

Electricity consumption of cold appliances, washing machines, dish washers, tumble driers and air conditioners. On-site monitoring campaign in 100 French households. Analysis of the evolution of the consumption over the last 20 years.

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ENERTECH**

Presented by Muriel Dupret & Therese Kreitz

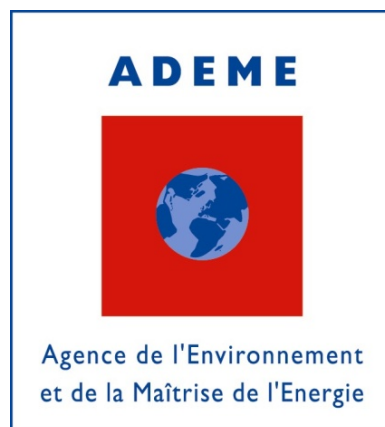
eceee Summer Study
29 May – 3 June 2017. Presqu'île de Giens, France

Purpose

- **Update of the French average consumptions of cold appliances, washing machines, dish washers, tumble driers and air conditioners**
- **Analysis of the evolution of the consumption over the last 20 years**

Funder

- **ADEME**



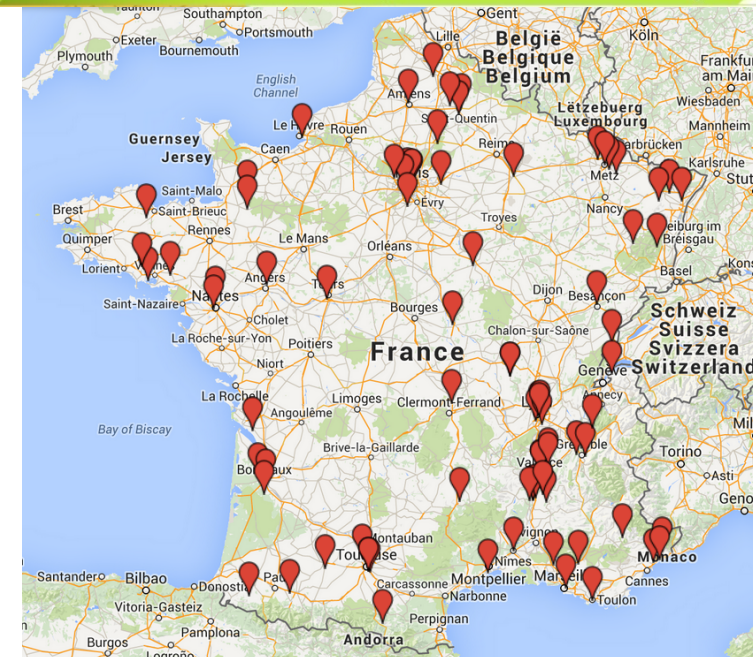
Method

Sample

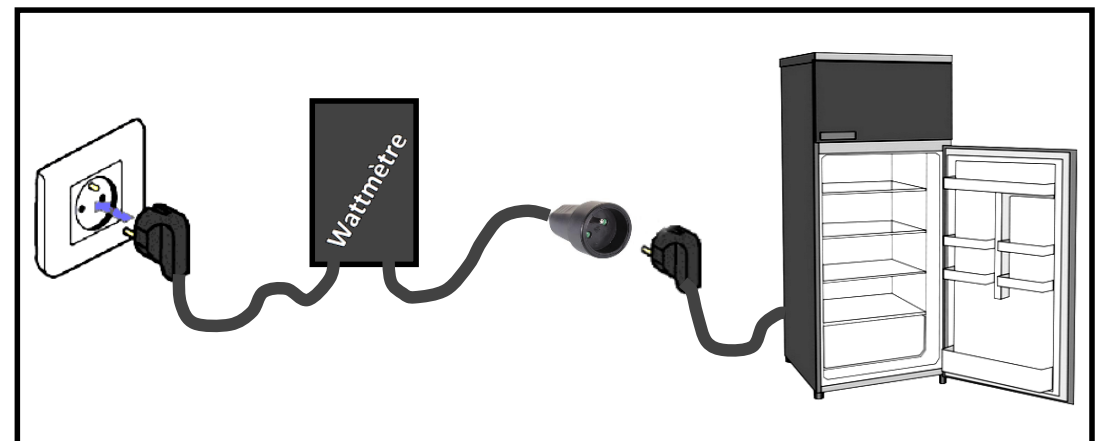
- 107 HH representative of the French residential sector
- Ownership rate of the sample very close from national values

Duration

- 1 year



Monitoring equipment

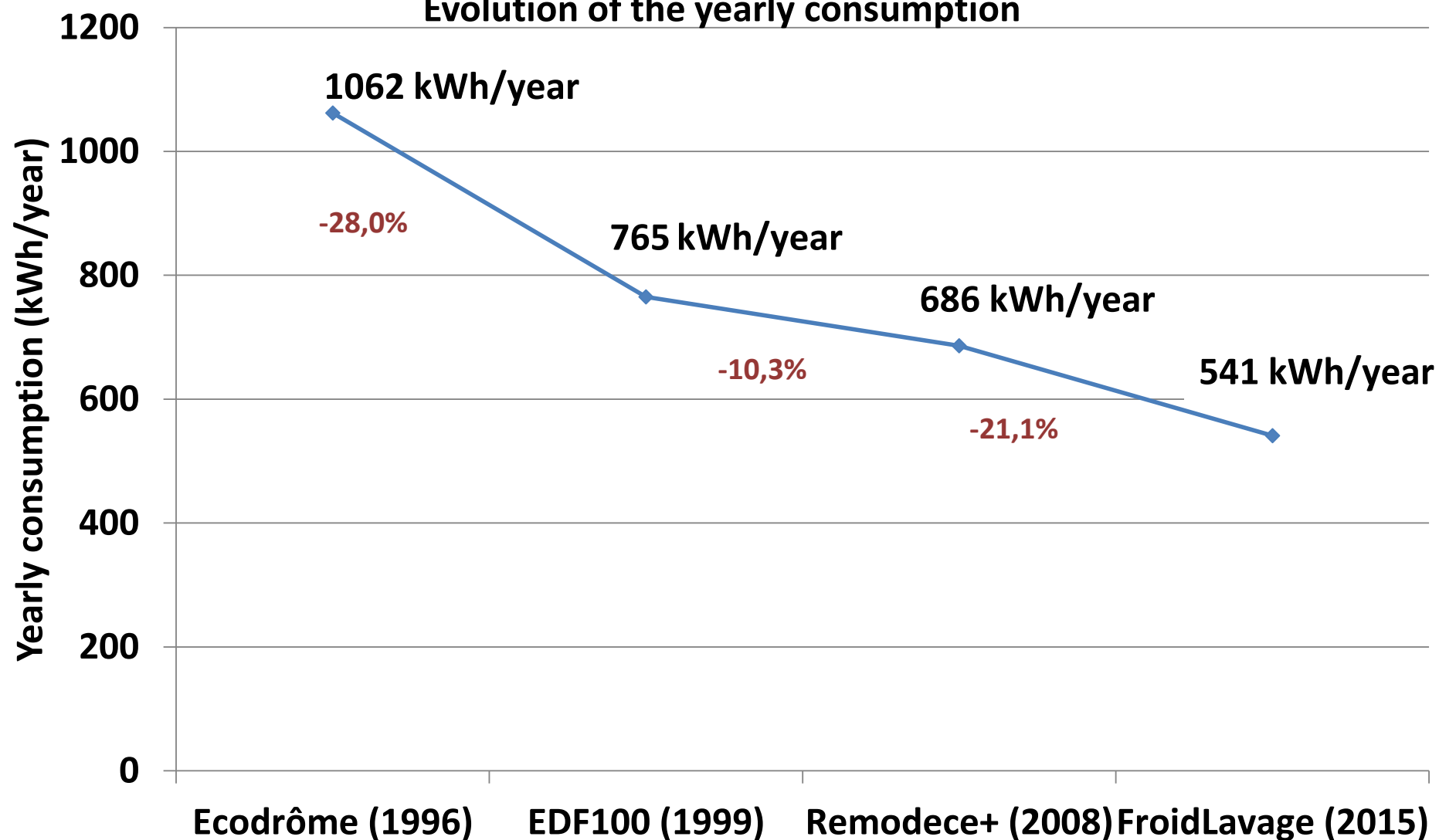


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Cold appliances of an average household

