MINISTRY OF INDUSTRY AND TRADE

Department of Electrical Engineering
December 2013

Policy measures introduced in order to achieve energy savings among final customers in the Czech Republic

pursuant to Article 7(9) and Article 20(6) of Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency

Contents

1. SAVINGS TARGET

A) Overall savings target

Article 7 of Directive 2012/27/EU on energy efficiency (the 'Directive') establishes a binding end-use energy savings target by 2020 equivalent to achieving new savings of 1.5% of the annual energy sales to final customers.

The basis of the calculation of the binding target under Article 7 was final energy consumption determined according to methodology and statements sent by the Czech Republic to the International Energy Agency and Eurostat every year. As the Czech energy balance for 2012 was not available at the time when this document was being prepared, the final-energy-consumption statistics for 2009, 2010 and 2011 were used. Once the 2012 data become available, we will update the target under Article 7 of the Directive.

Calculation methodology

Non-energy use of fuels and consumption in transport (liquid and gaseous fuels; electricity consumed by traction; coal for steam engines) was subtracted from final energy consumption in the relevant year (2009, 2010, 2011) to provide a 'base', from which own final consumption of energy is also deducted.

Own consumption includes:

- Consumption of own biomass, primarily in households (garden, forest)
- Own wood waste from sawmills, own cellulose extract, etc., as feedstock for own production of electricity and heat
- Energy from solar collectors
- Energy from a heat pump medium
- Biogas for energy production for own consumption (farms, wastewater treatment plants)
- Waste for energy production for own consumption
- Coke, coke-oven, blast-furnace and converter gas produced and consumed in own business
- Coal mined in own deposits and used for energy production for own consumption
- Other fuel and energy not named above but used analogously

In this way, we arrived at the adjusted final consumption of fuels and energy sold from 2009 to 2011. The three-year average was then calculated from this adjusted final consumption. On the basis of that average, 1.5% annual savings were calculated.

Transport was not included in the calculation of the target because the Czech Republic has no plans for the large-scale inclusion of this sector among those sectors in which energy-saving measures will be implemented to meet the target under Article 7; this is due to the

potential for savings in transport and obligations to increase efficiency in transport arising from existing or forthcoming legislation.

Using the values referred to in Article 7(2)(a) of the Directive, after deducting the savings generated by the Green Savings Programme (Article 7(2)(d)), a binding target of savings amounting to 47.84 PJ in 2020 (i.e. cumulative savings in 2020) was calculated for the Czech Republic from the cumulative energy savings (1.5% in 2014–2020) .

Table 1: Calculation of the three-year average as the basis for the calculation of the target

	2009	**2010**	**2011**
	PJ	*PJ*	*PJ*
Final consumption	1081.28	1132.82	1080.11
Transport	260.49	247.97	255.48
Non-energy use	104.30	112.80	98.53
Final energy consumption not sold, Own consumption	124.32	129.52	138.27
Adjusted final consumption of fuels and energy sold	592.17	642.54	587.83
Three-year average		**607.51**	

Table 2: Calculation of binding savings target

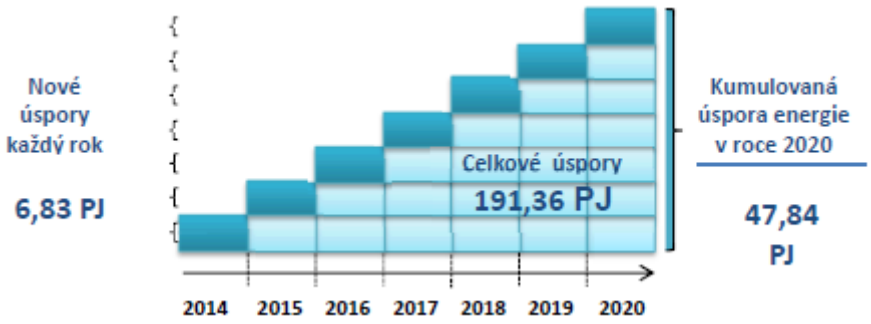
Year	**Three-year average**	**Binding percentage of savings**	**Cumulative volume of savings**
2014	607.51	1%	6.08
2015		1%	12.15
2016		1.25%	19.74
2017		1.25%	27.34
2018		1.5%	36.45
2019		1.5%	45.56
2020		**1.5%**	**54.68**

Savings achieved by the Green Savings Programme	6.84 PJ

Savings target	**47.84 PJ (54.68 – 6.84)**

We have chosen to stagger the build-up of savings over the period up to 2020. Therefore, if savings are evenly distributed between 2014 and 2020, and the target is **47.84 PJ**, the overall savings will be **191.36 PJ**, with **6.83 PJ** of new savings every year.

