

# DIN EN ISO 11011:2015-08 (E)

## Compressed air - Energy efficiency - Assessment (ISO 11011:2013)

---

<b>Contents</b>		<b>Page</b>
<b>Foreword</b> .....		<b>4</b>
<b>Introduction</b> .....		<b>5</b>
<b>1 Scope</b> .....		<b>6</b>
<b>2 Normative references</b> .....		<b>6</b>
<b>3 Terms and definitions</b> .....		<b>6</b>
3.1 General.....		7
3.2 Flow.....		8
3.3 Pressure.....		9
3.4 Storage.....		10
3.5 Volume.....		10
<b>4 Roles and responsibilities</b> .....		<b>11</b>
4.1 Identification of assessment team members.....		11
4.2 Site management support.....		12
4.3 Communications.....		12
4.4 Access to equipment, resources, and information.....		12
4.5 Assessment objectives and scope.....		12
4.6 Identification of other assessment team members.....		12
4.7 Objective check.....		12
<b>5 Assessment methodology</b> .....		<b>13</b>
5.1 General.....		13
5.2 Systems engineering methods.....		13
5.3 Systems engineering process.....		13
5.4 System assessment process.....		14
<b>6 Parameters and their determination</b> .....		<b>15</b>
6.1 General.....		15
6.2 Measurement.....		15
6.3 Pressure.....		15
6.4 Flow rate.....		16
6.5 Power.....		17
<b>7 Initial data collection and evaluation</b> .....		<b>18</b>
7.1 General.....		18
7.2 Plant background.....		18
7.3 Plant function.....		18
7.4 Compressed air system definition.....		18
7.5 Inventory of key end-use air demands.....		18
7.6 Heat recovery.....		18
7.7 Baseline period and duration of data logging.....		19
7.8 Energy use.....		19
7.9 Compressed air system supply efficiency.....		19
7.10 System volume.....		19
7.11 Pressure.....		20
7.12 Flowrate.....		20
7.13 Critical air demands.....		20
7.14 Compressed air waste.....		20
7.15 Air treatment.....		20
7.16 Compressor control.....		21
7.17 Storage.....		21
7.18 Maintenance.....		21
7.19 Ambient intake conditions.....		21
<b>8 Analysis of data from assessment</b> .....		<b>21</b>
8.1 General.....		21

8.2	Baseline profiles .....	22
8.3	System volume .....	24
8.4	Pressure profile .....	24
8.5	Perceived high-pressure demand .....	26
8.6	Demand profile .....	27
8.7	Critical air demands .....	28
8.8	Compressed air waste .....	29
8.9	Optimized air treatment .....	30
8.10	Reduced system operating pressure .....	31
8.11	Balance of supply and demand .....	32
8.12	Maintenance opportunities .....	32
8.13	Heat recovery opportunities .....	33
<b>9</b>	<b>Reporting and documentation of assessment findings .....</b>	<b>33</b>
9.1	Assessment report .....	33
9.2	Confidentiality .....	34
9.3	Energy-saving opportunities .....	34
9.4	Data for third-party review .....	34
	<b>Annex A (informative) Introduction to energy assessment .....</b>	<b>35</b>
	<b>Annex B (informative) Assessment activities — General .....</b>	<b>37</b>
	<b>Annex C (informative) Assessment activities — Supply .....</b>	<b>42</b>
	<b>Annex D (informative) Assessment activities — Transmission .....</b>	<b>48</b>
	<b>Annex E (informative) Assessment activities — Demand .....</b>	<b>52</b>
	<b>Annex F (informative) Competencies .....</b>	<b>55</b>
	<b>Bibliography .....</b>	<b>56</b>