow across the transmission system, which is set by commercial exchanges between individual trade zones in the inter-connected European system".

In an area which is subject to influence by the transmission system operator and which does not bring about any reduction in operational safety and electricity supply reliability, two areas of loss reduction might be considered:

- Investment in infrastructure, that is, increasing network throughput and thus achieving greater connectedness, which as a consequence and if specifically applied, brings about loss reduction in the system as a whole. Increasing system throughput with its impact on loss reduction is largely inspired by the need to increase the options for transmission of effective power capacity from sources to consumption and within the connected European grid, which leads to the long-term secondary effect of meeting the requirements for loss reduction. As an example of the implementation of this one can mention the process for assessing demand in individual corridors, where in the event of demand it leads to construction of higher specification line (higher current load capacity, doubling up of lines) bringing about a lower unit loss factor.

- There is also the matter of system management resources. Loss reduction in the transmission system with the aid of network operations changes is very limited. Variation from the basic connection in general brings about increases in losses in the transmission system. A parameter such as the location and size of supply/consumption of effective power, which significantly affects the size of losses, is not under the control of the transmission system operator, and where it is, only at great cost. This can be influenced only by idle capacity which contributes in part to losses in the transmission system. Here there are implementation options for source management resources and compensatory resources, with the aim not only of securing safety and operational reliability but also of reducing losses. Specifically, approaches and instruments being applied in this area are automatic voltage regulators working with an optimising instrument.

It can be generally stated that the measures being adopted for loss reduction within electricity infrastructure

should always be applied with a view to a particular location and with the aim of achieving overall loss reduction, and not with a view to the losses of one type of equipment. In system management instruments the scope is limited by the options to use available regulatory means, which today in the transmission system are already fully exploited, but there is scope in pilot projects permitting greater integration and coordination.

The requirement for energy efficiency at large power transformers in the transmission system has been applied for a number of years at state-run ČEPS, a.s., the transmission system operator, although this was not a legislative requirement. Effective efficiency as given by Regulation No 548/2014 is currently not helped by the own-use transformers installed at ČEPS, a.s., or more precisely, this equipment does not fall within this regulation. The situation has been resolved by having the requirement for energy efficiency under Regulation No 548/2014 already incorporated into the technical specifications for own-use transformers to be commissioned from 1.7.2015.

For gas supplies, the assessment describes investment projects which should lead to an increase in energy efficiency.

Building renovation strategy

For housing, a building renovation strategy was formulated in 2014; this analyses the savings potential in buildings in the Czech Republic with a focus on so-called usually occupied family housing, apartment blocks and other buildings. Supporting energy savings in buildings has a major positive effect on the economy. 1 bn CZK of state investment in support programmes can generate 0.97 to 1.21 bn CZK back into public budgets in income/corporation tax from companies and their employees, in social and health insurance and in unemployment benefit saved. At the same time it can induce GDP growth of 2.13 to 3.59 bn CZK.

The strategy takes account only of final consumption energy savings, to ensure consistency with the draft objectives of the Czech Republic under both Article 3 and Article 7 of the energy efficiency Directive, to compliance with which the strategy contributes.

The analysis state that the value of possible energy savings is divided as follows:

- energy savings on heating are 77 PJ for residential buildings with medium-sized energy savings renovations (45% of original consumption) and 140 PJ with full renovation of the entire housing stock to the passive standard (81% of the original consumption)
- energy savings for heating up hot water are 12 PJ, that is, roughly 30% of current consumption
- energy savings for artificial lighting are 3.4 PJ, that is, roughly 60% of current consumption

The time to achieve these potential savings is dependent on the choice of strategy implementation scenario. A summary of the strategies is given below:

	2020
Scenario 1: Basic (business as usual)	
final energy consumption [GWh/yr.]	57485

energy savings in year in question [GWh/yr.]	2196
cumulative investment costs [mill. euro]	3401
investment costs in year in question [mill. euro]	479
energy cost savings in year in question [mill. euro]	615
Scenario 2: Rapid but superficial building stock renovation	
final energy consumption [GWh/yr.]	56020
energy savings in year in question [GWh/yr.]	3661
cumulative investment costs [mill. euro]	5669
investment costs in year in question [mill. euro]	798
energy cost savings in year in question [mill. euro]	1025
Scenario 3: Slow, but from an energy standpoint thorough building stock renovation	
final energy consumption [GWh/yr.]	56584
energy savings in year in question [GWh/yr.]	3097
cumulative investment costs [mill. euro]	3896
investment costs in year in question [mill. euro]	545
energy cost savings in year in question [mill. euro]	867
Scenario 4: Rapid and thorough building stock renovation	
final energy consumption [GWh/yr.]	54520
energy savings in year in question [GWh/yr.]	5161
cumulative investment costs [mill. euro]	6493
investment costs in year in question [mill. euro]	908
energy cost savings in year in question [mill. euro]	1445
Scenario 5: Ideal hypothetical	
final energy consumption [GWh/yr.]	49552
energy savings in year in question [GWh/yr.]	10129
cumulative investment costs [mill. euro]	11495
investment costs in year in question [mill. euro]	1600
energy cost savings in year in question [mill. euro]	2836

