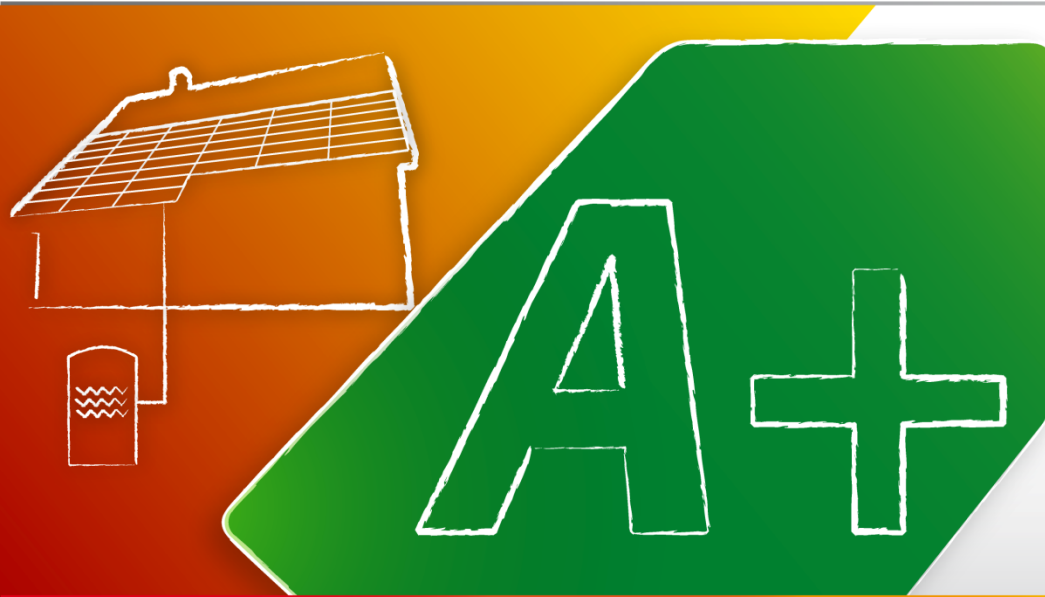




This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 649905



General knowledge on  
the Energy labelling

„LabelPackA+“

Place, Date

## Background of ErP-Directive on Eco Design and Energy Labelling

### **EU – Climate protection goals**

#### **Goals for 2020 (approved in 2007):**

- 20% CO<sub>2</sub>-Reduction
- 20% Renewable Energies
- 20% less energy use

#### **Goals for 2030 (approved 2014):**

- 40% CO<sub>2</sub>-Reduction
- 27% Renewable Energies
- 27% less energy use

### **Instruments of the EU**

- Directive on energy efficiency (2012)
- European Parliament Building Directive (EPBD) (2010)
- Directive on the use of Renewable Energies (2009)
- **Eco Design Directive (ErP) (2009)**
- **Energy Labelling Directive (2010)**
- EU-Energy and Climate Policy

# Basics

## **Eco Design (Directive 2009/125/EC)**

**Eco Design regulates the market by defining product design**

- Establishment of minimal criteria for products (energy efficiency and environmental aspects)
- Harmonization in the EU to reduce free trade barriers

**EU-Directives include regulations on Eco Design and Labelling and have been transferred into national directives (so called delegated directives)**

**In the different EU countries, only the national translation is legally binding.**

## **Energy Labelling (Directive 2010/30/EU)**

- **Energy Labelling displays the product's energy efficiency**, aiming to support the consumer's purchase decision into more energy efficient products and prompt manufacturers to produce more efficient products
- The best possible technology is to be supported

# Basics

## Energy Labelling

- The energy efficiency class runs from G to A (or up to A++), G being the lowest class, identifying products which consume more energy, and A the highest class, identifying the most energy efficient products
- The energy class relates to the use of energy during the product's operation, not considering the manufacture or end-of-life stages



## Content of the Labelling Regulation

- Offers that address the end consumer have to provide information on energy efficiency of the products (data sheet and energy efficiency label).
- This serves to guarantee the consideration of energy efficiency criteria for the buyer decision.
- Responsibility at the Point of Sale, which can be the installer, dealer or wholesaler, depending on who is in contact with the client.
- Manufacturers have to comply with information obligations, providing at least data sheets.
- To cover the variety and complexity of heating systems, many different labels have been developed.