Evolution of the yearly consumption

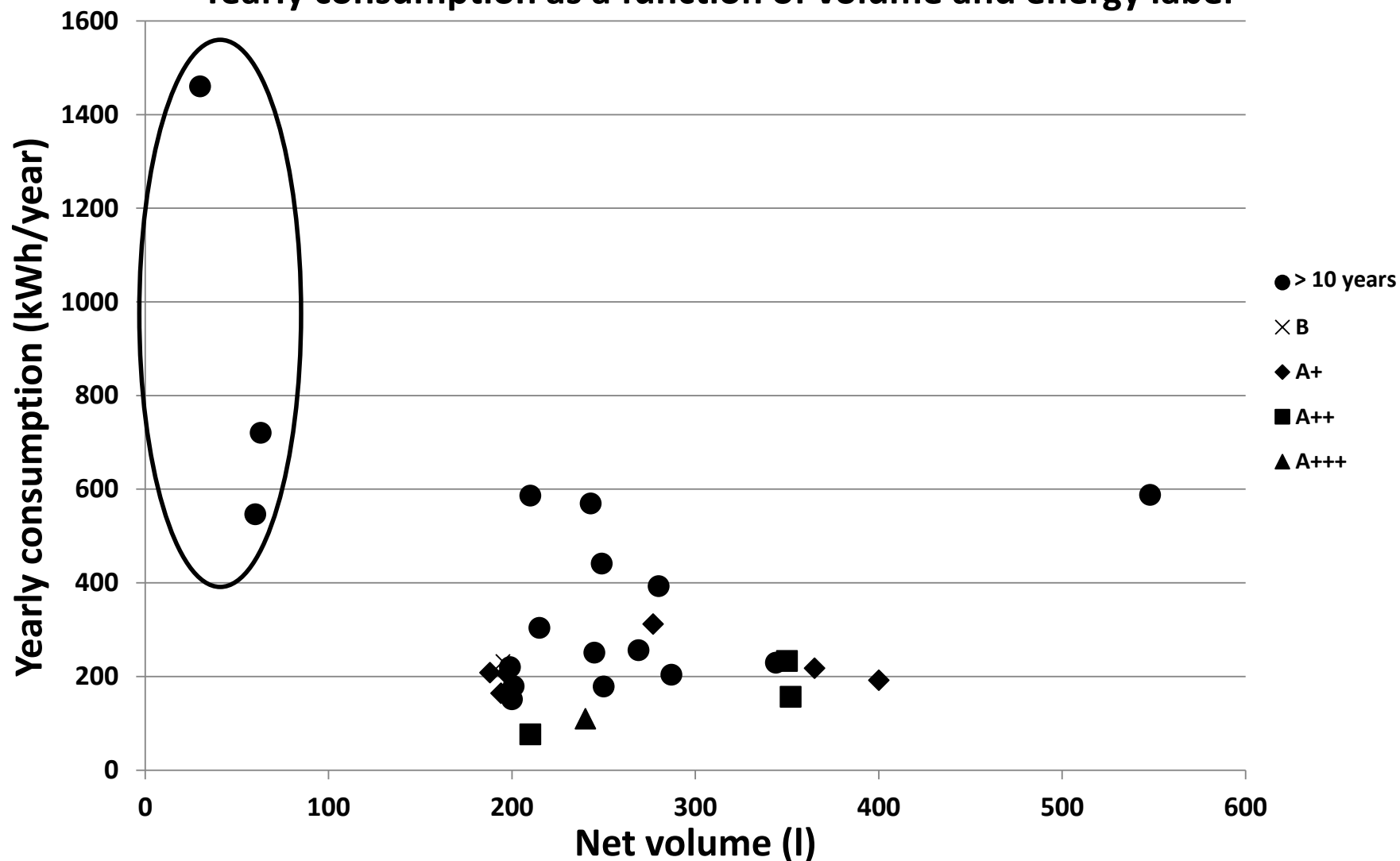


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FREEZER (unheated rooms)

Yearly consumption as a function of volume and energy label

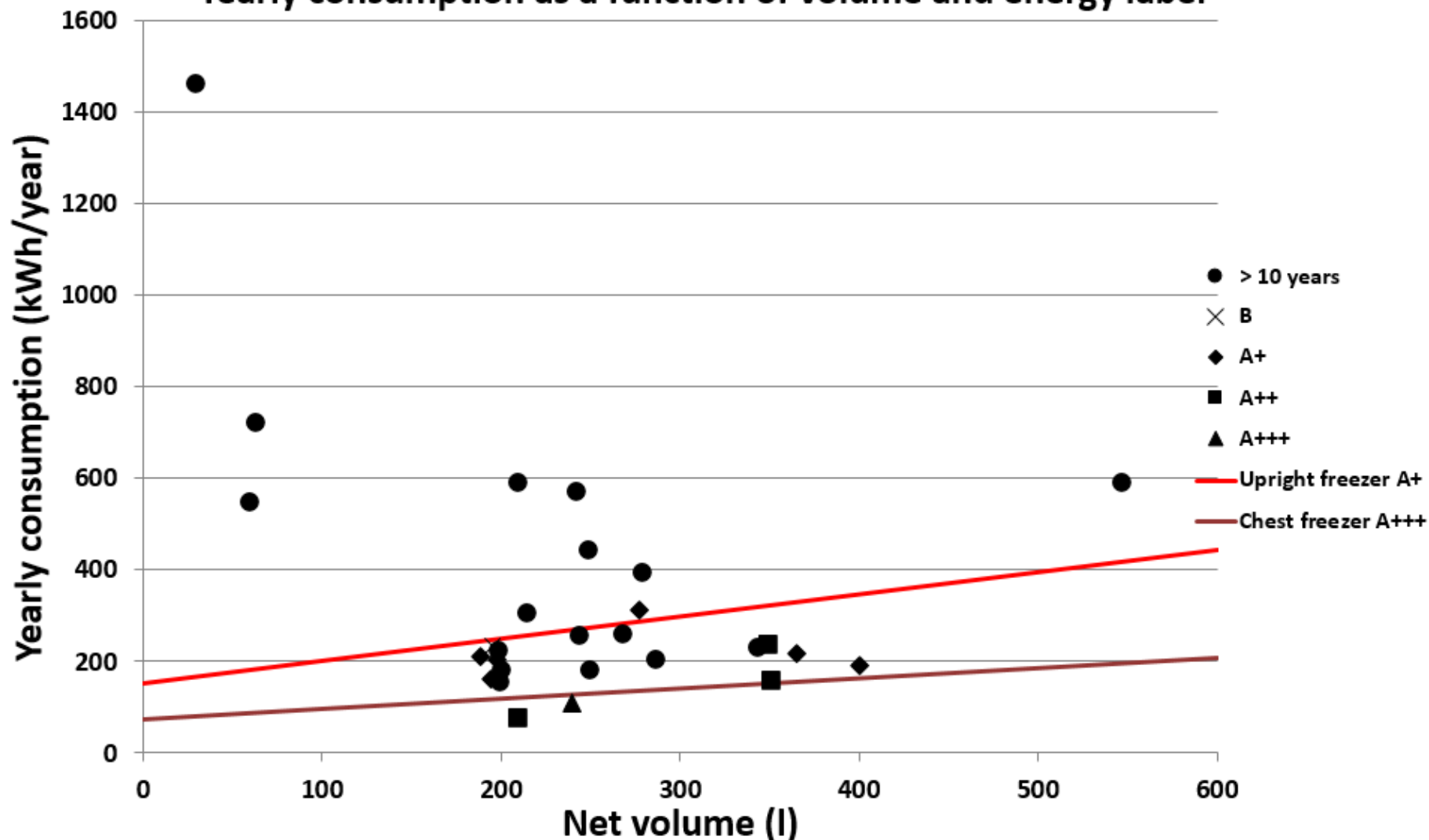


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FREEZER (unheated rooms)