The most advantageous appears to be implementation of at least Scenario 4 (rapid and thorough), which would contribute savings of 18.6 PJ in the residential sector, (25,4 PJ including other buildings outside industry). Implementation of this scenario depends on invoking available measures. At present it can be said that the main initiatives are devoted to the following measures:

- Economic:
  - ✓ A new Green Savings campaign (alternative scheme measure under Article 7 of the Directive)
  - ✓ European Structural and Investment Funds 2014 – 2020 (alternative scheme measure under Article 7 of the Directive)
  - ✓ The Energy Performance Contracting method (alternative scheme measure under Article 7 of the Directive)
- Legislative and administrative measures:
  - ✓ Requirements for minimum renovation and new-build energy standards (alternative scheme measure under Article 7 of the Directive)
  - ✓ Building energy efficiency certificates
  - ✓ Reduction in the administrative burden for support applicants (both for grant providers and for applicants)

It is clear from the foregoing that the Czech Republic is aware of the potential for savings in buildings and is supporting implementation of the measures in the buildings renovation strategy to achieve savings under Scenarios 3 and 4. In addition to the already established system of mainly financial tools, the Ministry of Trade and Industry wishes to focus on setting up monitoring of renovations implemented in line with the foregoing economic measures, based only on a change in final consumer behaviour. In this regard there is a need to initiate discussions with building contractors, the banking sector, and energy supply companies, and to find a bilaterally acceptable form of agreement, the aim of which would be records of such projects and support for implementation of projects over and above the legislative requirements for building energy efficiency.

Exemplary role of public bodies' buildings

The provision in Article 5 of the Directive "Exemplary role of public bodies' buildings" is based on the premise that the public sector should set an example in improving energy efficiency. In 2013 the Czech Republic opted for an alternative approach to Article 5 of the Directive. This approach was chosen in view of the kind of buildings owned and used by central authorities in the Czech Republic, made up of buildings which are officially protected as part of a defined milieu or in view of their special architectural or historical value. These are 123 of 518 unsatisfactory buildings, i.e. 23.7% of the buildings, which represents 12% of the energy reference area and a share of consumption of 17%

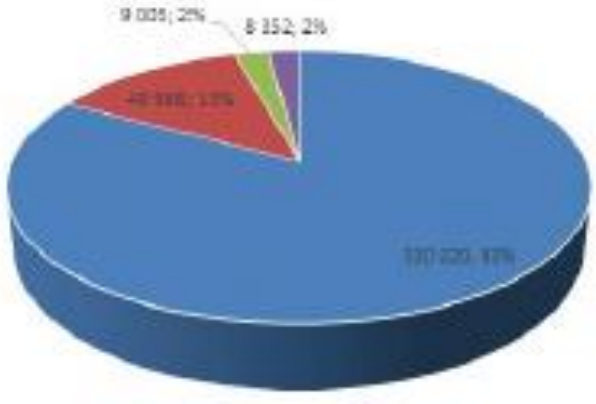
Energy consumption of building stock by type of heritage protection

Blue - No limitation

Red - Cultural/national monument

Green - Buildings in heritage reservation

Purple - Buildings in heritage zone



Source: Ministry of Trade and Industry – 2015 data collection for renovation plan under Article 5 of the Directive for 2016-2020, consumption for 2013

In 2015, the Ministry of Trade and Industry, further to the previous materials relating to Article 5 of the Directive, in collaboration with other affected parties, prepared materials presenting an investment plan for reconstruction of buildings owned by central institutions under the rules given in Article 5 of the Directive. Part of this material is a specification of buildings included in the database in line with Article 5 of the Directive, a specification of buildings with an energy reference area in excess of 250 m^2 which fail to meet the energy efficiency requirements under Section 7 of the Act and finally a list of institutions with an obligations under Article 5 of the Directive and their renovation plans with a quantification of the anticipated energy savings.

As part of plan preparations for reconstruction of buildings falling under Article 5 for 2016-2020 a review of the building stock was undertaken. As a result of this review there was a significant reduction in the number of buildings where it was found that they fail to meet both the condition of ownership and that of use, from the original 972 buildings to the current 773 buildings (see Table Building number summary).

Table: Building number summary

	change	No
number of buildings according to the 2015/3 materials		972
number of newly recorded buildings	+ 15	987
number of buildings used by an organisation not subject to the regulation	- 214	773
number of buildings in the list		**773**

The building stock for setting the obligation contains a total of 773 buildings and is displayed on the MTI website (www.mpo.cz).

