Ministry of the Interior and Kingdom Relations

Requirements for waste heat and renewable heat delivered by district heating in the Netherlands

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Requirements nearly zero energy buildings (NZEB)

EPBD 2010:

- 31 December 2020: all new buildings are nearly zero energy buildings
- 31 December 2018: buildings occupied and owned by public authorities

- Nearly zero energy building:
  - building that has a very high energy performance, based on cost optimality study
  - The energy required should be covered to a very significant extent by energy from renewable sources
  - including energy from renewable sources produced on-site or nearby

Requirements nearly zero energy buildings (NZEB)

RED 2018 art. 15:

- MS should set minimum requirements for renewable energy for new buildings (and buildings that undergo major renovation)

- Can be fulfilled through efficient district heating and cooling using a significant share of renewable energy and waste heat and cold.

Requirements nearly zero energy buildings (NZEB)

- Dimensionless requirement replaced by three new NZEB requirements:
  1. Energy demand (kWh/m2 per year)
  2. Primary fossil energy use (kWh/m2 per year) → indicator for EPC
  3. Renewable energy (%)

- Requirement ‘energy demand’ depends on the ratio between energy loss surface (Als) and energy use surface (Ag)

- Waste heat/cold and renewable heat from district heating can be used to fulfill requirements on ‘primary fossil energy use’ and ‘renewable energy’

New energy performance calculation method

- Why?
  - Different calculation methods
  - High level of complexity
  - Not only based on physics (policy factors)
  - New CEN EPB standards
  - Dimensionless indicators instead of kWh per m2 per year (EPBD 2018)

New energy performance calculation method

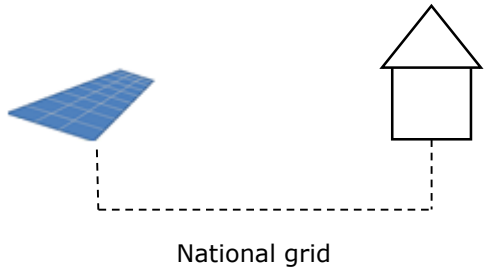
- New calculation method (NTA 8800)
  - 1 calculation method for all buildings
  - CEN standards, unless...
  - New indicators for NZEB requirements (kWh/m2 per year and %)
  - Policy factors were reconsidered and transferred to legislation

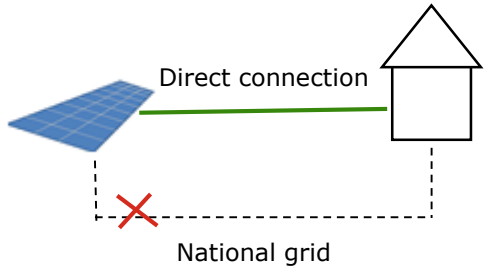
NTA 8800 can be downloaded for free via:
https://www.nen.nl/NEN-Shop/Norm/NTA-8800201906-nl.htm

New energy performance calculation method

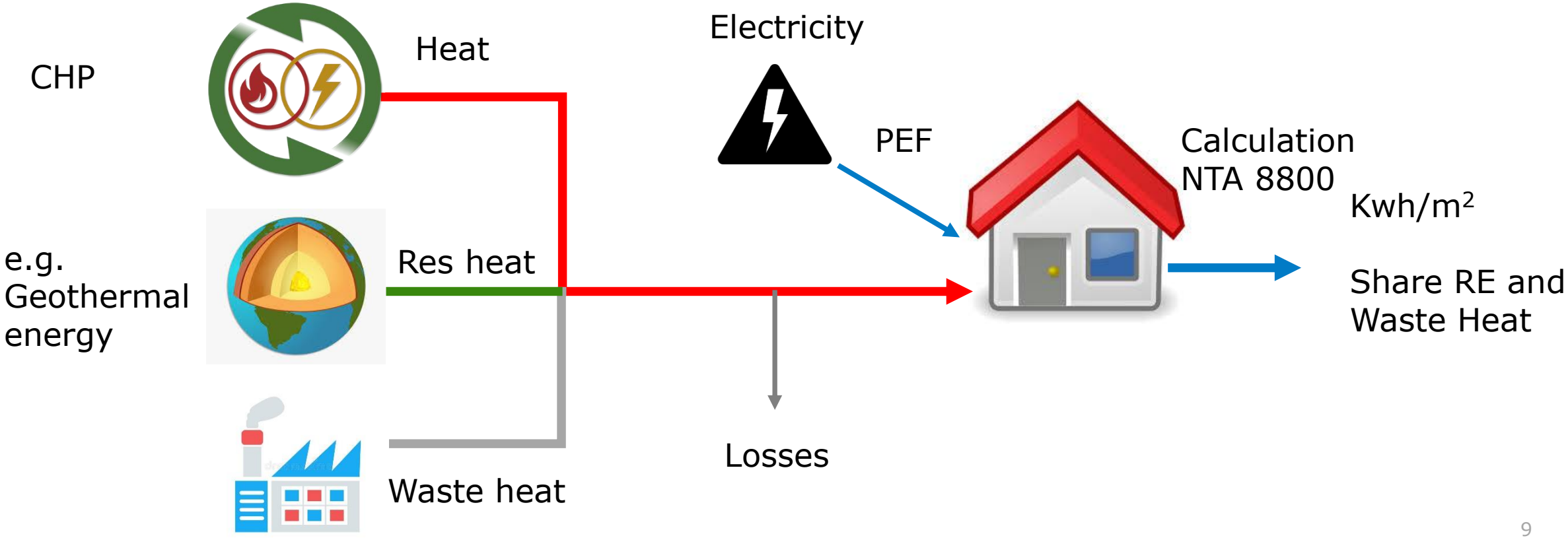
- Policy factors:
  - Can renewable energy of waste heat or cold produced off-site/nearby be allocated to the energy performance of a building?
- Old rules:
  - Energy production off-site
  - Within distance of 15 km from the building
  - Contract between producer and building owner
- New rules:
  - Energy production off-site
  - With a direct physical connection to the building