Yearly consumption as a function of volume and energy label

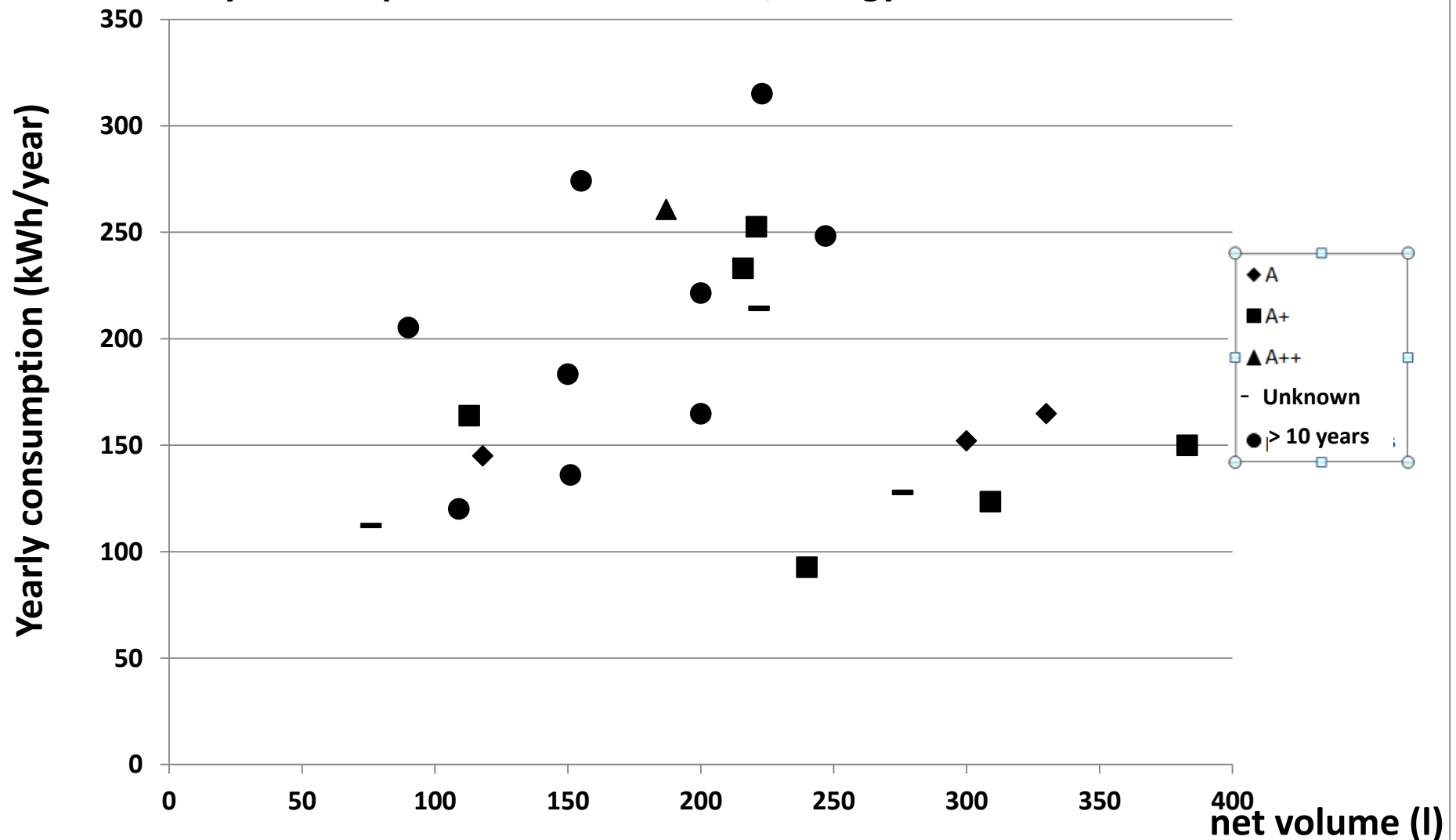


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FRIDGE (kitchen)