## Relevant Product Groups

### **Which product groups have relevance for Eco Design and Labelling?**

- Energy related Products (e.g. household devices) and products that do not use energy, but influence energy consumption
- Europe wide market volume of at least 200.000 pieces / year (in product groups).
- Products with high relevance for the environment and high energy saving potential.
- Products with high potential for improvements for the environment

### **Product groups with relevance for the heat market:**

- **Lot 1 Space heaters (EU-Directive 2013/813/EU, EU-Directive 2013/811/EU)**
- **Lot 2 Water heaters (EU-Directive 2013/814/EU, EU-Directive 2013/812/EU)**
- Lot 10 Residential Air conditioning
- Lot 11 E-Motors, Pumps, Ventilators
- Lot 15 Solid Fuel Boilers
- Lot 20 Local Room Heaters

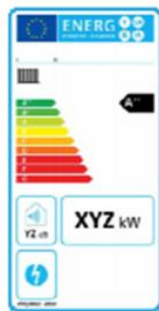
See also: <http://www.eceee.org/ecodesign/products>

## Relevant Product Groups

- Lot 1 Space heaters**



boilers  
Gas, oil, Electric



CHP  
Gas, Oil



Heat Pumps  
Gas, Electric



LT Heat Pumps  
Gas, Electric



Combi boiler  
Gas, Oil

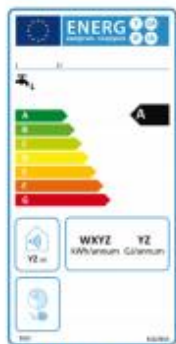


Combi- HP  
Gas, Electric



## Relevant Product Groups

- Lot 2 Water heaters**



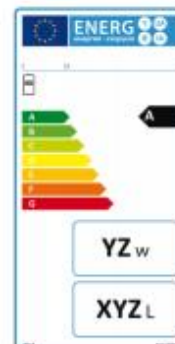
Water heaters  
Gas, Oil, Electric



Solar-  
Water heaters



DHW Heat Pumps



DHW cylinders  
buffer tanks





## Relevant Product Groups in the Heating Market

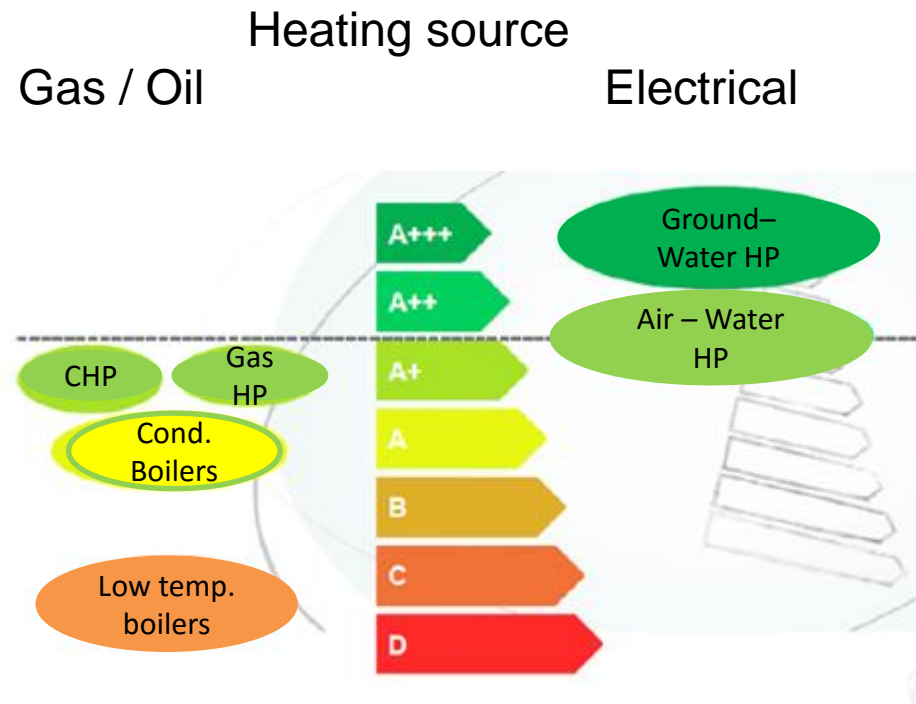
	Eco Design	Energy Labelling
Space heaters	0-400 kW	0-70 kW
Heat pumps	0-400 kW	0-70 kW
Low-temp. Heat pumps	0-400 kW	0-70 kW
Comb. Heat Power	0-400 kW ≤ 50 kWel	0-70 kW ≤ 50 kWel
Water heaters or combi. Systems	0-400 kW	0-70 kW
Hot water storage tank	≤ 2000 litres	≤ 500 litres
Packages of these products with control technology or solar thermal		0-70 kW Storage ≤ 500 litres*

Exemptions: Solid fuels, Bio mass / Steam and air driven heating systems / Existing heating systems

\*storage tanks ≤ 2000 l have to be provided with a data sheet

## Labelling categories

Class	Seasonal related heating efficiency %
A+++	>150
A++	125- <150
A+	98- <125
A	90- <98
B	82- <90
C	75- <82
D	36- <75
E	34- <36
F	30- <34
G	<30



