

STN	Vodík v energetických systémoch Slovník (ISO 24078: 2025)	STN EN ISO 24078 65 7601
------------	--	--

Hydrogen in energy systems - Vocabulary (ISO 24078:2025)

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 10/25

Obsahuje: EN ISO 24078:2025, ISO 24078:2025

141317

Úrad pre normalizáciu, metrológiu a skúšobníctvo Slovenskej republiky, 2025
Slovenská technická norma a technická normalizačná informácia je chránená zákonom č. 60/2018 Z. z. o technickej normalizácii
v znení neskorších predpisov.

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 24078

July 2025

ICS 27.075; 01.040.27

English Version

**Hydrogen in energy systems - Vocabulary (ISO
24078:2025)**

Hydrogène dans les systèmes énergétiques -
Vocabulaire (ISO 24078:2025)

Wasserstoff in Energiesystemen - Vokabular (ISO
24078:2025)

This European Standard was approved by CEN on 24 June 2025.

CEN and CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN and CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN and CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN and CENELEC members are the national standards bodies and national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

EN ISO 24078:2025 (E)

Contents	Page
European foreword.....	3

European foreword

This document (EN ISO 24078:2025) has been prepared by Technical Committee ISO/TC 197 "Hydrogen technologies" in collaboration with Technical Committee CEN-CENELEC/ JTC 6 "Hydrogen in energy systems" the secretariat of which is held by NEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by January 2026, and conflicting national standards shall be withdrawn at the latest by January 2026.

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

Any feedback and questions on this document should be directed to the users' national standards body/national committee. A complete listing of these bodies can be found on the CEN and CENELEC websites.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

Endorsement notice

The text of ISO 24078:2025 has been approved by CEN-CENELEC as EN ISO 24078:2025 without any modification.



International Standard

ISO 24078

Hydrogen in energy systems — Vocabulary

Hydrogène dans les systèmes énergétiques — Vocabulaire

**First edition
2025-06**

ISO 24078:2025(en)



COPYRIGHT PROTECTED DOCUMENT

© ISO 2025

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

ISO 24078:2025(en)**Contents**

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
3.1 Energy.....	1
3.2 Energy system and market.....	5
3.3 Electric Power Network.....	9
3.4 Hydrogen production system.....	10
3.5 Hydrogen production equipment.....	13
3.6 Hydrogen infrastructure.....	14
3.6.1 General.....	14
3.6.2 Components.....	15
3.6.3 Stations and plants.....	16
3.7 Hydrogen storage.....	17
3.8 Hydrogen fuelled heat and power generation devices.....	19
3.9 Hydrogen-to-X.....	22
3.10 Gas mixture.....	23
3.11 Safety.....	25
3.12 Risk reduction measure.....	27
3.13 Hydrogen detection.....	31
3.14 Metrology.....	31
3.15 Quality of energy carriers.....	32
3.16 Testing.....	34
3.17 Certification.....	35
3.18 Materials compatibility.....	36
Bibliography	38
Index	42

ISO 24078:2025(en)**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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents. ISO shall not be held responsible for identifying any or all such patent rights.

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by ISO TC 197, *Hydrogen Technologies*, in collaboration with Technical Committee CEN-CENELEC/JTC 6, *Hydrogen in Energy Systems*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

ISO 24078:2025(en)

Introduction

In this document, terms and definitions have been identified, reviewed and proposed to cover technical aspects for hydrogen in energy systems, with input from sources such as ISO/IEC Standards, European Standards from CEN and CENELEC, national standards, and existing definitions from the dictionaries relevant to particular industries.

This document only contains terms used to describe hydrogen in energy systems within the scope of CEN/CLC/JTC 6.

This document aims to present the basics of the concepts that are subjected to standardisation in the fields related to hydrogen in energy systems. Therefore, this document consists of high-level terms and definitions, and guides the reader to more specific standards/documents, where more technical details can be found.

NOTE In particular, for [3.6](#), the following applies. Definitions in the existing scopes are mostly specific for the scope of the standard they are used in. Therefore, general definitions are drafted, complemented by more available and useful definitions from European and International standards (CEN, CENELEC, ISO, IEC) and exceptionally also by industry standards, such as ASME, where no European or International standards' definition is available.

Terms and definitions are categorized in the following structure:

- energy carriers,
- energy system, energy infrastructure, smart grid and energy systems integration,
- electric power network and electrical energy storage,
- hydrogen production from electricity and other methods for hydrogen production,
- hydrogen production equipment,
- transmission, distribution and storage in dedicated hydrogen infrastructure and gas network, as well as hydrogen admixture into natural gas and separation,
- hydrogen heat and power generation devices,
- power-to-hydrogen, hydrogen-to-X and energy storage,
- cross cutting items such as: hydrogen safety issues, metrology, quality of energy carriers, certification and materials compatibility.

Hydrogen in energy systems — Vocabulary

1 Scope

This document establishes the terms, definitions, symbols and abbreviations used in the fields related to hydrogen in energy systems.

This document is not applicable to the following fields:

- biological methanation,
- reactors for hydrogen production from other sources,
- road, maritime and aviation transport,
- aeronautics and space.

Note These fields are foreseen to be covered in future editions of this document.

This document does not apply to carbon capture, storage and utilisation, as well as services.

2 Normative references

There are no normative references in this document.

koniec náhľadu – text ďalej pokračuje v platenej verzii STN