Yearly consumption as a funct. of vol., energy label and instal. mode

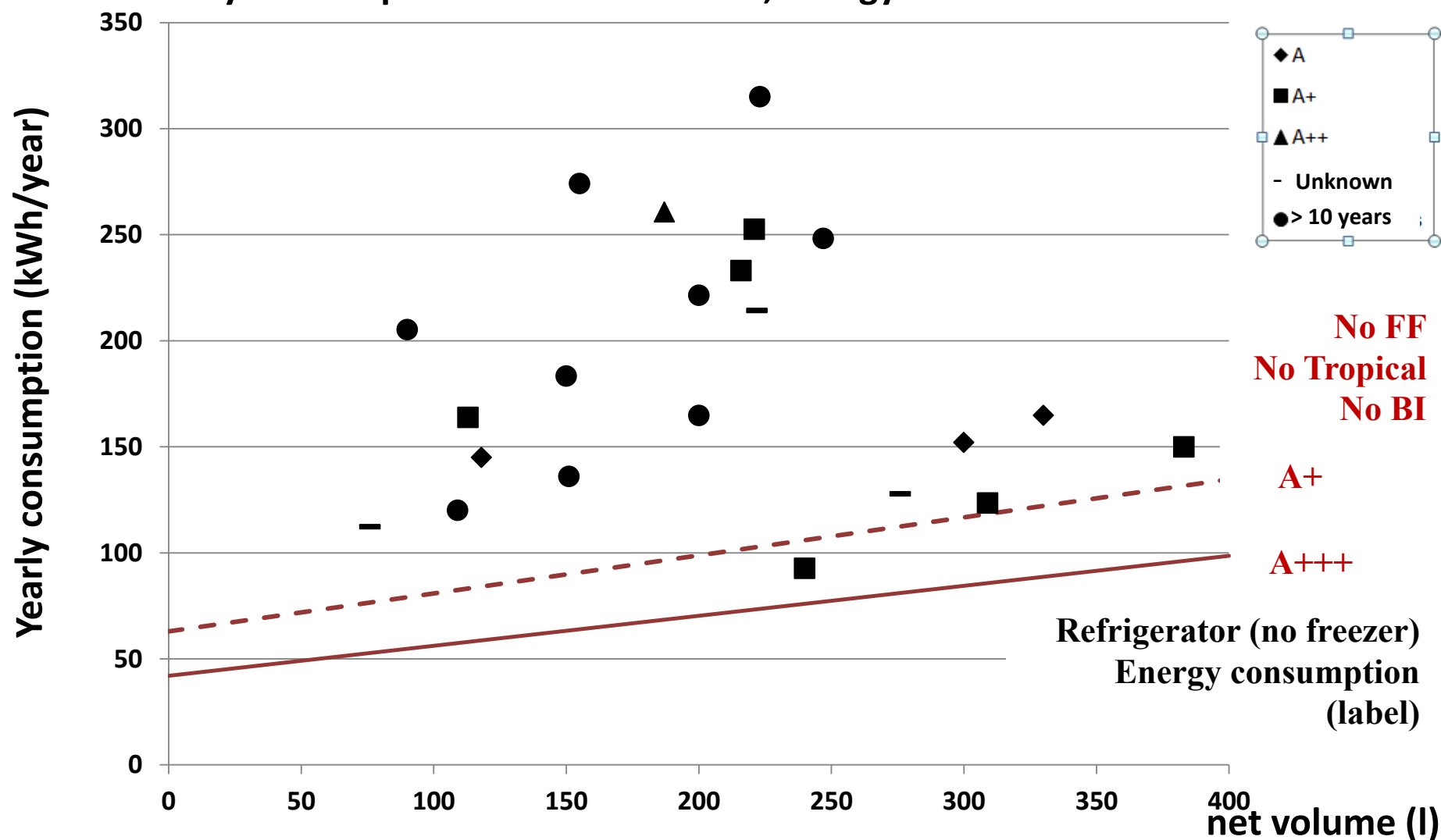


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FRIDGE (kitchen)

Yearly consumption as a funct. of vol., energy label and instal. mode

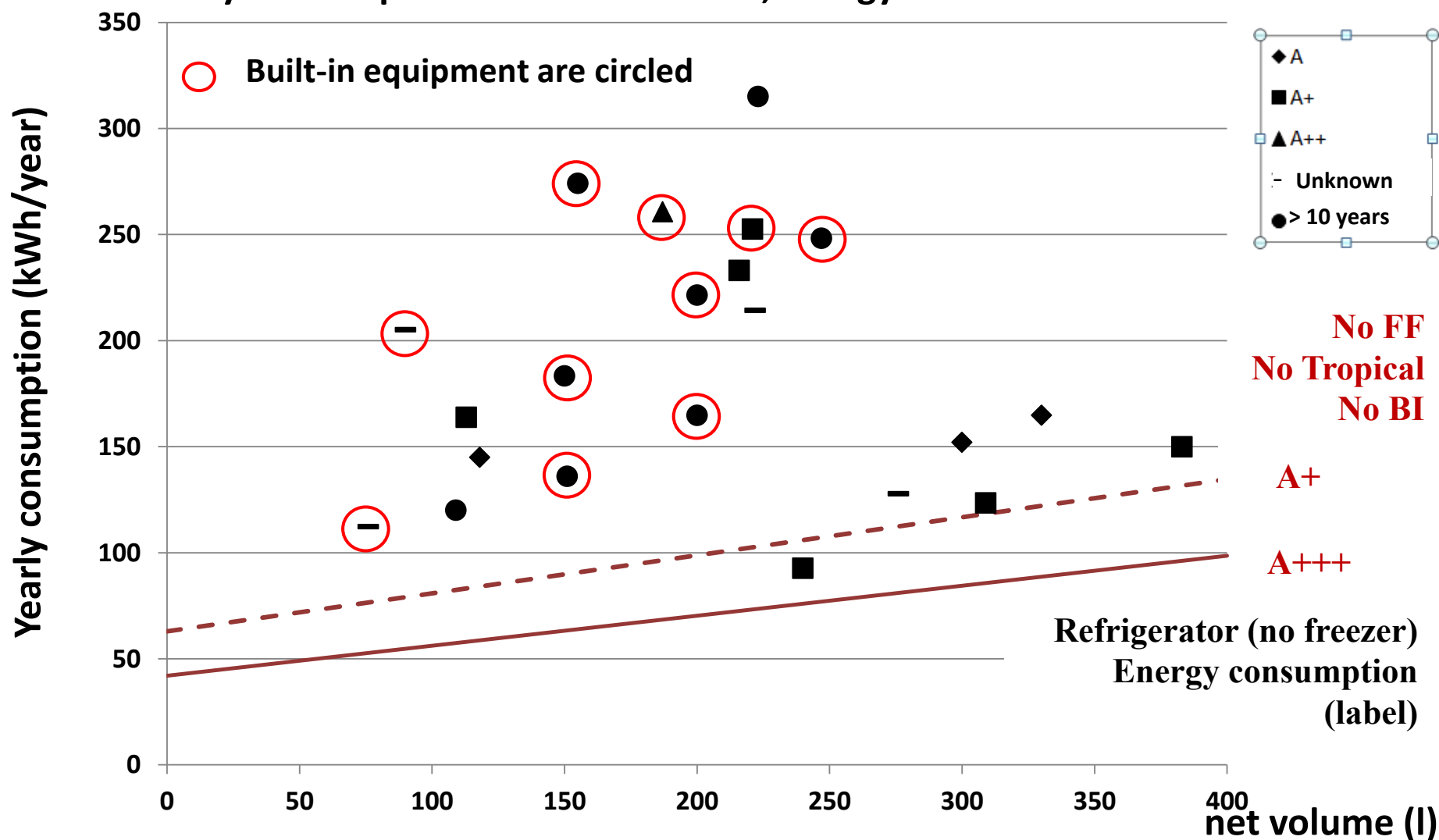


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FRIDGE (kitchen)