Graph 1: Calculation of savings up to 2020



New savings every year	**6.83 PJ**
Total savings	**191.36 PJ**
Cumulative energy savings in 2020	**47.84 PJ**

B) Use of exemptions

The Directive allows the savings commitment to be reduced by up to 25% of the original target in four ways. The Czech Republic made use of the option provided for in Article 7(2)(a) and (d) of the Directive, i.e. the commitment was calculated using the stated percentages (1% in 2014 and 2015; 1.25% in 2016 and 2017; 1.5% in 2018, 2019 and 2020). The energy savings achieved by the Green Savings Programme (6.84 PJ) were deducted from that amount. The Green Savings Programme was launched in April 2009 and thus meets the Directive's requirement that individual actions be introduced from 31 December 2008. *(Note: the reference date for support to implement energy saving measures under the Green Savings Programme was 1 April 2009 and thereafter.)* Under the programme, monitoring, processing and reporting was put in place. Its results were regularly evaluated. Therefore, thanks to the individual measures, the savings achieved are measured, reported and verifiable. As the programme focuses on long-term savings, the installation of heating sources using renewable energy and investments in energy savings when structures are retrofitted or newly built are expected to have an impact even beyond 2020.

Applying these exemptions reduces the target overall by 15.95 PJ, which is in line with the Directive's requirement that the use of such concessions must not reduce the target by more than 25%.

Table 3: Calculation of the use of exemptions

Exemption	Potential target reduction
Article 7(2)(a) – Slower introduction of savings	Potential reduction 9.19 PJ
Article 7(2)(b) – Exclusion of the energy consumption of customers covered by the EU emissions trading system	N/A
Article 7(2)(c) – Inclusion of savings achieved in the energy transformation, distribution and transmission sector	N/A
Article 7(2)(d) – inclusion of savings under the Green Savings Programme	Potential reduction 6.84 PJ
Total	**Approx. 15.95 PJ**

2. SELECTING A METHOD FOR THE IMPLEMENTATION OF ARTICLE 7

To comply with Article 7, the Czech Republic has opted to implement a set of other policy measures in accordance with Article 7(9) of the Directive. For implementation purposes, we call this method an 'alternative scheme'.

Of the other policy measures offered and described by the Directive, we will make use of financing schemes and instruments, as well as training and education, including energy advisory programmes, that lead to the application of energy-efficient technology or techniques and have the effect of reducing end-use energy consumption.

- Financial engineering instruments
- Investment grants
- Non-investment grants (analyses of the appropriateness of the energy performance contracting method, energy management, education: advice centres, seminars, publications)

These methods enjoy a long-standing tradition in the Czech Republic. Appropriate processes are established here for the approval of individual projects, and all stakeholders (public authorities, entrusted parties and beneficiaries from the ranks of natural persons and legal persons – public administration, businesses, housing cooperatives, and unit owner associations) have experience of them.

These are methods under which reporting on savings, including cost effectiveness, can be carried out transparently.

If funds for the above forms of support are insufficient to achieve the savings target set by the Directive, we will revise the parametrics and propose expanding the portfolio of financial instruments. We will then consider supplementing the alternative scheme for the second period (from 2018) by incorporating another option (e.g. a national fund) available under the Directive.

In connection with setting the target under Article 7 of the Directive, it should be noted that the Czech Republic's alternative scheme has yet to be submitted to the Government for approval because Directive 2012/27/EU is still being transposed into national legislation and, in particular, there has been a delay in configuring the settings for the next programming period and in publishing 'Commission Guidelines on the Directive'.

We do not yet have sufficient experience of the administration, effective use and evaluation of all the mechanisms. Their use will depend on the successful implementation of pilot projects.