## What's new in the Labelling of Heating Appliances?

It's the first energy labelling regulation addressing **Package systems**

**Package systems are systems constituted by conventional heaters combined with solar devices and/or temperature controls.**

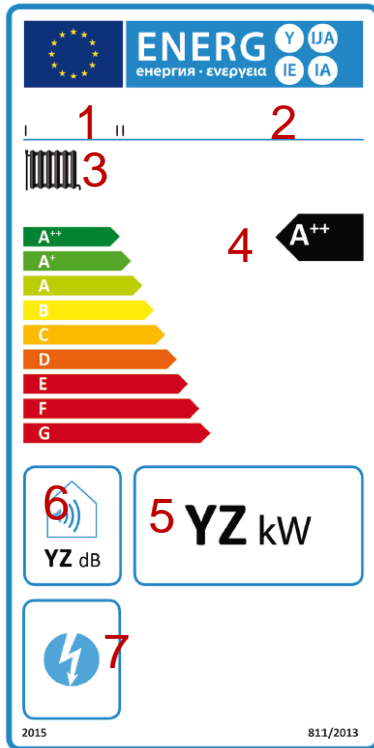
- **Standard package** – a package of products, pre-assembled by the supplier as a standard solution, constituted by a set of products supplied by the same manufacturer.
- **Custom-made package** – a package of products (not necessarily from the same brand) assembled by the dealer (installer, seller) at the moment of sale to meet the demand of one precise client.

## What's new in the Labelling of Heating Appliances?

In the case of acquiring a package system, the end-consumer should receive, additionally to the individual product energy labels, an energy label stating the energy class of the whole system, considering the assembly of products.

The legislation also applied to internet purchases, where the electronic energy label and fiche should be available for consultancy.

# Product label (e.g. Comb. HP) **LabelPack A+** until 2017



## Information on the label

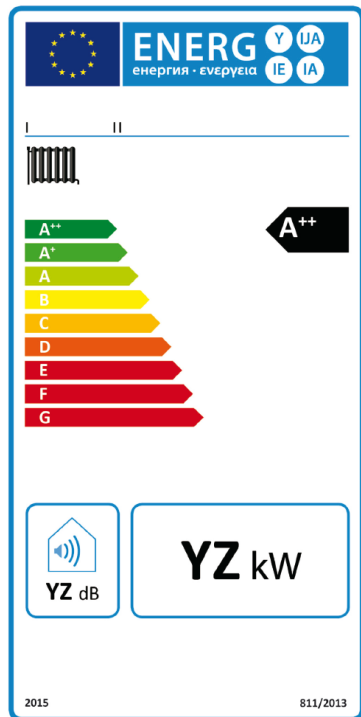
1. Manufacturer
2. Number of model
3. Function (heat / hot water)
4. Efficiency class
5. Heating capacity (kW)
6. Noise emissions (db)
7. Additional production of electricity
8. Further examples for additional information (no. 5-7)

The Product label is provided by manufacturer!

