## SINGAPORE STANDARD SS ISO 50001: 2011 (ICS 27.010)

### Energy management systems – Requirements with guidance for use

Published by
SPRING Singapore
1 Fusionopolis Walk
#01-02 South Tower, Solaris
Singapore 138628
SPRING Singapore Website: www.spring.gov.sg
Standards Website: www.standards.org.sg



#### SINGAPORE STANDARD

SS ISO 50001: 2011

(ICS 27.010)

# Energy management systems – Requirements with guidance for use

All rights reserved. Unless otherwise specified, no part of this Singapore Standard may be reproduced or utilised in any form or by any means, electronic or mechanical, including photocopying and microfilming, without permission in writing from SPRING Singapore at the address below:

Head Standards SPRING Singapore 1 Fusionopolis Walk #01-02 South Tower, Solaris Singapore 138628 Tel: (65) 6278 6666 Fax: (65) 6278 6667 Email: stn@spring.gov.sg

ISBN 978-981-4353-03-08

This Singapore Standard was approved by the Management Systems Standards Committee on behalf of the Standards Council of Singapore on 28 March 2011.

First published, 2011

The Management Systems Standards Committee appointed by the Standards Council consists of the following members:

		Name	Capacity
Chairman	:	Mr Wee Siew Kim	Member, Standards Council
Secretary	:	Mr Jason Low	SPRING Singapore
Members	:	Mr Go Heng Huat	Ministry of Manpower
		Mr Gary Lai Pau Nyen	Risk and Insurance Management Association of Singapore
		Mr Ngiam Tong Yuen	Society of Loss Prevention in the Process Industries
		Mr Ong Liong Chuan	SP PowerGrid Limited
		Mr Seah Seng Choon	Consumers Association of Singapore
		Mr Harnek Singh	ST Engineering Limited
		Mr Daniel Steele	Singapore Business Federation
		Dr Reginald Tan Beng Hee	National University of Singapore
		Er. Teo Kong Poon	Seagate Technology International
		Mr Thomas Thomas	Individual Capacity

The Working Group appointed by the Management Systems Standards Committee to assist in the preparation of this standard comprises the following experts who contribute in their *individual capacity*:

#### Name

**Convenor** : Er. Teo Kong Poon

Secretary : Ms Karen Koh

Members : Prof Ang Beng Wah

Mr Ho Hiang Kwee
Mr Derrick Hong
Mr Jason Lai
Mr Lee Chin Hoo
Mr Ng Tiong Wei
Er. Seow Kang Seng
Mr Takatoshi Suzuki
Mr Melvin Tan

Mr Melvin Tan Mr Tay Leng Chua

Assoc Prof Toh Kok Chuan

The organisations in which the experts of the Working Group are involved are:

DNV Clean Technology Centre EMSI Green Energy Market Authority Nanyang Technological University National Environment Agency

SS ISO 50001: 2011

National University of Singapore
Petrochemical Corporation of Singapore Pte Ltd
Pfizer Asia Pte Ltd
Seagate Technology International
Singapore Accreditation Council
Soitec Singapore Pte Ltd
United Premas Limited

SS ISO 50001: 2011



#### **COPYRIGHT PROTECTED DOCUMENT**

© ISO 2011

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Con	tents	Page
Nation	nal Foreword	6
Forew	ord	7
	uction	
introd		
1	Scope	10
2	Normative references	10
3	Terms and definitions	10
4	Energy management system requirements	14
4.1	General requirements	
4.2	Management responsibility	14
4.2.1	Top management	
4.2.2	Management representative	
4.3	Energy policy	15
4.4	Energy planning	15
4.4.1	General	15
4.4.2	Legal requirements and other requirements	16
4.4.3	Energy review	16
4.4.4	Energy baseline	16
4.4.5	Energy performance indicators	17
4.4.6	Energy objectives, energy targets and energy management action plans	17
4.5	Implementation and operation	
4.5.1	General	
4.5.2	Competence, training and awareness	17
4.5.3	Communication	
4.5.4	Documentation	
4.5.5	Operational control	
4.5.6	Design	
4.5.7	Procurement of energy services, products, equipment and energy	19
4.6	Checking	
4.6.1	Monitoring, measurement and analysis	
4.6.2	Evaluation of compliance with legal requirements and other requirements	
4.6.3	Internal audit of the EnMS	
4.6.4	Nonconformities, correction, corrective action and preventive action	
4.6.5	Control of records	
4.7	Management review	
4.7.1	General	
4.7.2	Input to management review	
4.7.3	Output from management review	
	x A (informative) Guidance on the use of this International Standard	
		∠ა
Annex	B (informative) Correspondence between ISO 50001:2011, ISO 9001:2008, ISO 14001:2004 and ISO 22000:2005	29
Biblio	graphy	31

SS ISO 50001: 2011

#### **National Foreword**

This Singapore Standard was prepared by the Working Group on Energy Management under the purview of the Management Systems Standards Committee.

This standard is identical with ISO 50001: 2011 published by the International Organization for Standardization.

Where the words "International Standard" appear, they shall be read as "Singapore Standard". The reference to International Standards shall be replaced by the following Singapore Standards:

International Standard Corresponding Singapore Standard

ISO 50001 SS ISO 50001

ISO 9001:2008 SS ISO 9001:2008

ISO 14001:2004 SS ISO 14001:2004

At the time of publication, this standard is expected to be used for certification/registration and/or self declaration of an organisation's energy management system.

Attention is drawn to the possibility that some of the elements of this Singapore Standard may be the subject of patent rights. SPRING Singapore shall not be held responsible for identifying any or all of such patent rights.

#### NOTE

- Singapore Standards are subject to periodic review to keep abreast of technological changes and new technical developments. The changes in Singapore Standards are documented through the issue of either amendments or revisions.
- Compliance with a Singapore Standard does not exempt users from legal obligations.

#### **Foreword**

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 50001 was prepared by Project Committee ISO/PC 242, Energy Management.