At this stage, we have no plans to introduce any of the following beyond the requirements of EU legislation:

- An energy efficiency obligation (EEO) scheme
- Taxes (on energy or carbon dioxide)
- Regulation
- Stricter rules and standards
- Labelling

3. SETTING INTERMEDIATE PERIODS

We plan to introduce two periods, namely:

- **Period I: 4 years (1 January 2014 – 31 December 2017)**
- **Period II: 3 years (1 January 2018 – 31 December 2020)**

This method of distribution makes more time available in Period I for the approval of the alternative scheme's conditions, introduction and implementation, while providing enough time in Period II for any modifications to support and incentive mechanisms which will help the overall goal to be reached by 2020.

4. IMPLEMENTING PUBLIC AUTHORITIES AND ENTRUSTED PARTIES

Choosing an alternative scheme means that implementation will be in the hands of public authorities or their delegated bodies, and therefore there will be no obligated parties in this system. Consequently, they are not contemplated further. As financial engineering instruments and investment grants financed from public funds are expected to be the primary mechanisms, their administration will be entrusted to entities that already have experience of them. In the Czech Republic, these entities are:

Table 4: Entities managing relevant grant schemes in the Czech Republic

Managing authority	Intermediate body	Sectors of intervention (beneficiaries)	Existing support programmes
Ministry of Industry and Trade	• CzechInvest • Ministry of Industry and Trade	Industry, services (commercial, public parts) 1) legal and natural persons engaged in business, 2) legal persons not engaged in business	• Operational Programme Enterprise and Innovation • State Programme on the Promotion of Energy Savings and the Utilisation of Renewable Energy Sources – EFEKT Programme
Ministry of the Environment	• State Environmental Fund * in cooperation with regions (Moravia-Silesia, Ústí nad Labem, Central Bohemia)	Services (public part), households 1) natural persons not engaged in business 2) legal persons not engaged in business	• Operational Programme Environment • Green Savings Programme • New Green Savings Programme 2013 • New Green Savings Programme • Joint Boiler Replacement Promotion Scheme*
Ministry for Regional Development	• State Housing Development Fund • Holding Fund • Regional Development Centre	Households, public sector 1) legal and natural persons, whether or not engaged in business	• Panel 2013+ Programme • JESSICA Programme • Integrated Operational Programme

The table shows the sectors, beneficiaries and programmes currently managed by these entities. To implement the alternative scheme, the focus of interventions will be configured so as to fulfil the principles of synergy and complementarity. In other words, the interventions of the various entities will be coordinated and, rather than competing with each other, they will complement each other to make the system effective. The detailed sector breakdown among the various implementing public authorities or entrusted parties is described below.

The following are anticipated for purposes of implementation:

1) Amendment of the rules of current programmes as required by the alternative scheme under the Directive.

2) The securing of financial resources under individual programmes sufficient to pursue the energy savings target.

3) The establishment of a central service at the Ministry of Industry and Trade (responsible for the implementation of the Directive), where data and reports from relevant funds and ministries will be collected and used as a basis in the preparation of regular reports to the European Commission on the implementation of the Directive.

5. TARGET SECTORS FOR COMPLIANCE WITH ARTICLE 7 OF THE DIRECTIVE

The structure of the Czech Republic's final energy consumption determines the major areas where the implementation of the Directive will be targeted, especially the industrial sector, as well as households and services. The agricultural sector plays only a marginal role in the implementation of the Directive. Transport measures will be considered for the second period, starting in 2018, if there is insufficient energy savings potential in the key sectors.

Table 5: Structure of final energy consumption in the Czech Republic by sector in 2011

Sector	Annual final energy consumption
Industry	325.2 PJ
Households	246.4 PJ
Services	126.5 PJ
Transport	248.9 PJ
Agriculture	23.1 PJ
TOTAL	**1047.6 PJ**

The alternative scheme will channel support into the following sectors:

- **Industry:**
  - an increase in the energy efficiency of technologies
  - an improvement in the energy performance of buildings

- **Services:**
  - an improvement in the energy performance of buildings
  - an increase in the energy efficiency of technologies
  - savings in outdoor lighting

- **Households:**
  - an improvement in the energy performance of buildings

Predictions of savings targets for the different sectors are proposed with regard to the potential savings in the sector, but also with consideration for a cost-effective approach to the implementation of the Directive. This implies a focus on the business sector, especially industry and services. We consider this distribution to be a framework rather than a binding structure. Every year, performance in the pursuit of the target will be evaluated and the prediction will be updated.