Yearly consumption as a funct. of vol., energy label and instal. mode

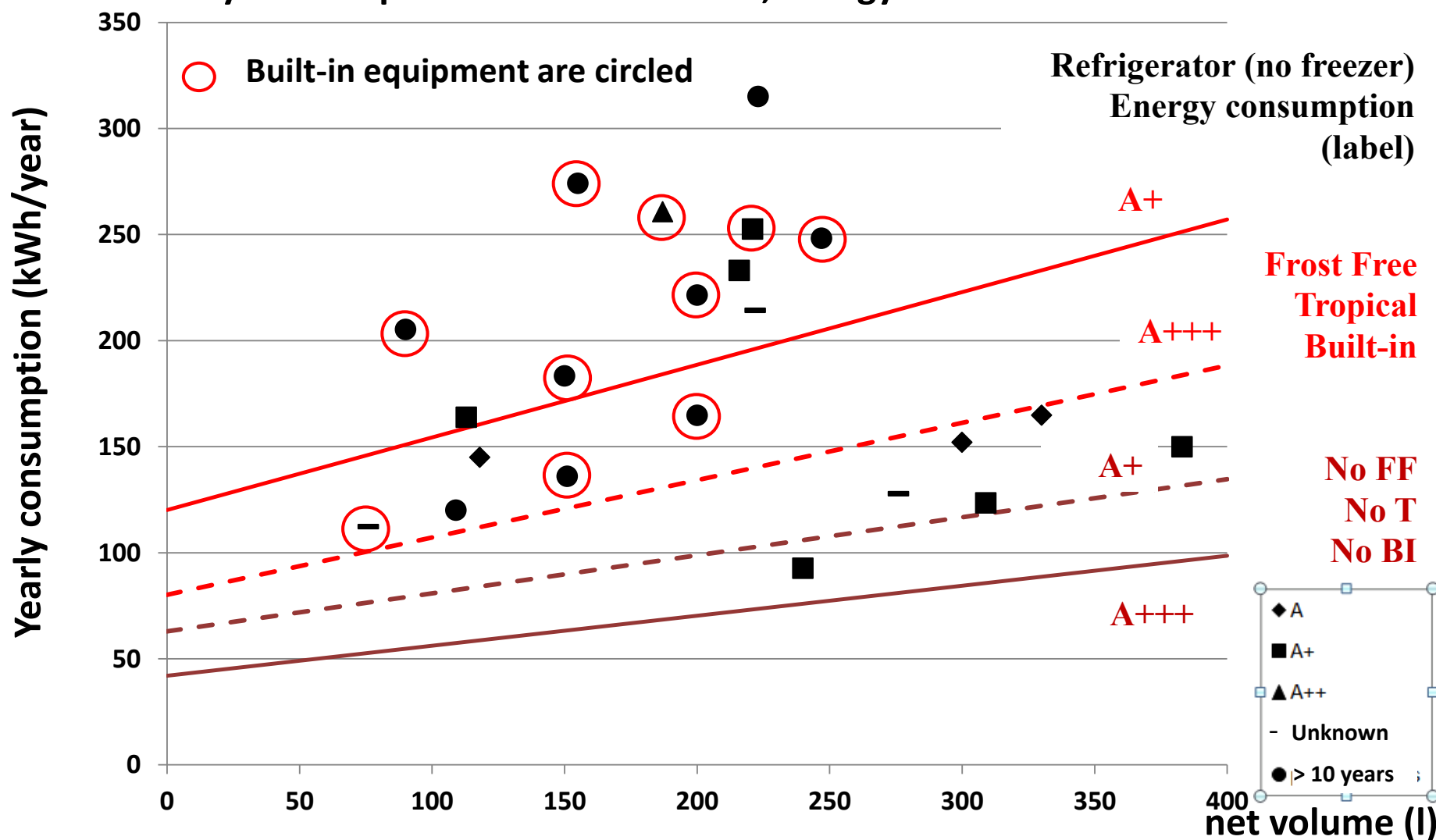


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FRIDGE (kitchen)

Yearly consumption as a funct. of vol., energy label and instal. mode

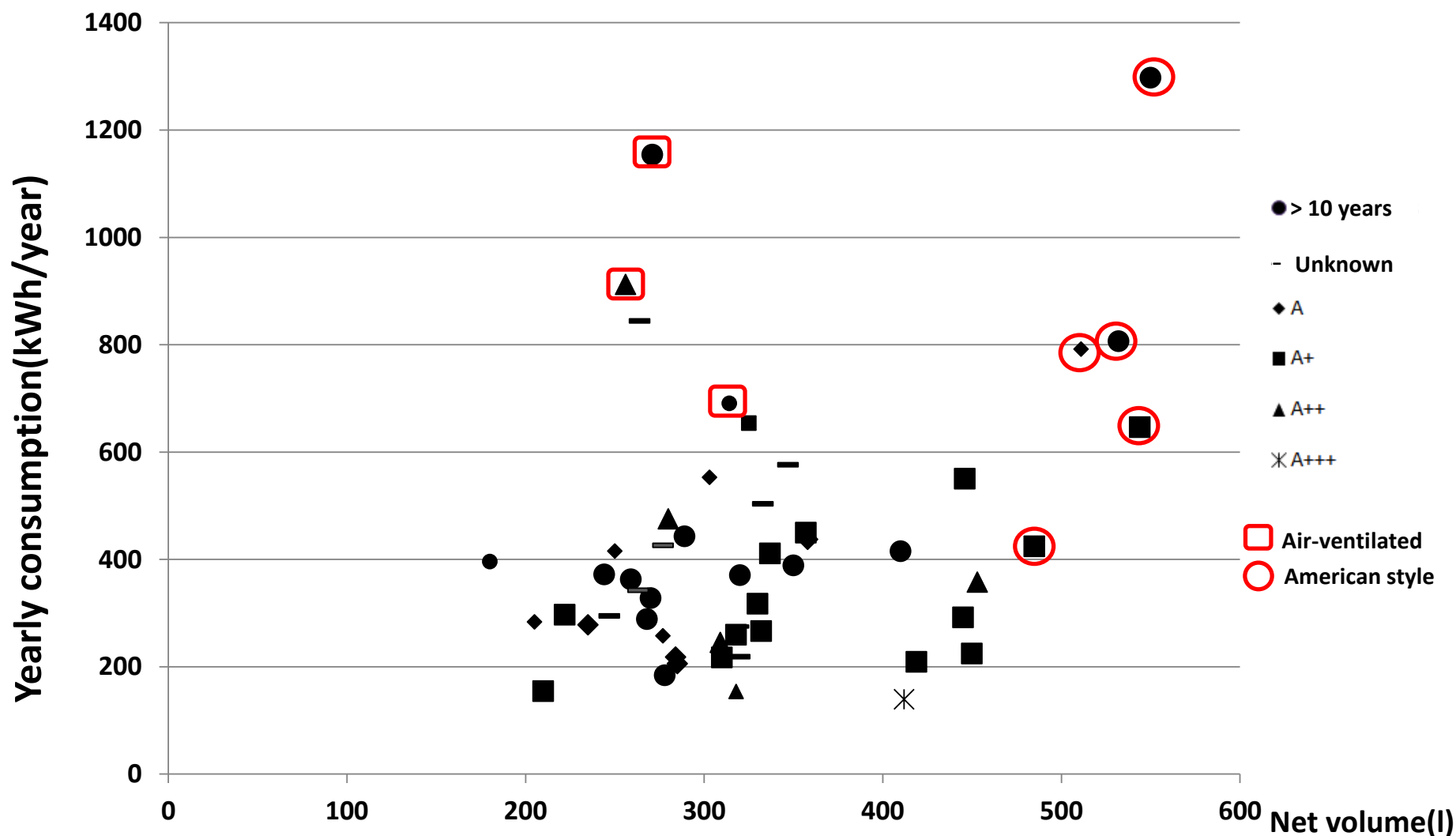


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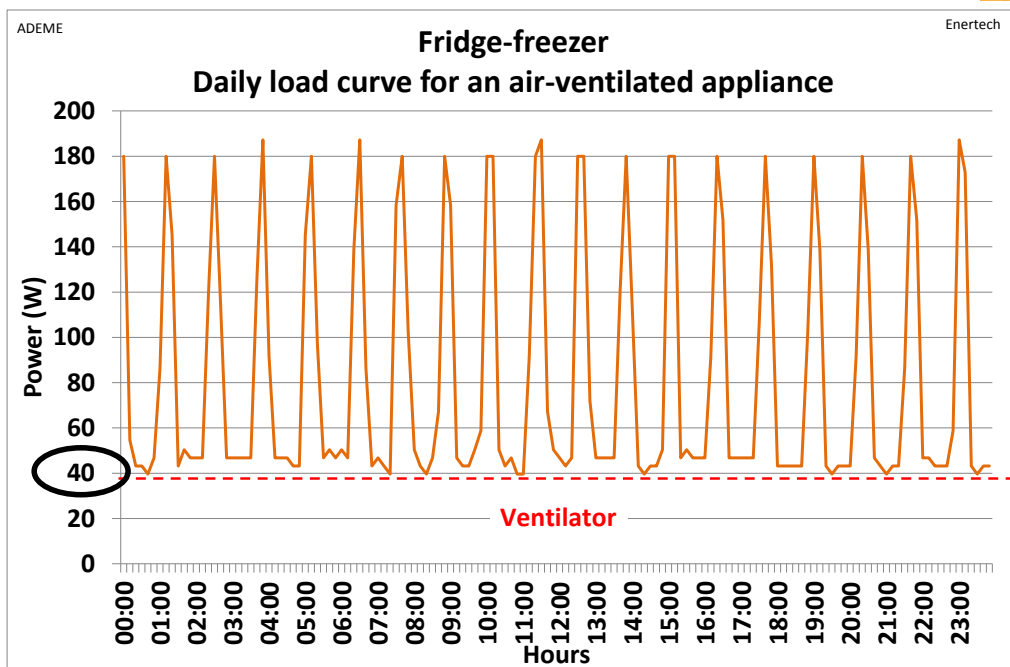
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FRIDGE FREEZER (kitchen)