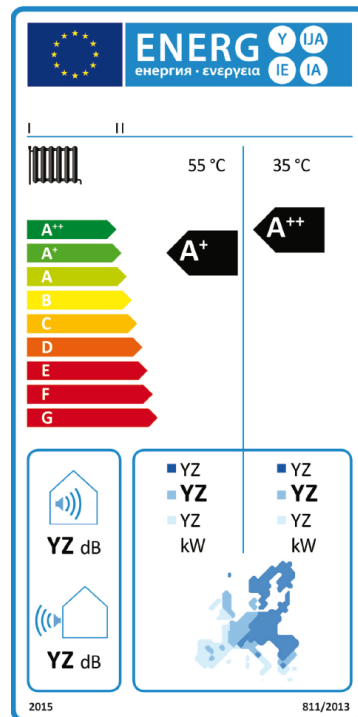


# Product labels – Space heaters : A<sup>++</sup> to G (until 2017)

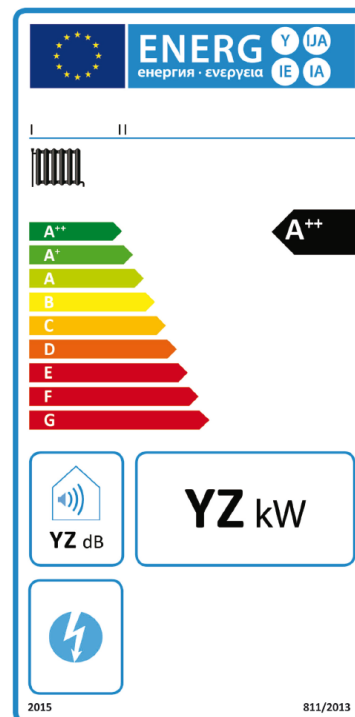
Boiler



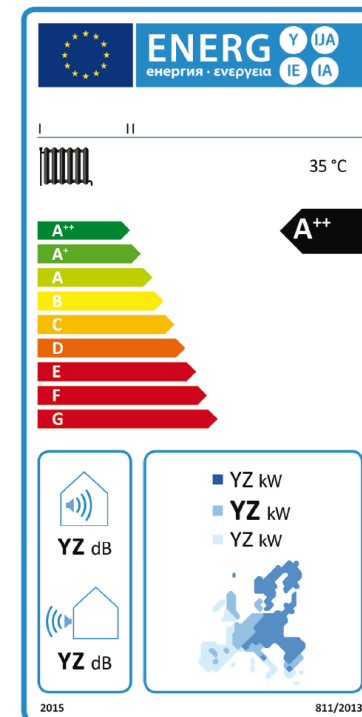
Heat pump



Comb. Heat and power



Low temperature heat pump

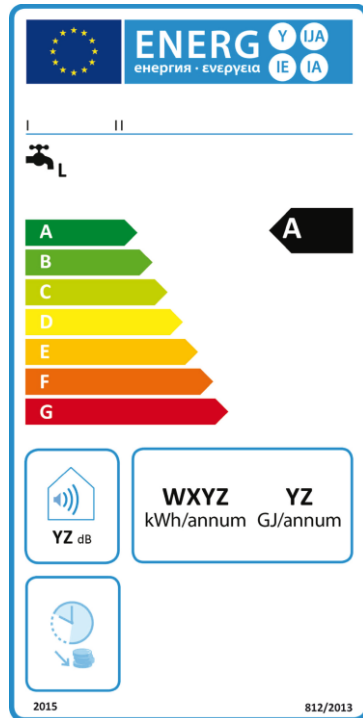


For non solar systems usually  
combi systems for heating and hot  
water production are common

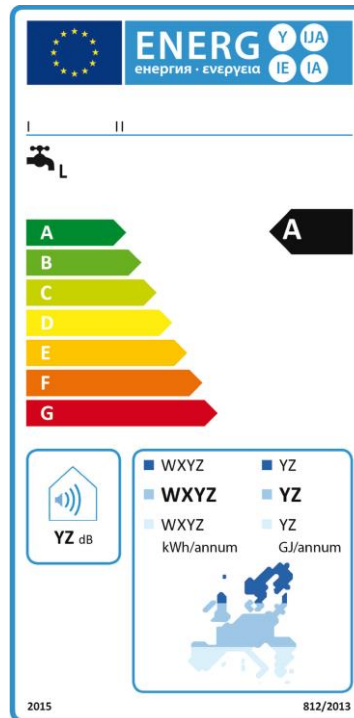
No hot water production  
foreseen / possible

# Product labels – Hot water heaters : A to G (until 2017)

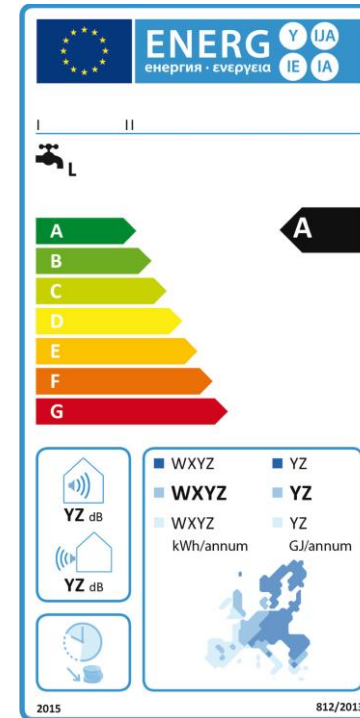
Conventional e.g. gas flow type heater or boiler and storage tank



Solar driven e.g. Thermo siphon+ electrical heater



With heat pump

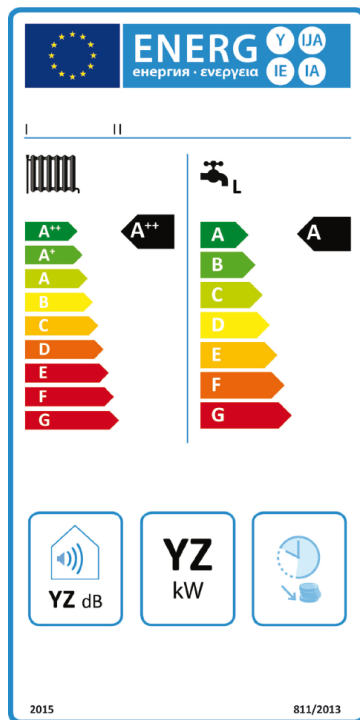


Stand alone systems, which do not serve space heating

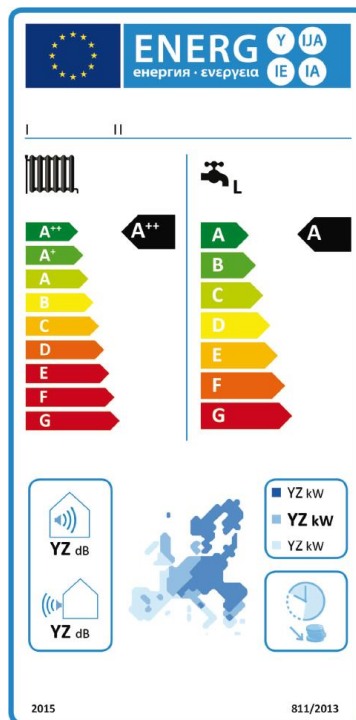
Hot water heater with electrical back up is also labelled