Table 6: Predictions of sector share in the target

Sector	Share of savings	Savings target
Total	**100%**	**47.84 PJ**
Households	29%	14.0 PJ
Services	27%	13.0 PJ
Industry	44%	21.0 PJ

6. ELIGIBLE MEASURES

A) Objectives

The categories of eligible measures are defined indirectly, i.e. not by means of an exhaustive list of specific measures, but through the three basic parameters described in paragraph B). The purpose of such a general definition is to achieve:

- maximum use of the savings potential
- minimum technology- and sector-related restrictions
- motivation for entities to make maximum possible savings
- the transparent and easy counting and reporting of savings
- the transparent support of the measures
- full compliance with the Directive

B) Three basic parameters

The following parameters are proposed to safeguard the criteria:

1. **Three types of support**
   a. Financial engineering instruments
   b. Investment grants
   c. Non-investment grants (analysis of the appropriateness of the Energy Performance Contracting method, energy management, education: advice centres, seminars, publications)

2. **Three methods for determining additionality and materiality**
   a. Motivation to make maximum savings/achieve the minimum specified energy savings
   b. Best available technology
   c. A payback period of longer than 10 (5) years

3. **Each implementing public authority or entrusted party always has a clearly defined scope (sector, beneficiary and method of support)**

C) Systematisation of principles

In order for an energy-saving measure to be eligible for the purposes of the Directive:

- it must be demonstrably implemented as a result of government policy/support
- it must not be a measure common in the current market (generally accepted payback period)
- it must not be a measure/technology required by other European legislation (e.g. old light bulb replacement)

Therefore, it is necessary to establish additionality criteria, the fulfilment of which will qualify an investment for state aid and thus for reporting on the implementation of the Directive. A method of support should then be assigned to each additionality criterion. The draft systematisation of additionality and the type of support for the Czech alternative scheme is as follows:

Table 7: Additionality

Additionality	Type of support	Potential flexibility
Motivation to achieve maximum savings/the minimum specified energy savings	Financial engineering instrument	The higher the savings, the higher the discount, e.g. each 10% saving = 1% discount on interest. / Variability when setting the minimum savings required
Best available technology (BAT)	Investment grants	-
A payback period of longer than 10 (5) years	Investment grants	-

To meet the Directive's requirement of avoiding the double counting of savings from the same measure, the implementation of the alternative scheme for individual interventions will be configured so as to comply with the principles of synergy and complementarity. In other words, the interventions of the various entities will be coordinated and, rather than competing with each other, they will complement each other. The system will then be not only transparent, but also more applicant-friendly. Each applicant for support will be able to submit an application only to one implementing public authority or entrusted party. The choice of authority or party and type of support will depend on the applicant's legal personality and on the advantages offered by the support to the proposed measure.

Table 8: Distribution of the target among public authorities or entrusted parties in the Czech Republic

Public authority	Intermediate body	Sector	Additionality	Type of support	Predicted share in the savings target
Ministry of Trade and Industry	▪ Českomoravská záruční a rozvojová banka ▪ Holding Fund ▪ CzechInvest	▪ Industry ▪ Services	▪ Motivation to make maximum savings/achieve the minimum specified energy savings ▪ Payback period > 5 years	▪ Financial engineering instruments ▪ Investment grants ▪ Non-investment grants	60%
Ministry of the Environment	▪ State Environmental Fund	▪ Households ▪ Services	▪ Best available technology ▪ Motivation to make maximum savings/achieve the minimum specified energy savings	▪ Investment grants	29%
Ministry for Regional Development	▪ State Housing Development Fund ▪ Regional Development Centre	▪ Households	▪ Motivation to make maximum savings/achieve the minimum specified energy savings ▪ Payback period > 10 years ▪ Best available technology	▪ Financial engineering instruments ▪ Investment grants	11%