Yearly consumption as a function of volume, energy label, and type



Cold Appliances

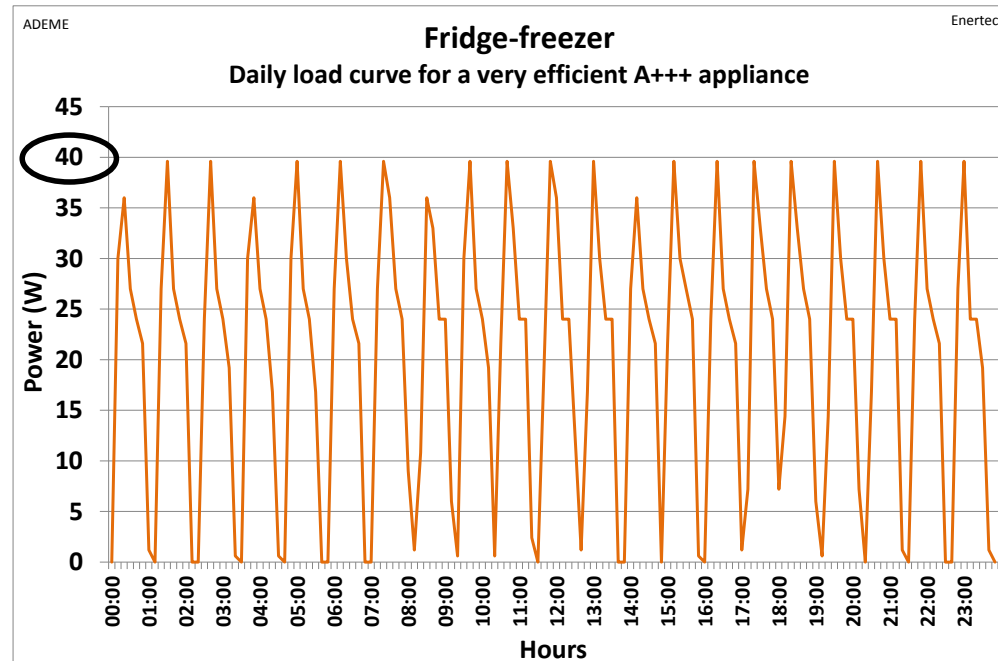


912 kWh/an

- 256 liters
- A++ model
- Ventilator between 25 and 40W

139 kWh/an

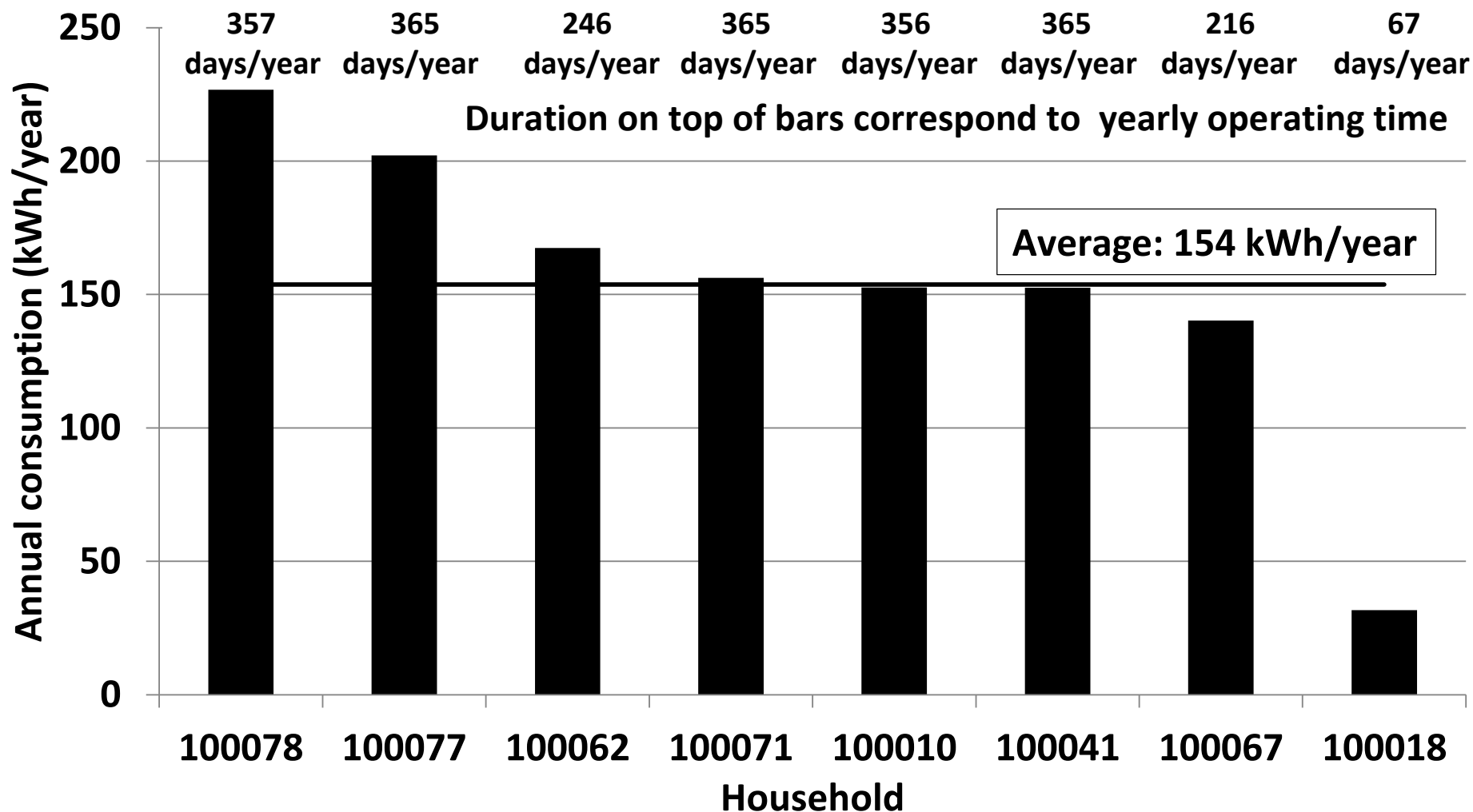
- 412 liters
- A+++ stand alone model
- No fan
- No defrost heater
- No stand-by



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Refrigerated wine cellar Yearly consumption per appliance

