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Principle of equivalence, NL

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TNO | Knowledge for business

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Energy Performance Calculation

- Calculation needed for Building Permit

- Monthly method
- Fixed formula's
- Updated every 3 – 5 years
- Many components and systems rewarded

- But
  - Extra energy efficiency of some new and innovative products not yet rewarded

Example

- Domestic hot water
- Rewarded:
  - Various generation systems
  - Various types of solar collector
- Innovative system on market:
  - Heat recovery of hot shower water
  - Not rewarded in Standard itself

Principle of equivalence

- Separate prove: better performance
- Calculation/measurement study
- Performed by: anyone
- Paid by: industry
- Boundary conditions:
  - E.g. climate conditions, building use, …
  - Same as in Standard
- Approval:
  - Case to case
  - Local authority
- Standard update:
  - Proven innovative systems integrated

Concrete example

- *E.g. Company “Lydia”, product: “boiler Valery”*
- *Equivalence study: auxiliary energy use*
- *NL EP Standard: default auxiliary energy use*
- *“Valery”-study:*
    - *alternative formula,*
    - *taking into account measurement results*
    - *replacing default method in Standard*

Advantages

- Relative low costs
- Costs paid by the manufacturer (study = marketing for his product!)

  Equivalence study boiler “Valery”: ca. 10.000 euro.

- Quick procedure

  “Valery”-study: 2 months. Directly used for individual Building Permit requests.

- One equivalence study can be used for several buildings.

  “Valery”-study can be used for all buildings with a Valerie boiler. But: still small individual calculation is necessary!

Advantages

- Stimulation of innovations.

  Since 1st equivalence study for auxiliary energy use for heating the auxiliary energy of boilers in general decreased step by step by using innovative systems.

  In new EP-method (2011) description of measurement method and extra formula's to take this innovation into account are fixed as alternative route.

Disadvantages

- Varying quality of the equivalence studies
  "Valery" study performed by research company. But anybody could have done it.

- Local authority often lacks expertise to judge quality
  "Valery" study contains alternative formula's derived from measurements. Expert needed to judge
  - *if correct boundary conditions are used*
  - *If measurements are performed correctly*
  - *if measurement results are interpreted correctly*
  - *etc*

- Idem for decision makers who choose energy saving measures
  - *Is "Valery" boiler really an innovation or not?*

Disadvantages

- Approval: case to case basis

  Valerie boiler e.g. approved in Amsterdam and disapproved in The Hague or vice versa.

- Equivalence studies → popular →
  many innovative products introduced →
  many building permits contain equivalence study