The purpose of this distribution is to ensure simplicity and maximum flexibility. In the business sector, the use of financial engineering instruments is mainly projected, along with investment grants (temporarily or complementarily). In the public sector, it is envisaged that investment grants will remain the primary vehicle, although where possible they will be supplemented by the use of energy performance contracting to maximise savings and to safeguard the high-level validity of energy saving reporting. The housing sector is split into parts using financial instruments and investment grants. The distribution of the fulfilment of the target among individual public authorities is proposed with regard to the sector in which the public authority (ministry) intervenes, and follows up on predictions of the shares listed in Table 6. The Ministry of Industry and Trade intervenes in the business sector, including industry and commercial services. The Ministry of the Environment intervenes in the housing sector and public services. The Ministry for Regional Development intervenes in the field of households – housing. The pursuit of the target among the ministries is distributed on the

basis of cost-effectiveness in achieving energy savings, potential savings in each sector, and each ministry's known provisional financial allocations to financial instruments.

D) Methods for determining additionality and materiality

a) Motivation to make maximum savings/achieve the minimum specified energy savings

Qualification criteria

The proposed method of support (the greater the savings, the higher the intensity of support) allows any energy-saving measures to be supported. It is enough to apply for support and demonstrate savings by means of an audit certified by an energy auditor.

If this approach is highly ambitious, minimum required savings (e.g. 20%) may be set for which it would be possible to apply for financial support.

Determining the amount of savings

The amount of savings will be calculated ex-ante by a qualified energy auditor.

Determining the amount of a grant

The amount of a grant will be determined on the basis of information on currently supported projects and market sensitivity. The basic amount of public intervention will correspond to the minimum required level of energy savings. If a higher level of energy savings is achieved, the applicant will receive a bonus.

b) Best available technology (BAT)

Qualification criteria

The competent implementing public authorities or entrusted parties will draw up lists of standard energy-saving measures in the sector, along with appropriate technology, and will specify the parameters of the best available technology.

The following are contemplated as the best available technologies:

- General categories of technology with energy efficiency demonstrably higher than the technology currently used (e.g. LED technology, micro-cogeneration units, etc.)
- Already established technology with advanced parameters (e.g. gas condensing boilers, heat pumps with a high coefficient of performance, etc.)

Determining the amount of savings

The amount of savings in this category can be determined by comparing the energy performance of the best available technologies acquired with:

- the energy performance of the technology that would otherwise have been acquired (commercially available data today)
- the energy performance of the technology which is being replaced or which is currently used most widely (parameters commonly available 10 to 20 years ago)

The amount of savings will be calculated in a transparent manner, with a specification of all relevant assumptions and calculation procedures, in general accordance with the principles set out in section 5 – calculation of savings.

Determining the amount of support

The amount of the grant will be set uniformly for each sector. It will generally be set at a level ensuring a return on the investment in the best technology available comparable with an investment in currently common, but less efficient technology.

c) Payback period > 10 (5) years

Qualification criteria

Based on experience of previous programmes (e.g. Green Savings), the public authority or entrusted party will establish a list of measures with a payback period that is demonstrably longer than 10 years (or five years for the business sector). The purpose is to support measures which have a long life but which are expensive compared with other measures.

Determining the amount of savings

The amount of savings will be calculated by comparing energy needs in the current situation and the situation after the implementation of energy-saving measures. In view of the longer payback period, a scenario where such a measure is implemented without state support is not taken into account.

Determining the amount of a grant

The amount of the grant will be set on the basis of experience gained from previous programmes. In general, it should be at a level reducing the payback period to a duration generally acceptable in a given sector (e.g. under 10 years for households, under 5 years for industry, etc.)

7. METHODOLOGY FOR THE CALCULATION OF SAVINGS

The calculation of savings should be:

- Low-cost (especially relative to the size of the investment)
- Transparent – easy to understand
- Multidimensional – containing the difference in energy consumption per year and over the lifetime of the investment, and possibly other relevant data
- Applicable to a decision on the amount of the grant

The Directive offers four basic options for the calculation of savings:

1) Deemed savings – ex-ante calculated savings for selected measures based on previous experience
2) Metered savings – ex-post savings calculation based on a comparison of the situation before and after the implementation of the measure. This requires the inclusion of periphery factors such as population, temperature changes, etc.
3) Scaled savings – the use of engineering estimates. According to the Directive, this approach may be used only in cases where establishing robust measured data for a specific installation is difficult or disproportionately expensive. It is ideal for industry.
4) Surveyed savings – savings resulting from changes in consumer behaviour due to information campaigns, certification schemes or the introduction of smart metering. This approach may not be used for savings resulting from the introduction of physical measures.