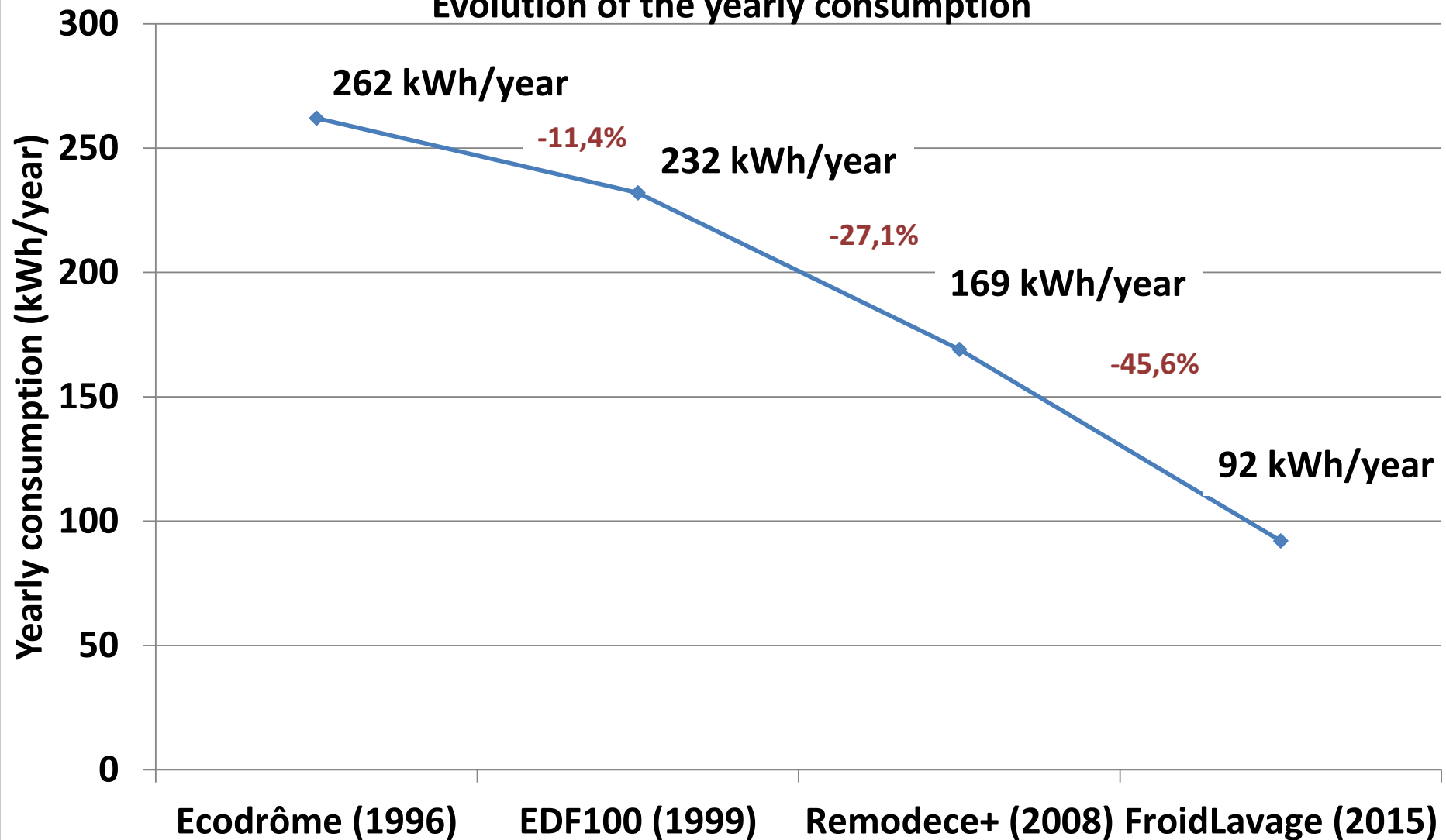


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WASHING MACHINE

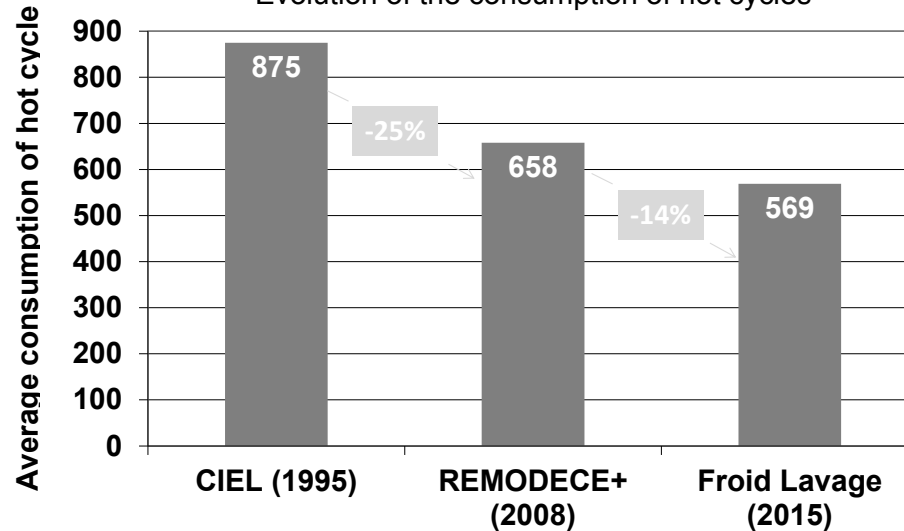
Evolution of the yearly consumption



Washing machines

WASHING MACHINE

Evolution of the consumption of hot cycles

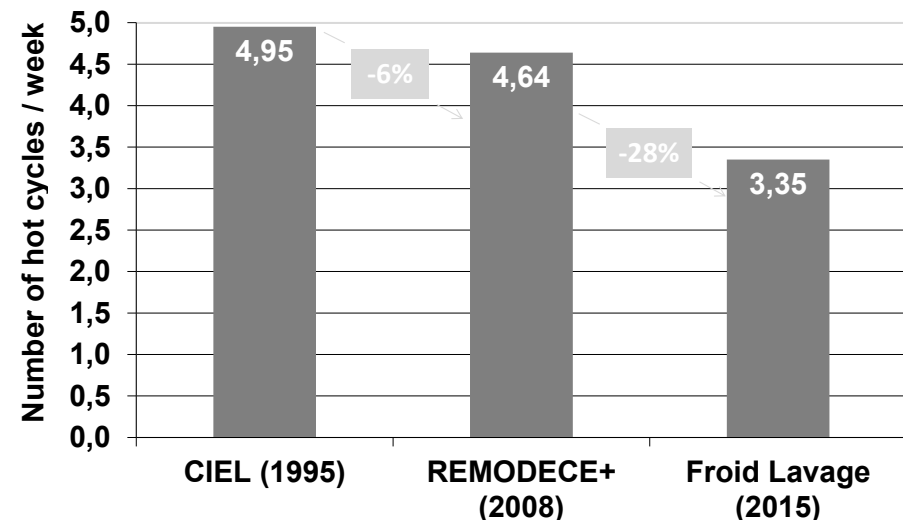


- technological improvements
- change in washing practices.

- Change in practice:
users probably fill up more their washing machines
- Increase of washing machine capacity:
people wash more clothes per cycle

