

# ISO/TS 50044:2019-11 (E)

## Energy saving projects (EnSPs) - Guidelines for economic and financial evaluation

<b>Contents</b>		<b>Page</b>
	Foreword.....	v
	Introduction.....	vi
<b>1</b>	<b>Scope</b> .....	<b>1</b>
<b>2</b>	<b>Normative references</b> .....	<b>1</b>
<b>3</b>	<b>Terms and definitions</b> .....	<b>1</b>
<b>4</b>	<b>Symbols and abbreviated terms</b> .....	<b>5</b>
<b>5</b>	<b>Planning an economic and financial evaluation of an EnSP</b> .....	<b>6</b>
5.1	General.....	6
5.2	Description of an EnSP and associated lifetime.....	7
5.3	Identification and definition of the boundaries.....	7
5.3.1	General.....	7
5.3.2	Examples of EnSP boundaries.....	7
5.4	Data collection.....	8
5.5	Evaluation objectives and required accuracy.....	9
<b>6</b>	<b>Estimation and calculation of energy and non-energy effects</b> .....	<b>9</b>
6.1	Prediction and estimation of energy savings.....	9
6.2	Energy savings calculation.....	9
6.3	Estimation of non-energy effects.....	10
6.4	Conversion of EnSP effects into economic value.....	10
6.4.1	General.....	10
6.4.2	Revenues.....	10
6.4.3	Estimation of external costs and benefits.....	10
<b>7</b>	<b>Identification and calculation of costs and cash flows</b> .....	<b>10</b>
7.1	General.....	10
7.2	Cost characteristics.....	11
7.2.1	General.....	11
7.2.2	Variable cost.....	11
7.2.3	Fixed costs.....	12
7.2.4	Total capital investment.....	12
7.3	Cash flows description.....	13
7.3.1	General.....	13
7.3.2	Accounting for future cash flows.....	14
7.3.3	Rates of time preference or comparison.....	14
7.3.4	Choosing a rate of time preference or comparison.....	14
<b>8</b>	<b>Analysis and assessment</b> .....	<b>15</b>
8.1	Economic and financial indicators.....	15
8.1.1	General.....	15
8.1.2	Present value.....	16
8.1.3	Net present value.....	16
8.1.4	Internal rate of return.....	17
8.1.5	Payback period.....	17
8.1.6	Life cycle cost analysis.....	18
8.1.7	Profitability index.....	19
8.2	Assessment.....	20
8.2.1	General.....	20
8.2.2	Sensitivity analysis.....	20
8.2.3	Uncertainty and risk assessment.....	20

8.3	Analysis.....	22
	8.3.1 Energy data quality.....	22
	8.3.2 Social cost benefit analysis.....	22
8.4	Decision-making.....	24
	8.4.1 General.....	24
	8.4.2 Selection of an EnSP based on indicators.....	24
<b>9</b>	<b>Reporting.....</b>	<b>25</b>
	<b>Annex A (informative) Energy savings calculation steps.....</b>	<b>26</b>
	<b>Annex B (informative) Example of cost characteristics.....</b>	<b>28</b>
	<b>Annex C (informative) Examples of payback period calculation.....</b>	<b>29</b>
	<b>Annex D (informative) Example of net present value calculation.....</b>	<b>31</b>
	<b>Annex E (informative) Examples of internal rate of return calculation.....</b>	<b>33</b>
	<b>Annex F (informative) Example of life cycle cost analysis.....</b>	<b>37</b>
	<b>Bibliography.....</b>	<b>40</b>