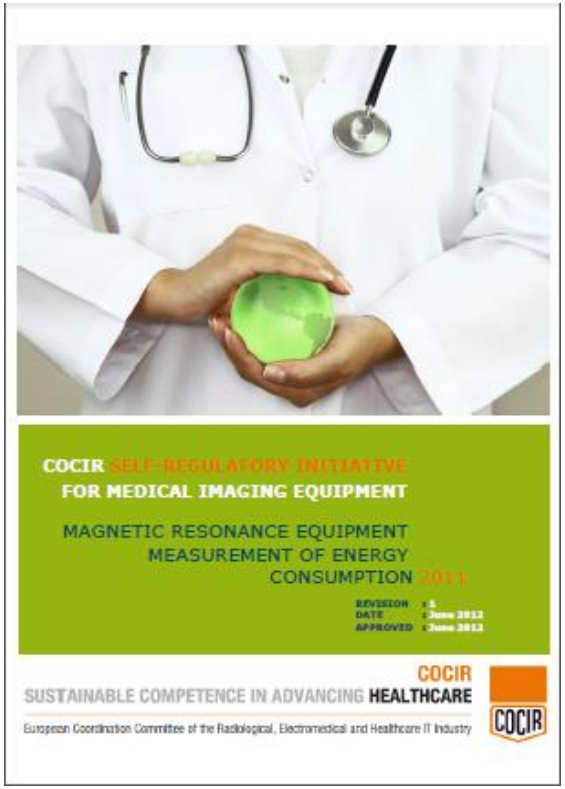
Sustainable Competence
in Advancing Healthcare