WASHING MACHINE

Evolution of the number of weekly hot cycles

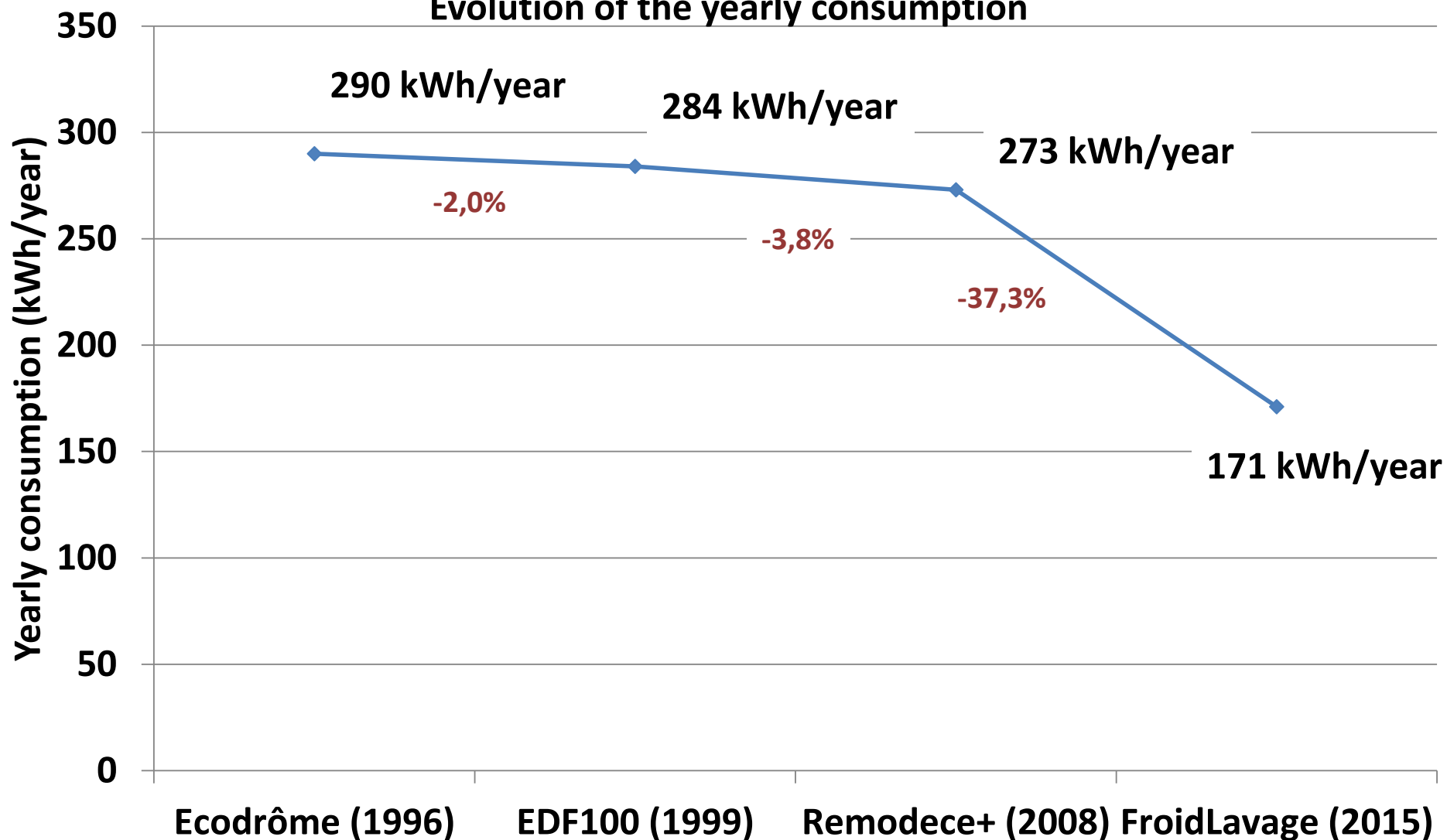


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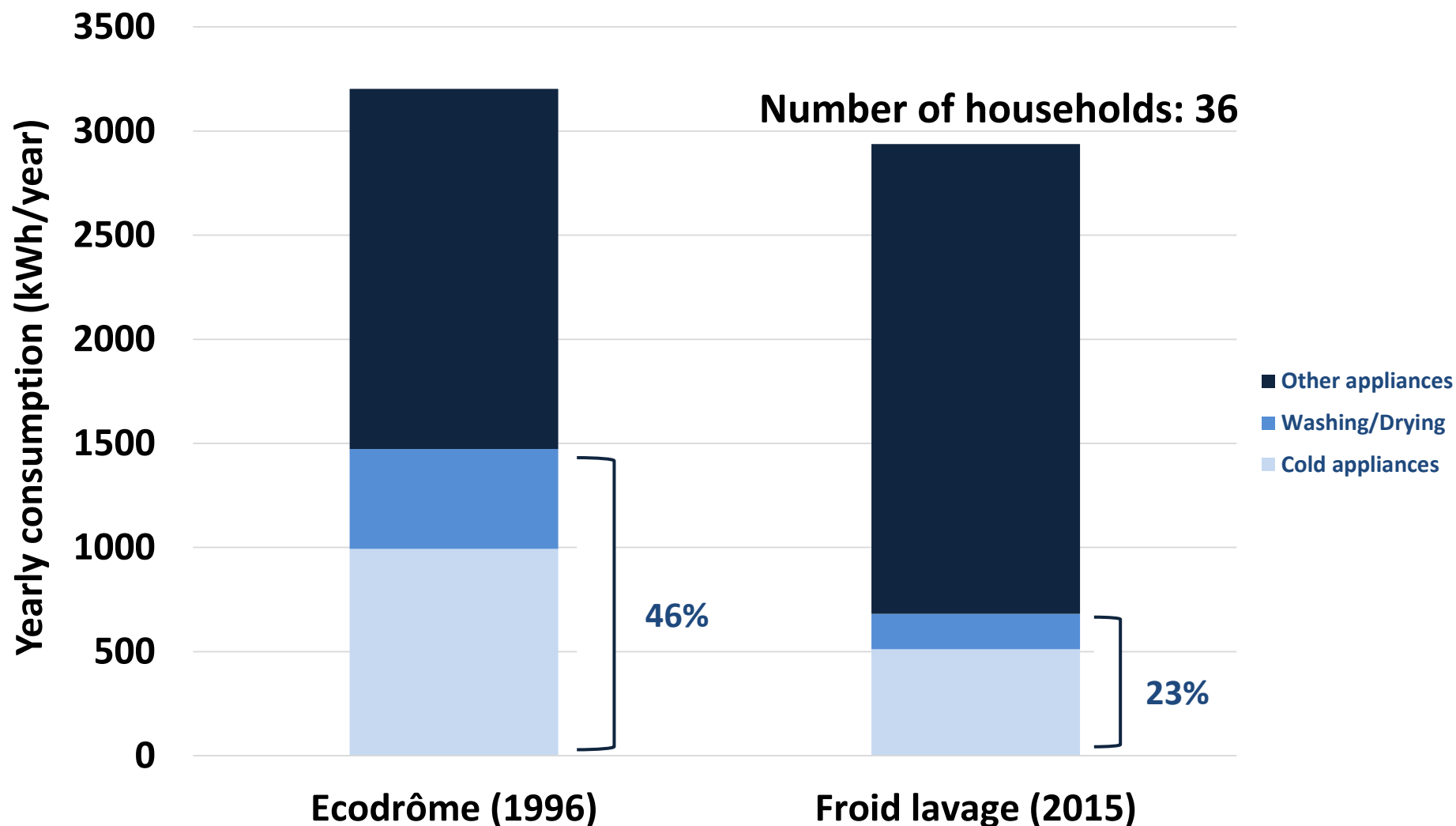
DISH WASHER

Evolution of the yearly consumption



ELECTRIC CONSUMPTION VIEWED FROM THE GRID

Households neither electric heating nor electric water heating



- ➔ **Most of the installed cold and washing appliances are nowadays energy efficient**
- ➔ **conditions of use mainly explain consumption differences**
- ➔ **Presently, nobody seems to know the distribution of French electricity consumption of an average household**
- ➔ **The results of existing monitoring campaigns rapidly become outdated**

THERE IS A NEED TO CREATE A EUROPEAN HOUSEHOLDS' ELECTRICITY CONSUMPTION OBSERVATORY

Thank you for your attention!

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NB : the final report is available at :

<http://www.ademe.fr/campagne-mesures-appareils-production-froid-appareils-lavage-climatisation>

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