Of the total number of 773 buildings owned by central authorities including buildings with an energy reference area in excess of 250 m^2, 518 buildings were defined as not meeting the requirements for energy efficiency.

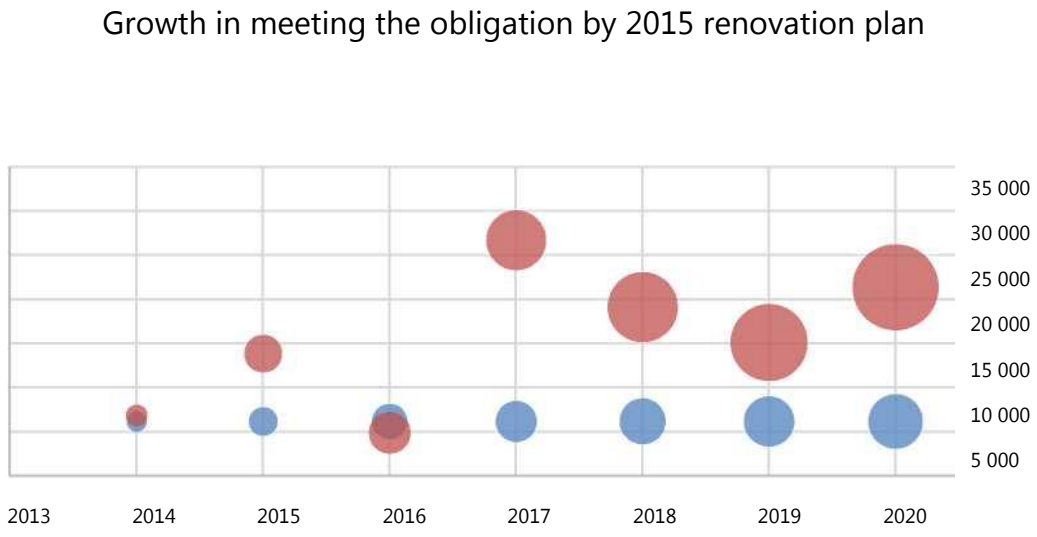
When recalculating the objective following revision of the building stock, a clarification was undertaken of the obligation calculation methodology in line with the Commission departments working document "Guidance note on Directive 2012/27/EU on energy efficiency, amending Directives 2009/125/EC and 2010/30/EC, and repealing Directives 2004/8/EC and 2006/32/EC; Article 5: Exemplary role of public bodies' buildings". Under this guidance every building had its potential savings calculated based on energy consumption from 2013; these would need to be achieved in order for the unit energy efficiency per m^2 of buildings to match the standardised value.

The recalculated value of the savings obligation for 2014-2020 is 172,699 MWh. The obligation was set at 3% of the annual energy savings based on the measurement baseline.

Table: Growth in the obligation in individual years

Individual year of obligation [MWh]	2014	2015	2016	2017	2018	2019	2020	Total
Mandatory annual savings contribution	6,168	6,168	6,168	6,168	6,168	6,168	6,168	43,174
Cumulative savings	6,168	12,336	18,503	24,671	30,839	37,007	43,174	172,699

In 2014 the minimum obligation was met. On 4 buildings renovations were performed shifting them to a satisfactory energy efficiency class, with a calculated result of 464 MWh of energy savings. In addition to these renovation measures, the sale and transfer of 5 buildings with 47 thousand m^2 energy reference area not subject to an obligation under Article 5, which in 2014 contributed to meeting the obligation through energy savings of 6,367 MWh.