Product labels for combi systems: A<sup>++</sup> to G (until 2017)

Boiler



Heat pump

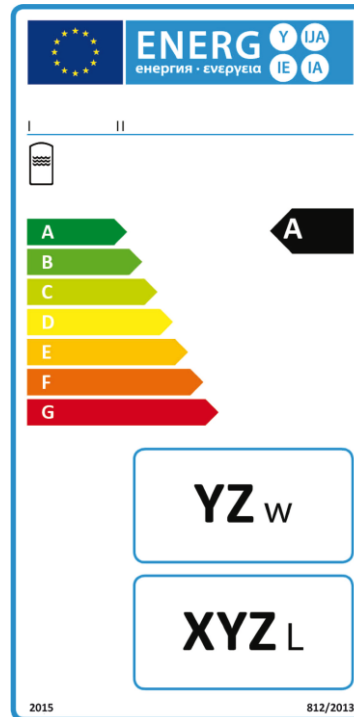


Not only combined systems (flow type heater with boiler) but also boiler / heat pump in combination with non solar storage tank needs combi label



# Product label storage tank A to G (until 2017)

Hot water storage tank



**Information:**  
*Currently most  
storage tanks are  
rated either „C“  
seldom „B“*

Only label necessary for pure solar package without boiler or heat pump (e.g. retrofit with solar)

# Duties of manufacturers / dealers / installers

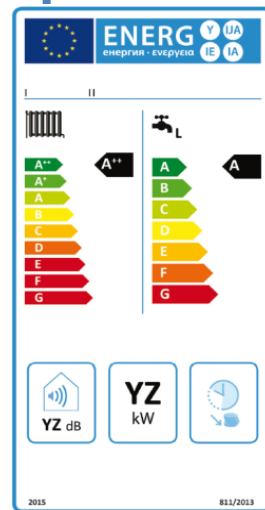
## – Product label

### Duties of the manufacturer / provider:

- Provision of label according to EU regulation
- Provision of a product data sheet as basis for package labels
- Provide technical documentation upon request
- Include information on label classes in advertisement and sales material

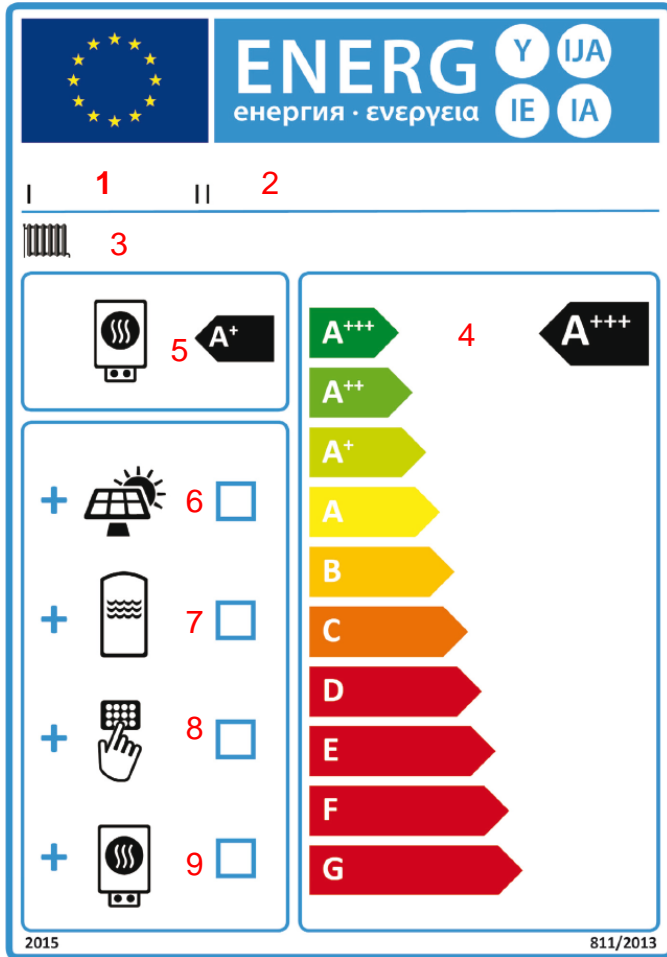
### Duties of the dealer:

- Guarantee visibility of the label at the point of sale
- Advertisements with information on the price has to provide information on the label class
- Technical sales material has to provide information on the class



# The package label

## How is it composed



**Example: Only  
heating system**

### Information on the label

1. Manufacturer
2. Number of model
3. Function (heat (/ hot water))
4. Efficiency class (for entire combination)
5. Efficiency primary boiler
6. Solar energy system
7. Storage tank
8. Temperature control
9. Additional heating system

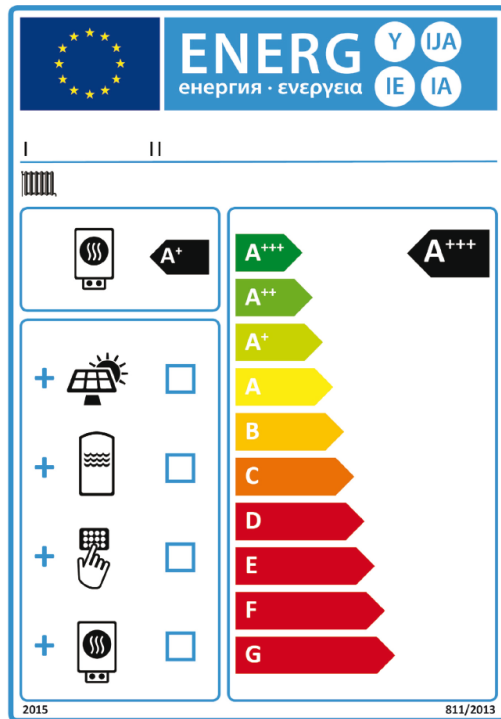
The package label is provided by the dealer or installer

# Package label – Overview: A+++ to G

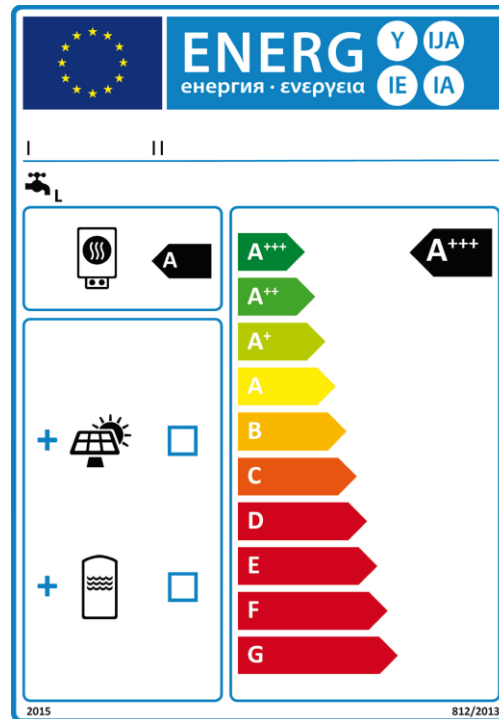
Space heater, Temperature control  
and solar installation

Hot water and  
solar installation e.g. flow type  
Boiler + solar system

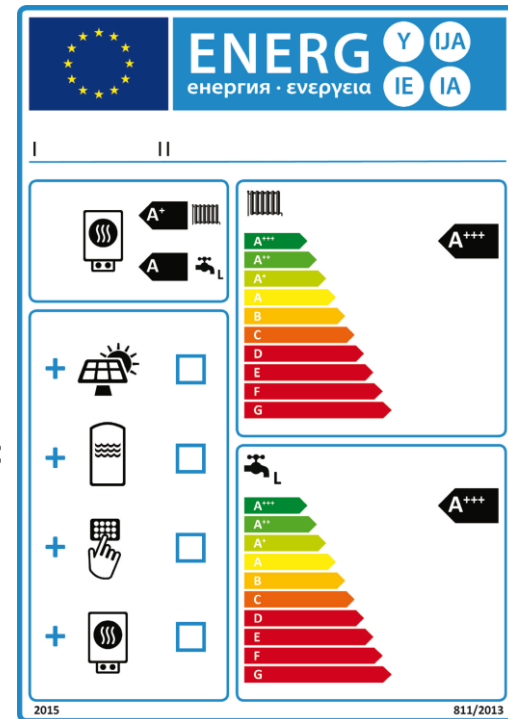
Combi heating system, temperature  
controller and solar installations