Each option is useful for a different type of support mechanism or sector. We assume that all means of calculating energy savings will come into play in the initial phase.

1) Deemed savings

Calculation of savings

In the preparation of grant schemes, summaries of the most common energy-saving measures will be drawn up and estimates of savings will be assigned to them on the basis of:

- Model calculations (a comparison of the energy performance of new technologies and technologies commonly used today)
- Experience of previous programmes, such as the Green Savings Programme

Reporting of savings

The reporting of savings will be configured ex-ante, with no need for energy audits or projects. Savings are reported in an on-line questionnaire and documented by invoices for the technology purchased, labour, energy in previous periods, etc. (*note: for support under the New Green Savings Programme 2013 and the New Green Savings Programme for Family Houses, an energy audit is attached to the application*).

Checks

Implementing public authorities check the correctness of the documentation for all projects implemented. On-the-spot checks are conducted on a large proportion of the projects supported.

2) Metered savings

Metered savings will be required primarily:

- in sectors in which savings can be measured in a robust manner at relatively low cost relative to the overall investment.
- in projects in which the energy performance contracting (EPC) mechanism is used, which measurements of savings are an essential part of the contract between the party ordering and the party supplying the measure.

Calculation of savings

Savings will be calculated by reference to the duration of the current state of play. The actual configuration of support motivating maximum savings is viewed as a sufficient element of additionality.

The primary criterion will be the immediate reduction in consumption, measured over one year, which must be reviewed by an auditor according to standard statistical methods (taking into account working days, changes in demand, weather conditions, building use, etc.). Methods used in the EPC sector may be useful here.

The amount of savings will always be calculated ex-post by a qualified energy auditor. Savings may be quantified:

- once a year (e.g. for EPC)
- after a predetermined time (e.g. five years)
- on repayment of the loan or at the end of the project's useful life

Reporting of savings

Reporting will take place ex-post, after the savings achieved have been documented in the form of an energy audit and the savings have been recognised for the purposes of awarding a grant.

Checks

The correctness of documentation is checked centrally in all cases. This is followed by random on-the-spot checks.

3) Scaled savings

According to the Directive, technical estimates may be used only in cases where establishing robust measured data for a specific installation is difficult or disproportionately expensive. This approach requires benchmarking and methodology for calculating savings, and the services of an energy auditor are essential here. It is ideal for industry and, to some extent, other comprehensive units and measures.

4) Surveyed savings

Surveyed savings will be applied to non-investment support targeted at information campaigns. The methodology will be attached when reporting on individual actions.

8. LIFETIME OF MEASURES

Our aim is to ensure non-discriminatory support for the widest array of energy-saving measures. With this in mind, it is best to use the 'discount' method with a factor which ensures that the overall savings will be similar to a situation where a straightforward method is used.

The approach to identifying the optimal discount factor was as follows:

1. Distribution of the annual savings target among measures with varying (minimum) useful lives – this distribution reflects the potential for savings in each sector
2. Verification that the amount of savings in the years 2014 to 2020 is consistent with the overall savings target under the Directive, and, where appropriate, adaptation of the amount of savings to the overall target under the Directive
3. The search for a discount factor that will provide the same or a similar amount of savings without having to make them in the first few years after the introduction of the alternative scheme

Table 9: Straightforward method for calculating the lifetime of a measure

Lifetime	**3**	**5**	**7**	**10**	**15**	**Total**
Ratio/year	**0.72**	**1.8**	**1.8**	**1.8**	**1.08**	**7.2 PJ**
Year of measure	Impact of the measure on the fulfilment of the overall target [PJ]					
2014	2.16	9	12.6	12.6	7.56	**43.92 PJ**
2015	2.16	9	10.8	10.8	6.48	**39.24 PJ**
2016	2.16	9	9	9	5.4	**34.56 PJ**
2017	2.16	7.2	7.2	7.2	4.32	**28.08 PJ**
2018	2.16	5.4	5.4	5.4	3.24	**21.6 PJ**
2019	1.44	3.6	3.6	3.6	2.16	**14.4 PJ**
2020	0.72	1.8	1.8	1.8	1.08	**7.2 PJ**
Total	-	-	-	-	-	**189 PJ**

With the straightforward method, it is the initial years that logically have the greatest impact on the fulfilment of the target. Therefore, it is best to channel most grants into the early years of the scheme. However, another method – one impacting on performance in pursuit of the target evenly every year – appears to be more suited to the Czech Republic's purposes: the discount method.