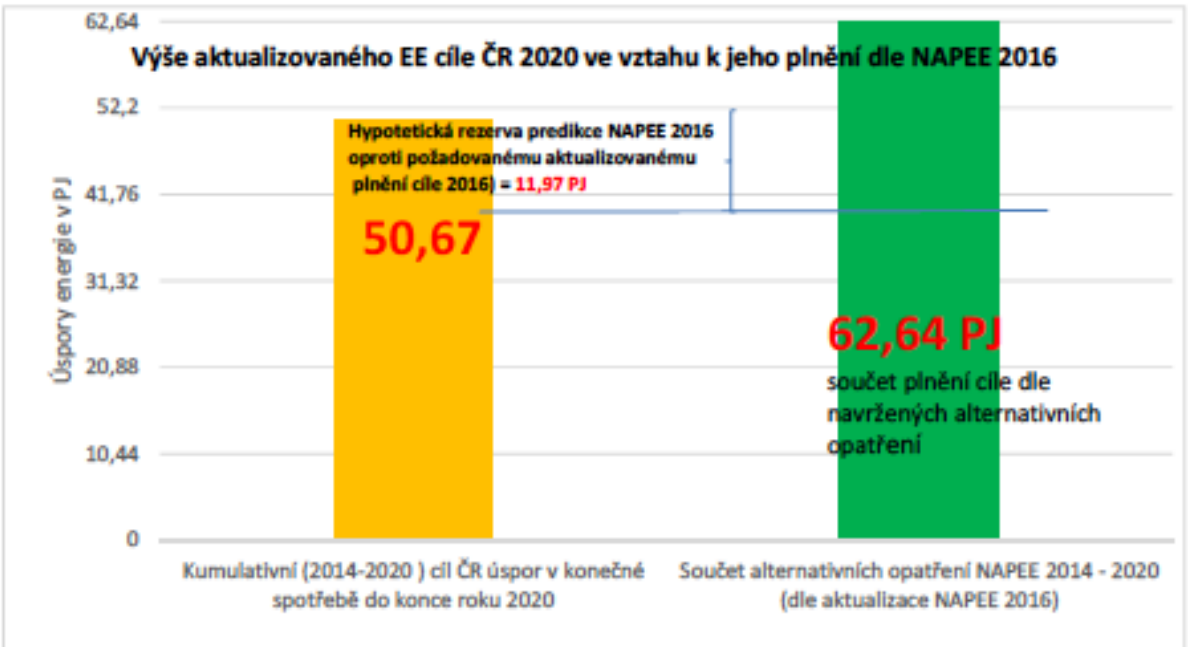
The 2015 plan was evaluated in April 2016 on the basis of data gathered as part of regular monitoring under Section 9b(3) of Act No 406/2000 on energy management, as amended. In 2015, energy-saving measures were implemented in 28 buildings with an overall energy reference area of 145 313 m^2 with resulting energy savings in 2015 of 5 535 MWh. These were measures mainly of a construction nature such as the replacement of windows, improvements to the exterior cladding and renovations of heating systems. In view of the length of the internal approvals process for investments, not all planned work was successfully completed and the compliance rate was only 90%. In 2016 it is anticipated that there will be energy savings at a level which will compensate for the compliance shortfall in 2015 in accordance with Article 3 of the Directive.

System of mandatory increases in energy efficiency

The CR has also opted to adopt an alternative approach to Article 7 for mandatory increases in energy savings, which has been described in the document entitled "Policy measures to achieve energy savings among final customers in the Czech Republic", which was submitted to the Commission in December 2013.

Czech Government Resolution No 215 of 16 March 2016 approved the updated NAPEE-IV, which followed the definitive approval of the Operational Programmes by the European Commission. The Operational Programmes (OP) for the 2014 – 2020 programming period form the core of the alternative approach to meeting the requirement laid down in Article 7 of the Directive for mandatory increases in energy efficiency in the Czech Republic. The update of NAPEE-IV was conducted further to Czech Government Resolution No 1085 of 22 December 2014.

Because of the extended OP approval process there was a delay in drawing funds from these programmes and thus a delay in introducing measures increasing energy efficiency through the Operational Programmes. The updated NAPEE-IV also reflects the fact that there was a threat to compliance with mandatory increases in energy savings at final-customer level under Article 7 of the Directive by 2020. For this reason, as part of the updated prediction of the Czech Republic energy-efficiency objective, new inter-sectoral policy measures were added in order to increase the synergy between the policy measures proposed in NAPEE-III in 2014 and more effectively support the effect of maximising energy efficiency across the Czech Republic economic sectors. Additional policy measures are focused on energy-efficiency support in construction, education, support for energy-efficient measures (EPC, energy management) at the level of self-governing authorities and municipalities, science and research through the application of improved energy efficiency, and agriculture. The prediction for energy savings achieved by additional policy measures is set at 14.61 PJ. Updated data from the operational and national programmes predict energy savings of 48.028 PJ. The sum of the updated original policy measures (NAPEE-III) and new additional measures proposed under the NAPEE-IV update should under the prediction generate 62.642 PJ of energy savings at end-user level.



Key:

Výše aktualizovaného EE cíle ČR 2020 ve vztahu k jeho plnění dle NAPEE

Úspory energie v PJ
Hypotetická rezerva predikce NAPEE 2016 oproti požadovanému aktualizovanému plnění cíle 2016 = 11,97 PJ
Součet plnění cíle dle navržených alternativních opatření

Kumulativní (2014-2020) cíl ČR úspor v konečné spotřebě do konce roku 2020
Součet alternativních opatření NAPEE 2014-2020 (dle aktualizace NAPEE 2016)

Value of Czech Republic 2020 updated Energy Efficiency target in relation to its fulfilment under NAPEE

Energy savings in PJ
Hypothetical NAPEE 2016 prediction reserve compared to required updated 2016 target fulfilment = 11.97 PJ
Sum of target fulfilment under proposed alternative measures
Cumulative (2014-2020) Czech Republic target for end-user savings by 2020
Sum of NAPEE 2014-2020 alternative measures (under the NAPEE 2016 update)

The preceding graph depicts a hypothetical reserve of 11.97 PK within prediction of the sum of alternative NAPEE-IV 2014 – 2020 "policy" measures compared to the cumulative target (2014 – 2020) Czech Republic savings at end user up to 2020.