**Only heating  
system**



**Only hot water**

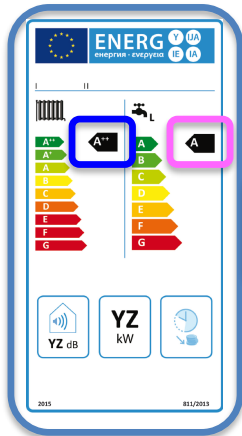


**DHW + Space  
heating combined**

# How to design a package label

Combi heating system with boiler

Combi heating systems, temperature- controller  
and solar system



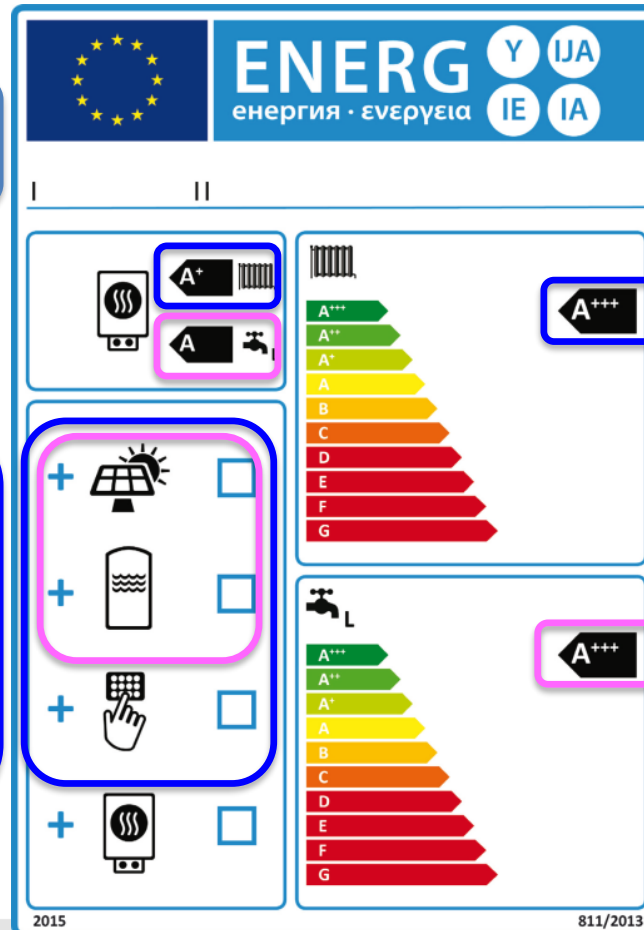
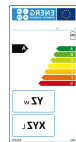
**Product data sheet**

Combi heater



**Product data sheet**

- Solar collector
- Storage (Label)
- Temperature controller



**A+++** Combi-Label Heating sys.

**A+++** Combi-Label Hot water

# Duties of manufacturers / dealers / installers

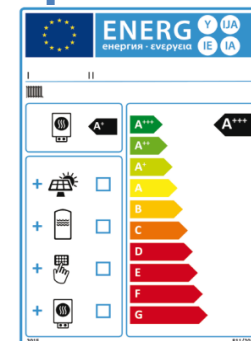
- **Pre-assembled** package label

## Duties of the manufacturer / provider:

- Provision of label according to EU regulation
- Provision of a product data sheet as basis for package labels
- Provide technical documentation upon request
- Include information on label classes in advertisement and sales material

## Duties of the dealer:

- Guarantee visibility of the label at the point of sale
- Advertisements with information on the price has to provide information on the label class
- Technical sales material has to provide information on the class



# Duties of manufacturers / dealers / installers

- **Pre-assembled** package label



# Duties of manufacturers / dealers / installers

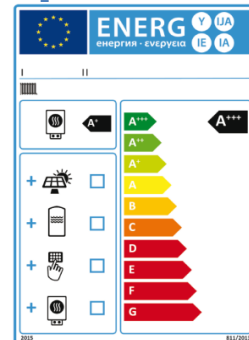
- **Pre-assembled** package label

## Duties of the manufacturer / provider:

- Manufacturer offering a pre-assembled package solution for space and/or water heating have to edit and provide the package label
- Product labels and data sheets and information from the products used in the package have also to be provide

