

ISO 50047:2016-11 (E)

Energy savings - Determination of energy savings in organizations

Contents		Page
Foreword		v
Introduction		vi
1	Scope	1
2	Normative references	1
3	Terms and definitions	1
4	Preliminary considerations and boundaries	5
4.1	Preliminary considerations	5
4.2	Approaches to determining energy savings	5
4.2.1	Two approaches to determining energy savings	5
4.2.2	Organization-based approach	5
4.2.3	EPIA-based approach	6
4.3	Determining the boundaries	7
5	Energy accounting	8
5.1	General principles of energy accounting	8
5.2	Measurement of energy consumption and stocks	8
5.3	Types of energy with relatively insignificant consumption	9
5.4	Expressing energy consumption in common units	10
5.5	Primary and delivered energy	10
5.5.1	General	10
5.5.2	Conversion of delivered energy to primary energy	11
6	Data preparation for determination of energy savings	12
6.1	Selection of time periods	12
6.2	Establishing the energy baseline	12
6.3	Non-routine adjustments	13
6.4	Normalization for relevant variables	13
6.4.1	General principles	13
6.4.2	Methods of normalization	14
6.4.3	Summary of normalization methods	15
6.4.4	Determination of normalized energy consumption	15
7	Calculation of energy savings	18
7.1	General principles	18
7.2	EPIA-based approach to determining energy savings	20
7.2.1	General principles	20
7.2.2	Indirect energy effects	20
7.2.3	Avoiding double counting	21
7.3	Ensuring consistency between organization-based and EPIA-based approaches	21
8	Improving the accuracy of energy savings results	22
8.1	Data quality	22
8.2	Errors in determining energy savings	22
8.3	Acceptable uncertainty criteria	23
9	Reporting energy savings	23
9.1	General	23

9.2	Reporting considerations for groups of companies	23
9.3	Communicating energy savings results	23
	Annex A (informative) Flowchart for determination of energy savings	25
	Annex B (informative) Reconciliation between organization level and EPIA-based energy savings ..	26
	Annex C (informative) Example of energy accounting in a cement plant	28
	Annex D (informative) Example of normalization of energy consumption in a cement plant	32
	Annex E (informative) Example of calculating energy savings for an organization producing various products	36
	Annex F (informative) Further information on communicating energy savings	39
	Bibliography	41