The newly proposed additional policy measures operate across the economic sectors of the Czech Republic, are based on the experience of EU Member States and the European Commission over the long term and targeted increases in energy efficiency on the part of industry, services and the population. As part of these additional measures there will be support for energy efficiency in construction and in the technical equipping of households:

- measure No 1.14 of NAPEE-IV, "Support for construction in the Czech Republic in increasing energy efficiency and environmental protection in line with the EU 2020 environmental strategy", support for construction with a commitment from private bodies to voluntarily share in increasing energy efficiency and environmental protection.
- measure No 1.15 of NAPEE-IV, "Additional alternative measures to increase energy efficiency in Czech industry" in the industrial sector further to implementation of support for private investment to introduce energy efficiency improvement technologies.
- measure No 1.16 of NAPEE-IV, "Additional alternative measures to increase energy efficiency in

municipalities, towns and regions", increasing energy efficiency in self-governing units (municipalities, towns, regions), support for the introduction of energy management, EPC, educating the population in energy saving.

- measure No 1.17 of NAPEE-IV," Basket of measures to improve energy efficiency in agricultural operations", a set of comprehensive measures to increase energy efficiency in the agricultural sector.
- measure No 1.18 of NAPEE-IV, "State programmes to support energy savings and renewable energy source use (EFEKT programme) – EPC, energy management" support for education in energy efficiency.
- measure No 1.19 of NAPEE-IV, "Science and research as support for increasing energy efficiency in line with the EU 2020 environmental strategy", support from science and research of technologies improving energy efficiency.

Additional measure number	**Additional measure title**	**Estimate of benefits for 2017-2020 (PJ)**
1.14	Support for construction in the Czech Republic in increasing energy efficiency and environmental protection in line with the EU 2020 environmental strategy".	4.000
1.15	Additional alternative measures to increase energy efficiency in Czech industry.	5.438
1.16	Additional alternative measures to increase energy efficiency in municipalities, towns and regions.	3.000
1.17	Basket of measures to improve energy efficiency in agricultural operations.	0.980
1.18	State programmes to support energy savings and renewable energy source use (EFEKT programme) – EPC, energy management	0.660
1.19	Science and research as support for increasing energy efficiency in line with the EU 2020 environmental strategy.	0.500
TOTAL		**14.578**

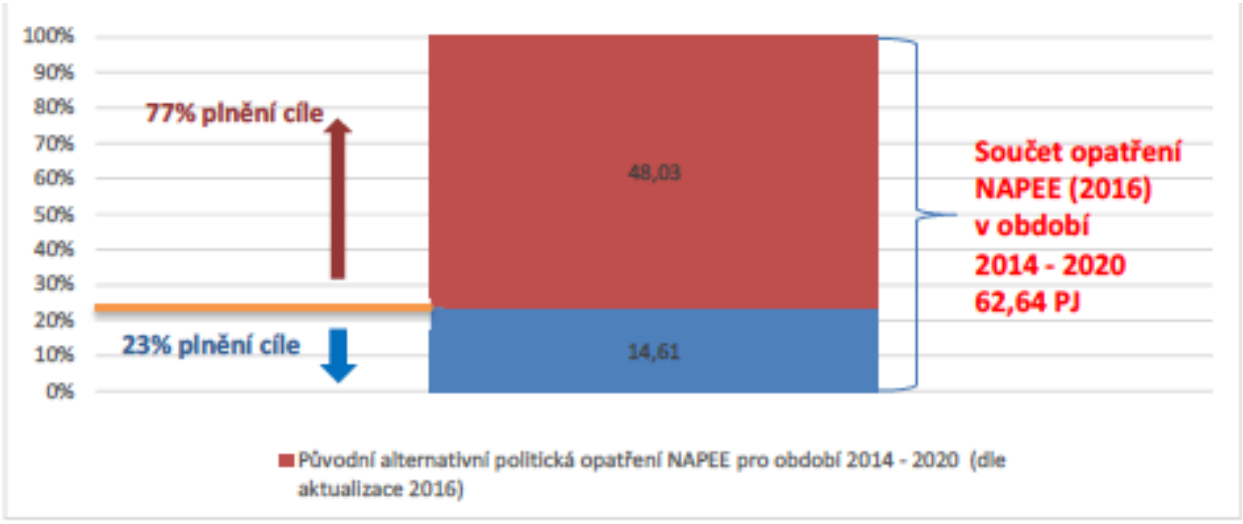
Sum of NAPEE alternative measures 2014 – 2020 in PJ (according to NAPEE update 2016)