## Duties of the dealer:

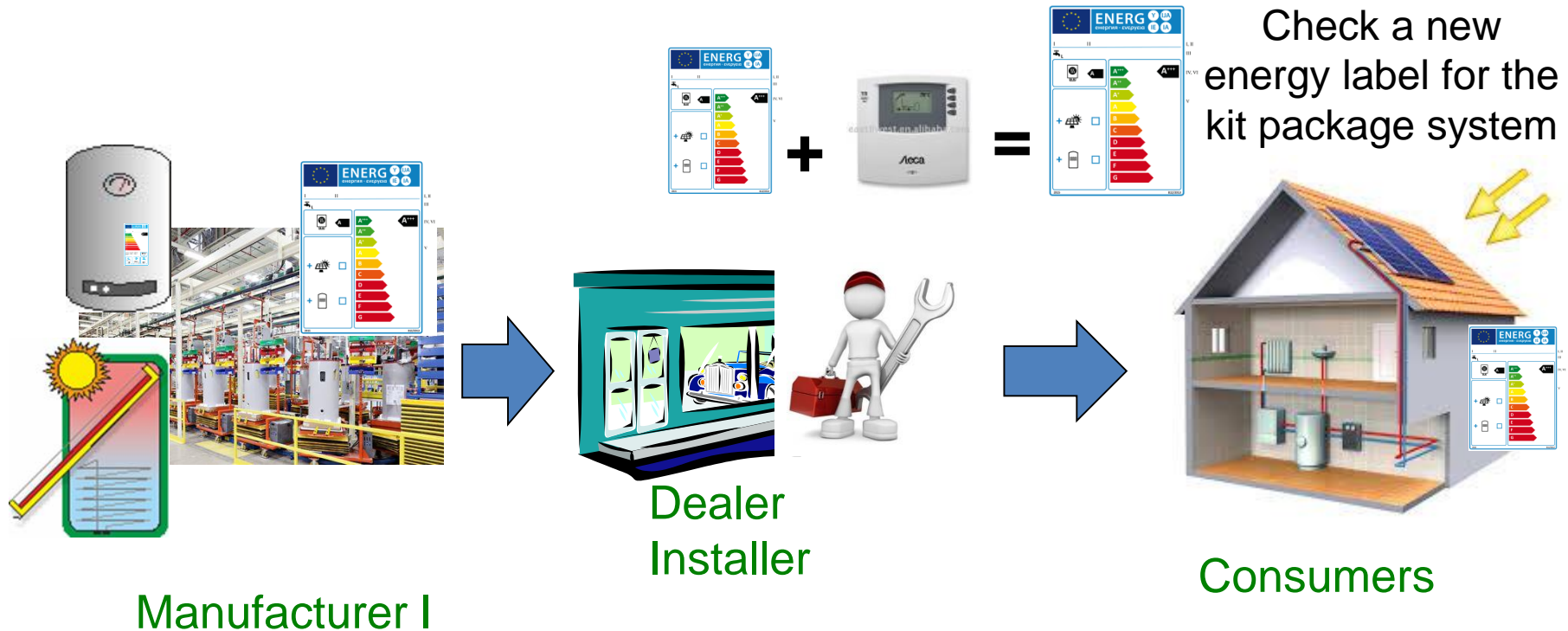
- Just have to provide label and information received from the manufacturer to the consumer





# Duties of manufacturers / dealers / installers

- **Pre-Assembled/custom made** Package label

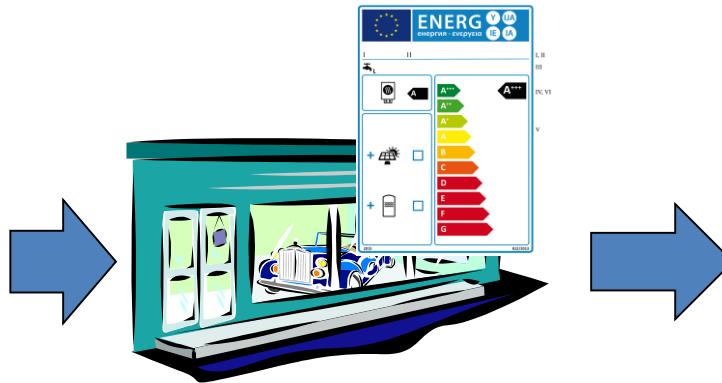


# Duties of manufacturers / dealers / installers

- Custom made Package label



Manufacturer I



Wholesaler



Consumers



Manufacturer II



Installer

# Duties of manufacturers / dealers / installers

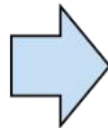
- Custom made Package label



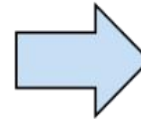
Supplier I



Supplier II



Installer  
integrator



Consumers

# Duties of manufacturers / dealers / installers

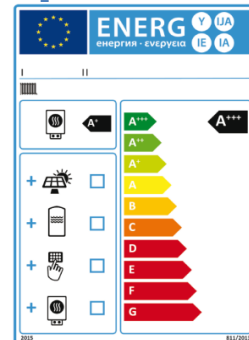
- **Custom made** Package label

## Duties of the manufacturer / provider:

- Provision of additional label according to EU regulation if package is offered, e.g. Temperature controller / solar system
- Provision of a product data sheet as basis for package labels

## Duties of the dealer:

- Dealers who compile the package themselves, have to fill in and calculate the package labels and provide this information for the customer.
- Advertisement have to include information on the efficiency class
- Technical sales material has to provide information on the class



## Timetable 2015 to 2017 for the Labelling



2015

- Energy Labeling Phase 1
- 26. Sept. 2015 Labels from A+++ to G
- Prohibition of introducing new heating systems to market worse than A

2017

- Energy Labeling Phase 2
- Integration of Biomass boilers
- Heightening of labeling requirements from A+++ to D

2018

- Review of the directives in 2018