

New definitions for five terms used in the industry

Cooling, refrigeration, chilling, freezing, cold chain

The International Institute of Refrigeration (IIR) and the American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE) have developed common definitions for these five terms. IIR has endorsed them in February 2019, and its dissemination should lead to a universal adoption. In Europe, the new definitions should affect policy documents.

The five new definitions

Cooling

1. Removal of heat, usually resulting in a lower temperature and/or phase change
2. Lowering temperature

Refrigeration

1. Cooling of a space, substance or system to lower and/or maintain its temperature below the ambient one (removed heat is rejected at a higher temperature)
2. Artificial cooling

Chilling

- Cooling of a substance without freezing it

Freezing

- Solidification phase change of a liquid or the liquid content of a substance, usually due to cooling

Cold Chain

- Series of actions and equipment applied to maintain a product within a specified low-temperature range from harvest/production to consumption

Application

Due to the endorsement of these definitions by IIR, it is expected that the scientific world will rapidly make use of them. The new definitions will affect existing scientific publications as well as policy documents in many regions of the world. The next IIR Conference, which takes place every 4 years, and will take place in August 2019 in Montreal, will see the initial application of these definitions:

<https://icr2019.org/>.

It is difficult to judge the speed with which the new definitions will have an impact. Within Europe, it can be expected that the new definitions will be introduced when legislation is reviewed. For example, Ecodesign, Energy Labelling and F-Gas Regulations, documents relating to the EU heating and cooling strategy, and possibly statistics.

In a similar manner, the new definitions will help to clarify some the requirements of the Paris Climate Agreement and the Kigali amendments.

Recommended Actions

The members are recommended to take note of these new definitions.

Related documents and links

All related documents and articles can be found in the respective sections in the right sidebar.

- IIR Website: www.iifiir.org/
- Euractiv article 2019-03-27: <https://www.euractiv.com/section/energy/opinion/some-order-in-the-multiple-definitions-of-refrigeration/>
- 2015 IIR note on refrigeration in the economy:
http://www.iifiir.org/userfiles/file/publications/notes/NoteTech_29_EN.pdf
- 25th IIR conference 24-30 August, Montreal: <https://icr2019.org/>