Key:

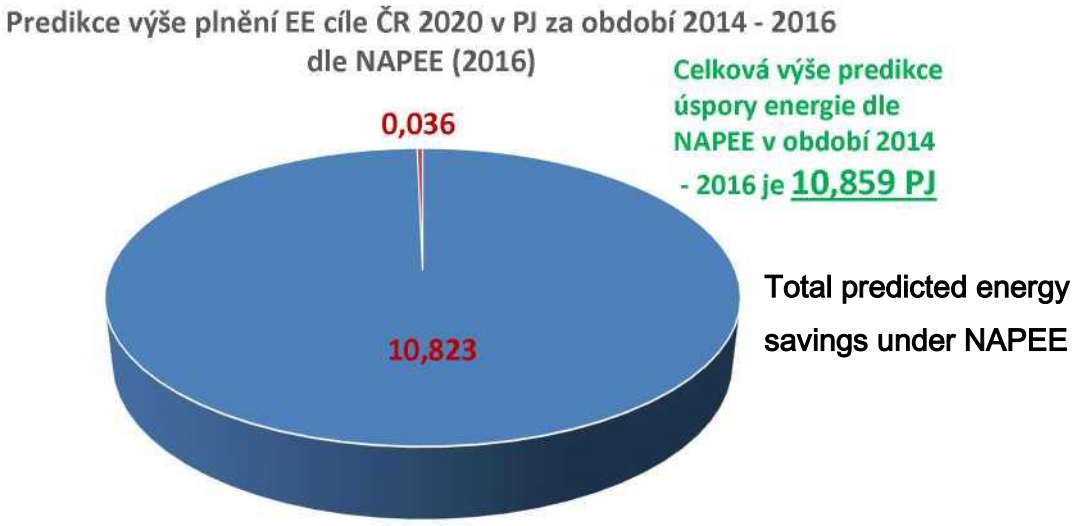
77% plnění cíle	77% target fulfilment
23% plnění cíle	23 target fulfilment
Součet opatření NAPEE (2016) v období 2014-2020 62,64 PJ	Sum of NAPEE (2016) measures in 2014-2020 62.64 PJ
Původní alternativní politická opatření NAPEE pro období 2014-2020 (dle aktualizace 2016)	Original NAPEE alternative policy measures for 2014-2020 (under 2016 update)

The prediction of the ratio of fulfilment of the NAPEE-IV target of 62.64 PJ is divided into 23% achieved by additionally proposed alternative policy measures totalling 14.61 PJ and 77% achieved by updated original policy measures proposed in NAPEE-III.

Under the prediction of the Czech Republic target fulfilment for 2014 – 2016, savings of 10.86 PJ are expected for this period according to the NAPEE-IV update. Of this amount, 10.823 PJ is the share of these savings of measures proposed under NAPEE-III, and 0.036 PJ from additionally proposed measures arising from the NAPEE-IV update. This low figure for energy savings for additionally proposed measures is a function of the fact that during 2016 there will be detailed agreement of the final conditions of these measures between the Ministry of Trade and Industry, industrial companies, trade unions, private financial institutions, local government and scientific institutions. Full implementation of the additional alternative measures is being planned for 2017 - 2020.



Prediction of Czech Republic 2020 energy efficiency target fulfilment for 2014-2016 according to NAPEE (2016)

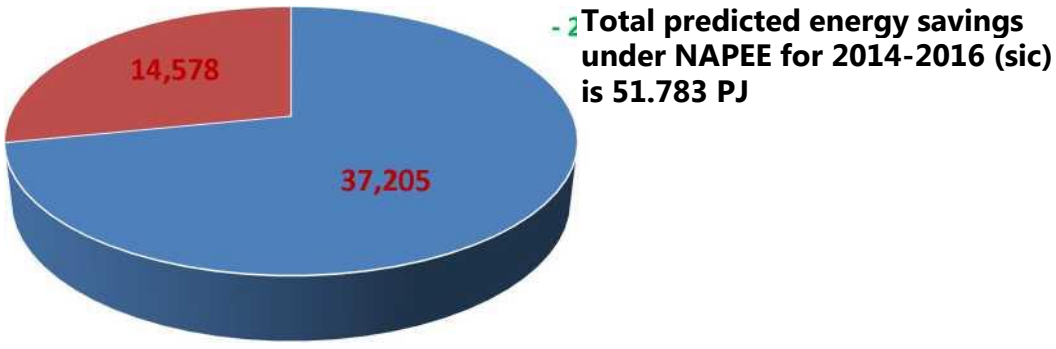


Blue: NAPEE update from 2016 – fulfilment prediction for 2014 - 2016

Red: NAPEE update from 2016 – Additional (newly proposed) cross-sectional measures

Savings of 51,783 PJ are expected for 2017 – 2020 according to the NAPEE-IV update. Of this amount, 37.205 PJ is the share of these savings of measures proposed under NAPEE-III, and 14,578 PJ from additionally proposed measures arising from the NAPEE-IV update. During this period it is already assumed that there will be full involvement of additional policy measures in meeting the Czech Republic objectives.