With the method discounting future savings, the impact on the target is reduced by a factor every year until the end of the measure's lifetime (even if the lifetime of the measure extends beyond the last year of the Directive – 2020). For measures saving 1 GJ per year and having a three-year lifetime and a 10% discount factor, the impact on the target is calculated as follows: 1 + 1 x 0.9 + 1 x 0.9 x 0.9 = 2.71 GJ. This impact (unlike the straightforward method) is the same for measures implemented in both 2014 and 2020. Nevertheless, a discount factor needs to be identified that, bearing in mind the distribution of the measure (categorisation based on minimum lifetime) returns the same amount of savings.

To achieve overall savings of 191.36 PJ with the distribution of savings proposed here (ratio/year), the optimal discount factor is **21.5%**. The uniform factor means that the impact on the fulfilment of the overall target is the same each year.

Table 10: Discount method for calculating the lifetime of a measure

Lifetime	**3**	**5**	**7**	**10**	**15**	**Total**
Ratio/year	**0.72**	**1.8**	**1.8**	**1.8**	**1.08**	**7.2 PJ**
Year of measure	Impact of the measure on the fulfilment of the overall target [PJ]					
2014	0.89	6.17	7.30	8.31	5.44	28.11 PJ
2015	0.89	6.17	7.30	8.31	5.44	28.11 PJ
2016	0.89	6.17	7.30	8.31	5.44	28.11 PJ
2017	0.89	6.17	7.30	8.31	5.44	28.11 PJ
2018	0.89	6.17	7.30	8.31	5.44	28.11 PJ
2019	0.89	6.17	7.30	8.31	5.44	28.11 PJ
2020	0.89	6.17	7.30	8.31	5.44	28.11 PJ
Total	-	-	-	-	-	**188.7 PJ**

9. CONTROL SYSTEM, INCLUDING INDEPENDENT VERIFICATION OF A STATISTICALLY SIGNIFICANT PROPORTION OF THE ENERGY EFFICIENCY IMPROVEMENT MEASURES

All implementing public authorities in the Czech Republic conduct ex-post administrative and physical checks. Physical checks are conducted on a statistically significant sample of the projects implemented. In the Czech Republic, the Supreme Audit Office is responsible for subsequent supervision of the quality of administration.

10. APPROACH TAKEN TO ADDRESS CLIMATIC VARIATIONS WITHIN MEMBER STATES

Climatic conditions are taken into account in the framework of technical standards when calculating the energy performance of a building. There are no plans to take up additional measures beyond the scope of current practice.

11. QUALITY STANDARDS

In promoting the uptake of energy efficiency measures, we will ensure that quality standards for products, services and installation of measures are maintained. We are ready to implement quality standards not currently available to us so that we can fully pursue energy efficiency targets.

12. REPORTS ON THE MONITORING AND VERIFICATION OF THE SAVINGS MADE, AND HOW THE INDEPENDENCE OF THESE REPORTS FROM THE OBLIGATED, PARTICIPATING OR ENTRUSTED PARTIES IS ENSURED

Energy assessments are enshrined in Czech national law. A model energy assessment and the scope thereof can be found in Implementing Decree No 480/2012 on energy audits and assessments, which implements Act No 406/2000 on energy management.

13. AUDIT REPORTS

The particulars of an energy audit can be found in Implementing Decree No 480/2012 on energy audits and assessments, which implements Act No 406/2000 on energy management.