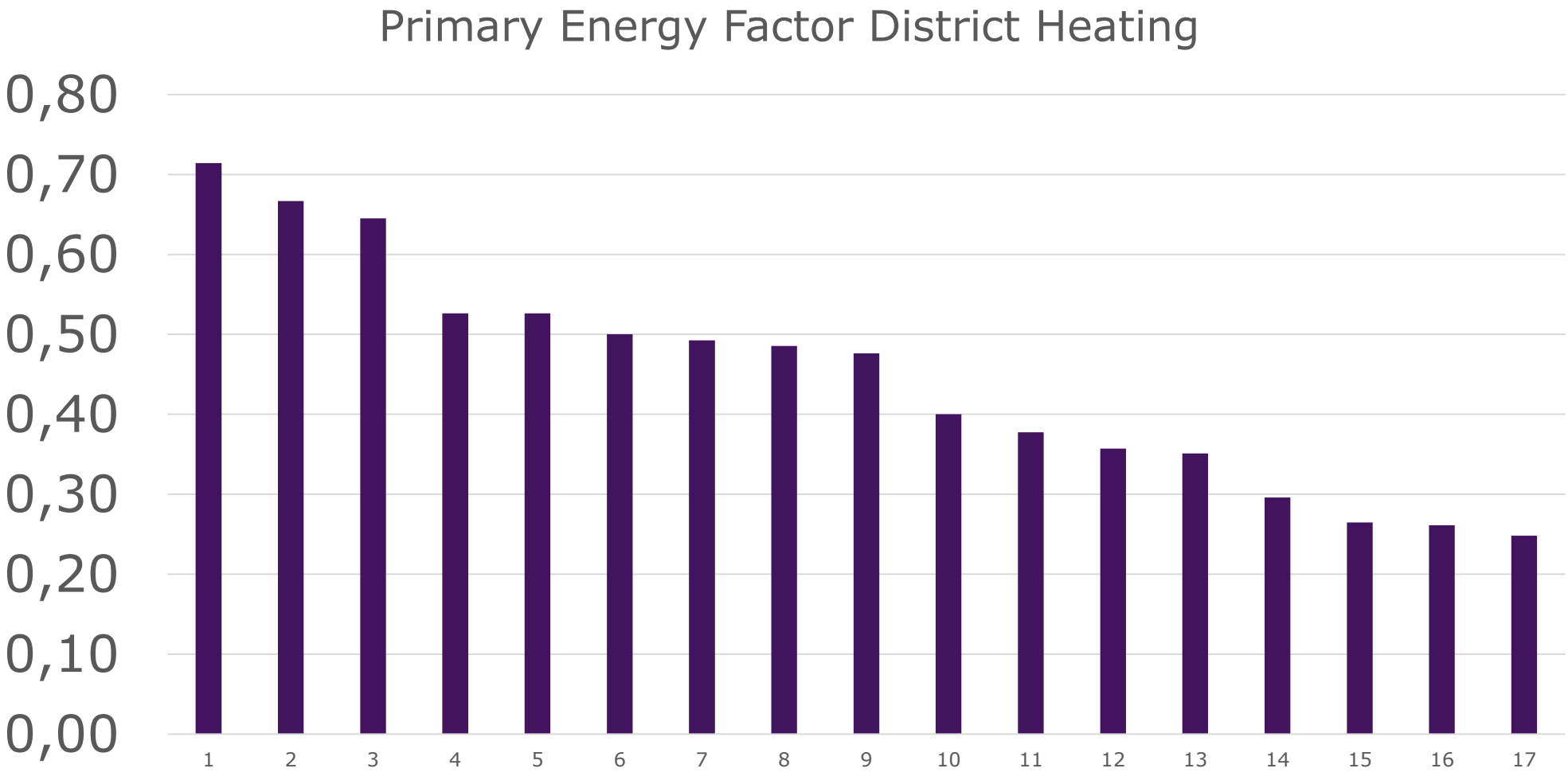
  (f.e. district system)
  - Contract between producer and building owner





Calculating the contribution of district heating




Primary Energy Factor District Heating
0,80
0,70
0,60
0,50
0,40
0,30
0,20
0,10
0,00
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17

Definition waste heat or cold

- Following RED
- Unavoidable heat or cold as by-product of an industrial installation
- Heat or cold would be lost without connection to district heating
- No heat from CHP
- Should be delivered through district heating

Securing the calculation

- District heating companies have to get a quality certificate
- Certificates are checked by an independent bureau: https://www.bcrg.nl/
- District heating companies have to report on their sustainability www.rvo.nl/warmtewet
- The city checks as part of the building permit

Summary

- New calculation for building performance implements EPBD and RED
- Res heat in district heating is included
- Waste heat can be included

Questions?

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