Prediction of Czech Energy Efficiency target fulfilment in PJ for 2017 - 2020 according to NAPEE (2016)



Blue: NAPEE update from 2016 – fulfilment prediction for 2017 - 2020

Red: NAPEE update from 2016 – Additional (newly proposed) cross-sectional measures

In relation to the preceding division of the prediction of Czech Republic target fulfilment into the two periods 2014 – 2016 and 2017 – 2020 according to NAPEE-IV we give the following table of the relationship of the ramp-up to the cumulative Czech Republic target (Value of annual savings cumulatively following application of the exceptions in Article 7 (2) a) and d) = PLAN for ACHIEVING ANNUAL SAVINGS – for the Czech Republic 2020 target) and the prediction for meeting this target under the NAPEE-IV update (Prediction for meeting the prediction according to the NAPEE-IV update (original measures + new additional measures)).

Period NAPEE	Value of annual savings cumulatively following application of the exceptions in Article 7 (2) a) ad) = PLAN for ACHIEVING ANNUAL SAVINGS – for the Czech Republic 2020 target	Prediction for meeting the prediction according to the NAPEE-IV update (original measures + new additional measures) for the period:	Percentage fulfilment of the prediction of the NAPEE-IV update in respect of the "Plan for achieved annual savings" for the period:	Percentage fulfilment of the prediction of the NAPEE-IV update in respect of the total Czech Republic energy efficiency target for 2020 under the "Plan for achieved annual savings" for the period:
2014 to 2016	21.7125 PJ	10.859 PJ	50%	21%
2017 to 2020	28.95 PJ	51.783 PJ	179%	102%
TOTAL	50.67 PJ	62.64 PJ	124%	124%

In view of the fact that the process of drawing on Operational Programmes in the 2014 – 2020 programme period was up to 2 years late, account had to be taken of this fact during the NAPEE-IV update when re-evaluating the prediction of savings achieved for individual policy measures. Because of the aforementioned delayed drawdown of Operational Programme, the prediction for achieved energy savings at the end user in the 2014 – 2016 period is 10.859 PJ, which is 50% of the volume of savings under the cumulative ramp-up of annual savings under Article 7 with the application of exceptions under para. 2 a) and d). Overall for 2014 – 2016 a 21% fulfilment is predicted of the total Czech Republic energy efficiency target of 50.67 PJ.

In the 2017 – 2020 full draw-down of the Operational Programmes and total use of the additional policy measures are assumed. For the 2017 – 2020 period is 51.783 PJ, which is 179% of the volume of savings under the cumulative ramp-up of annual savings under Article 7 with the application of exceptions under para. 2 a) and d). Overall for 2014 – 2016 a 102% fulfilment is predicted of the total Czech Republic energy efficiency target of 50.67 PJ.

The individual measures being used are described in detail in the National Action Plan including their expected benefit.

Evaluation of Czech Republic target fulfilment under Article 7 achievement of energy savings at end user 2020 by results achieved for 2014 - 2015

The benefits of the individual policy measures for 2015 are given in the following table.

	Measure	2015 [TJ]
1.1	Regeneration of apartment blocks - PANEL 2013+ PROGRAMME	38.998

1.2	Green Savings	Completed
1.3	New Green Savings 2013	326.4
1.4	New Green Savings 2014-2020	316.2
1.5	JESSICA Programme	54.698
1.6	Integrated Regional Operational Programme 2014-2020	Projects under implementation
1.7	Joint programme boiler replacement scheme	Projects under implementation
1.8	Operational Programme Environment 2007-2013.	864.127
1.9	Operational Programme Environment 2014-2020.	Projects under implementation
1.10	State Programmes for the promotion of energy savings and the utilisation of investment grants for renewable energy sources	7.462
1.11	OP Prague, Growth Pole of the CR – building part	In preparation
1.12	Operational Programme Enterprise and Innovation	1,096
1.13	Operational Programme Enterprise and Innovation for Competitiveness	Projects under implementation
	TOTAL	**2,703.89**

In 2014 665.5 TJ of energy savings were achieved at end user, which was a result of gradual draw-down of the Operational Programmes and National Programmes from the 2007 – 2013 programme period. Operational Programmes for the 2014 – 2020 programme period were in preparation and therefore did not bring about any energy savings at end user level.