Table 10: Summary of the main functional principles of the alternative scheme

Implementing public authority	Intermediate body	Programme	Sector	Additionality	Form of support	Calculation of savings	Award of support
Ministry of Industry and Trade	Českomoravská záruční a rozvojová banka, Holding Fund	Operational Programme Enterprise and Innovation for Competitiveness	Industry, services	• Minimum level of energy savings achieved/motivation to make maximum savings	Financial engineering instruments	Deemed	Ex-ante/Ex-post
	CzechInvest	Operational Programme Enterprise and Innovation for Competitiveness	Industry, services	• Payback period > 5 years	Investment grants	Deemed, Scaled	Ex-ante
	Ministry of Industry and Trade	EFEKT Programme	Industry, Services (public sector),	• Payback period > 5 (10) let	Investment and non-investment grants	Deemed, Surveyed savings	Ex-ante
Ministry of the Environment	State Environmental Fund	New Green Savings	Households, services (public sector)	• Best available technology • Minimum level of energy savings achieved/motivation to make maximum savings	Investment grants	Deemed	Ex-ante/Ex-post
		New Green Savings 2013	Households, services (public sector)	• Best available technology • Minimum level of energy savings achieved/motivation to make maximum savings	Investment grants	Deemed	Ex-ante/Ex-post
		Operational Programme Environment	Services (public sector)	• Best available technology	Investment grants	Deemed	Ex-ante
		Joint Boiler Replacement Scheme	Households	• Best available technology	Investment grants	Deemed	Ex-ante
Ministry for Regional Development	State Housing Development Fund, Regional Development Centre	Panel Programme	Households	• Minimum level of energy savings achieved/motivation to make maximum savings • Payback period > 10 years Best available technology	Financial engineering instruments	Deemed	Ex-ante/Ex-post
		Integrated Regional Operational Programme	Households	• Minimum level of energy savings achieved/motivation to make maximum savings • Payback period > 10 years • Best available technology	Financial engineering instruments, investment grants	Deemed	Ex-ante
		Jessica Programme	Households	• Minimum level of energy savings achieved/motivation to make maximum savings • Payback period > 10 years • Best available technology	Financial engineering instruments	Deemed	Ex-ante

Annex

Table 11: Procedure for calculating the savings under consideration

Years evaluated	**2009**	**2010**	**2011**
Unit	**PJ**	**PJ**	**PJ**
Final consumption in the Czech Republic	**1 081.28**	**1 132.82**	**1 080.11**
Transport	260.49	247.97	255.48
Non-energy use	104.30	112.80	98.53
Basis	**716.49**	**772.05**	**726.10**
Energy not sold (fuel)			
BIOMASS			
Households	28.42	30.86	28.95
Final consumption of own biomass in industry (heat)	16.28	16.73	15.77
Final consumption of own biomass in industry (power)	0.15	0.16	0.16
SOLAR COLLECTORS			
Solar collectors	0.27	0.37	0.46
BIOGAS			
Final consumption of own biogas (heat)	1.57	2.28	2.95
Final consumption of own biogas (power)	0.03	0.04	0.05
Solid municipal waste			
Final consumption of solid municipal waste in incinerators (heat)	0.59	1.47	1.43
Final consumption of solid municipal waste in incinerators (power)	0.00	0.01	0.01
INDUSTRIAL WASTE			
Final consumption of industrial waste in incinerators (heat)	0.28	0.27	0.27
COKE			
Final consumption of own coke (technology)	45.17	43.88	55.12
COKE-OVEN GAS			
Final consumption of own coke-oven gas	5.00	4.89	4.83
BLAST-FURNACE GAS			
Final consumption of own blast-furnace gas	7.53	8.34	8.59
CONVERTER GAS			
Final consumption of own converter gas	1.32	1.12	1.99

LIGNITE			
Final consumption of own lignite (power)	0.08	0.08	0.07
Final consumption of own lignite (heat)	9.30	10.00	8.80
OTHER FUEL			
Final consumption of own other fuel (power)	0.02	0.02	0.02
Final consumption of own other fuel (heat)	8.30	9.00	8.80
Deductions	**124.32**	**129.52**	**138.27**
Adjusted final consumption of fuels and energy sold	**592.17**	**642.54**	**587.83**

Reduction compared to initial value	83%	83%	81%

Three-year average	**PJ**	**607.511**

Year	**Calculation final consumption**	**Savings**
	PJ	**PJ**
2014	607.511	9.11
2015	607.511	18.23
2016	607.511	27.34
2017	607.511	36.45
2018	607.511	45.56
2019	607.511	54.68
2020	607.511	**63.79**

	PJ	**TWh**
Cumulative savings	**63.79**	17.72
Deduction of 25% reduction in commitment	15.95	4.43
Energy-saving commitment	**47.84**	**13.29**