In 2015 2,704 TJ of energy savings were achieved at end user level. Compared with 2014 this is a greater than 400 per cent increased in achieved energy savings at end user level. This increase is a result of efficient final draw-down of the Operational Programme Enterprise for Innovation under the responsibility of the under the responsibility of under the Ministry of Trade and Industry (in 2015, achieved energy savings of 1,096 TJ, for 2016 additional savings of 561 TJ are anticipated from the final 9 projects under the final draw-down of the programme financial allocation) and of the Operational Programme Environment (achieved energy savings of 864 TJ).

The Czech Republic has successfully met its target and obligation for 2015 of efficiently drawing down the finances from the Operational Programmes for the 2007 – 2013 programme period.

During 2015, calls were issued for the National Programme New Green Savings 2014 - 2020, specified as 2nd call for family houses ((15.5. to 15.7.2015), which follows on from the 1st call for family houses issued from 1.4. to 31.12.2014. Energy savings for apartment blocks were supported in a 1st call for apartment blocks in the City of

Prague (15.(15. 5.5. to 31.10.2015). On 22.10.2015 a 3rd call was issued for family houses. This call will remain in place until the end of the programme period. On 15.3.2016 a 2nd call was issued for apartment blocks which will remain in place until the end of the programme period.

The Operational Programme Enterprise and Innovation for Competitiveness issued its 1st call for energy savings on 29. May 2015. Currently projects for this call approved in 2015 are being implemented.

The Operational Programme Environment 2014 – 2020 has issued as part of Priority Axis No 5 – SO 5.2 Achieving a high energy standard for new public buildings, a call accepting applications from 15.10.2015 to 14.10.2016, and as part of SO 5.1. Reducing the energy demands of public buildings and increasing the use of renewable energy sources, a call accepting applications from 1.12.2015 to 15.4.2016. As part of Priority Axis 2 SO 2.1 Reducing emissions from household local heating sharing in the exposure of the population to concentrations of pollutants, a call was issued accepting applications from 14.8.2015 to 23.10.2015, for SO 2.2 Reducing emissions of stationary sources sharing in the exposure of the population to over-threshold pollutant concentrations, a call was issued accepting applications from 14.8.2015 to 16.12.2015.

The Integrated Regional Operational Programme issued a call from 18.12.2015 to 30.11.2016 for Priority Axis 2 – SO 2.5 – Reducing energy demands in the housing sector, which was called "Energy Savings in Apartment Blocks".

In June 2015 a separate department was created at the Ministry of Trade and Industry, into whose competence increasing energy efficiency and energy savings in the Czech Republic falls exclusively. Further to the creation of this department a Czech Coordinating Committee for Energy Efficiency was set up, serving as an advisory body to the Minister of Trade and Industry. Within this committee the Ministry of Trade and Industry has within its jurisdiction the optimisation and coordination of the individual calls supporting energy savings under the individual policy measures. The Coordinating Committee is also a platform for discussions with professional bodies and institutions dealing with energy savings in accordance with EU policy and the EU 2020 targets. The new additional policy measures were discussed as the Coordinating Committee. During 2015, the members of the Coordinating Committee elaborated a list of further possible energy efficiency improvement measures, which will be analysed during 2016, incorporated into the NAPEE update and then implemented so as to further support fulfilment of the Czech Republic target for achieved energy savings at end user lever by the end of 2020. As a success of the Coordinating Committee, of the Ministry of Trade and Industry and the managers of the individual alternative policy measures we consider approval of the final conditions of the individual 2014 – 2020 Operational Programmes and the subsequent immediate issue of calls supporting improved energy efficiency and thus the immediate engagement of the Operational Programmes in meeting the Czech Republic target for 2020.

In comparison with the end of the previous period, i.e. with 2014, as at the end of 2015 all policy measures to secure fulfilment of the Czech Republic obligation have been activated. Furthermore additional policy measures will be implemented in subsequent years. In cooperation with the Coordinating Committee for Energy Efficiency, the Ministry of Trade and Industry monitors the status and completion of individual calls under the Operational and National Programmes, seeks further means for optimising calls and introducing further policy measures in order to meet the Czech Republic obligation (see following table).

Comparative progress table for previous period 2014 and current period 2015

Milestone	**2014 Period**	**2015 Period**
Draw-down of funds from preceding programme period 2007 - 2013	**NO**	**YES**
OP approval within current programme period 2014 - 2020	**NO**	**YES**
Issue of first calls from OP within current programme period 2014 - 2020	**NO**	**YES**
Creation of Department for Energy Efficiency and Savings at the Ministry of Trade and Industry	**NO**	**YES**
Creation of Czech Coordination Committee for Energy Efficiency	**NO**	**YES**
Addition of further additional alternative "policy measures" for increasing support for NAPEE compliance	**NO**	**YES**
Search for further energy savings in agriculture and transport	**NO**	**YES**