**COCIR SELF-REGULATORY INITIATIVE**
**FOR MEDICAL IMAGING EQUIPMENT**

# 3rd ANNUAL FORUM

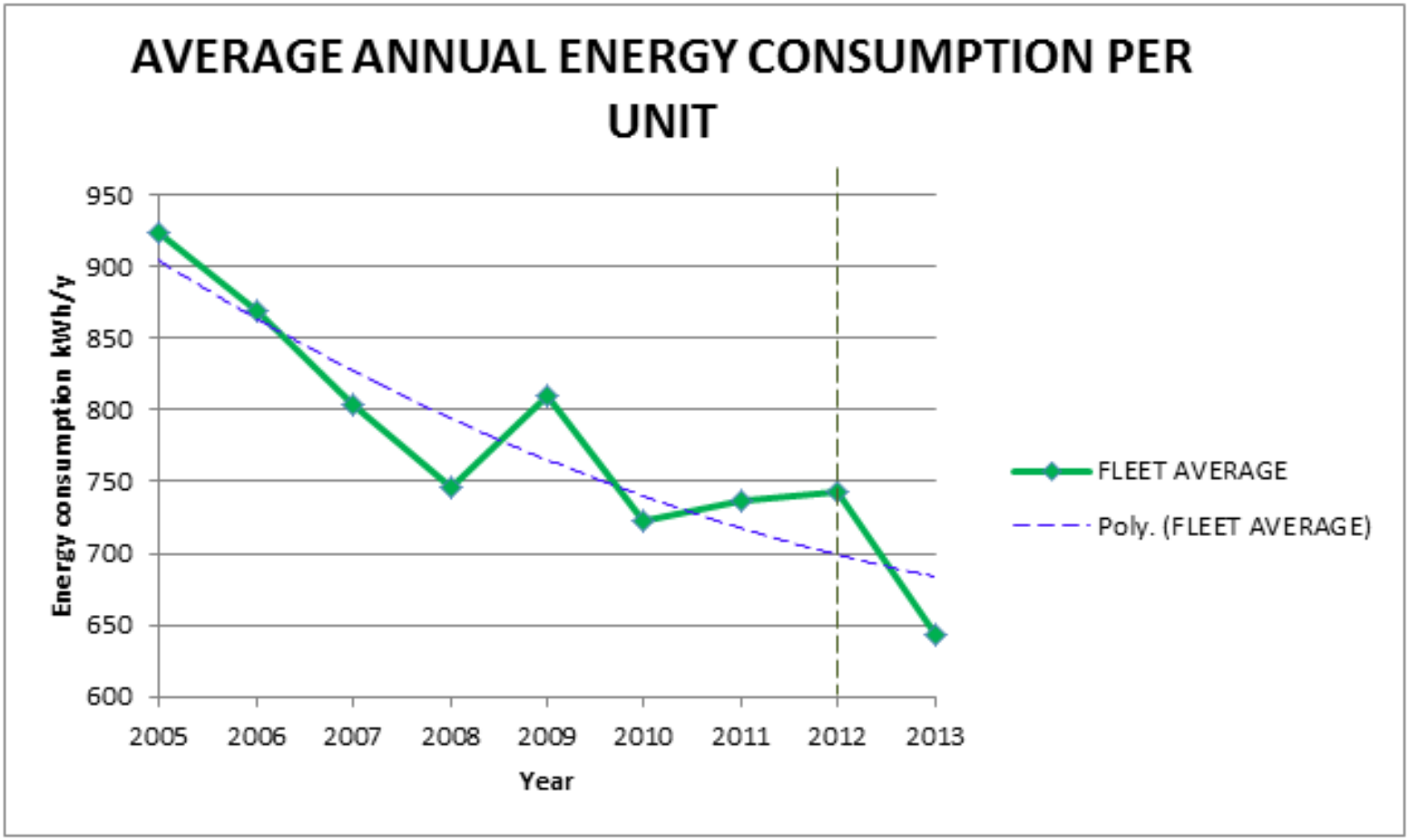
# ACHIEVEMENTS 2013



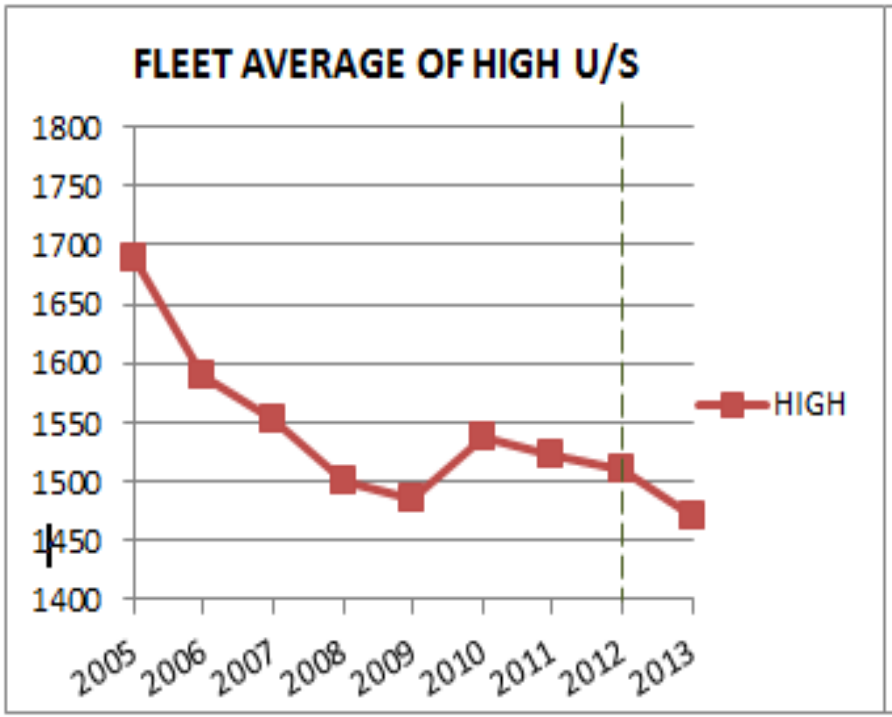
# ULTRASOUND ACHIEVEMENTS 2013

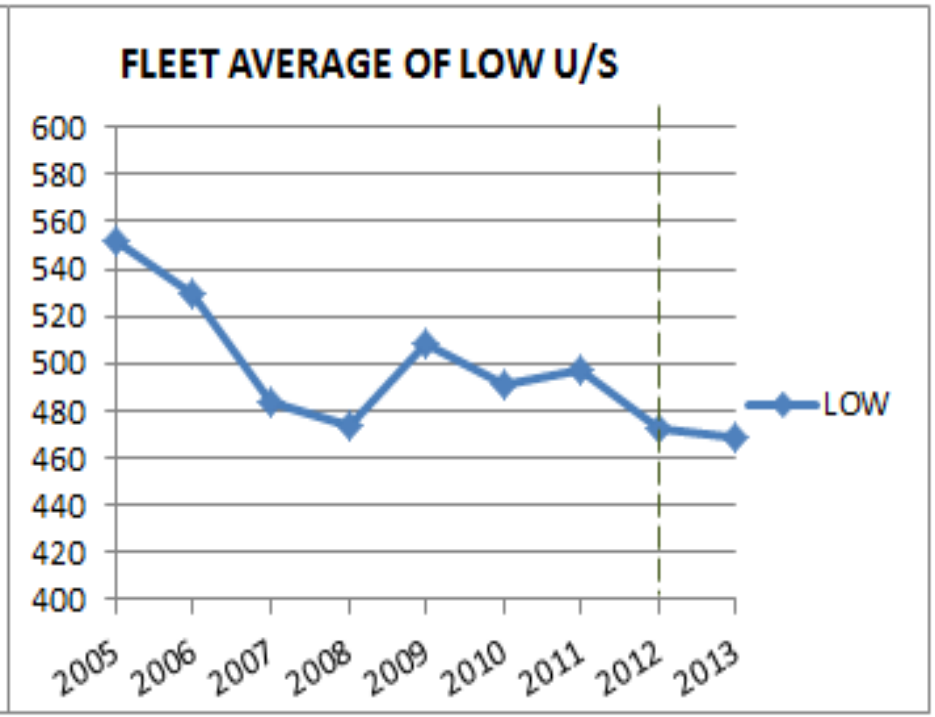
- The ultrasound pilot project terminated in 2012 and the achievements were reported in 2013 (SRI Status Report 2012).
- The subdivision of Ultrasounds into two different categories "High and low energy consuming" showed that the average energy consumption of both categories has been following a decreasing trend since 2005.
- In 2012, High U/S being a mature technology registered a reduction of ✓10,5% while Low energy U/S, a more recent technology, registered a reduction of ✓14,4%.
- The SRI SC decided to continue to monitor U/S even if the pilot is concluded.

# ULTRASOUND FLEET AVERAGE



# ULTRASOUND FLEET AVERAGE H/L



# MRI ACHIEVEMENTS

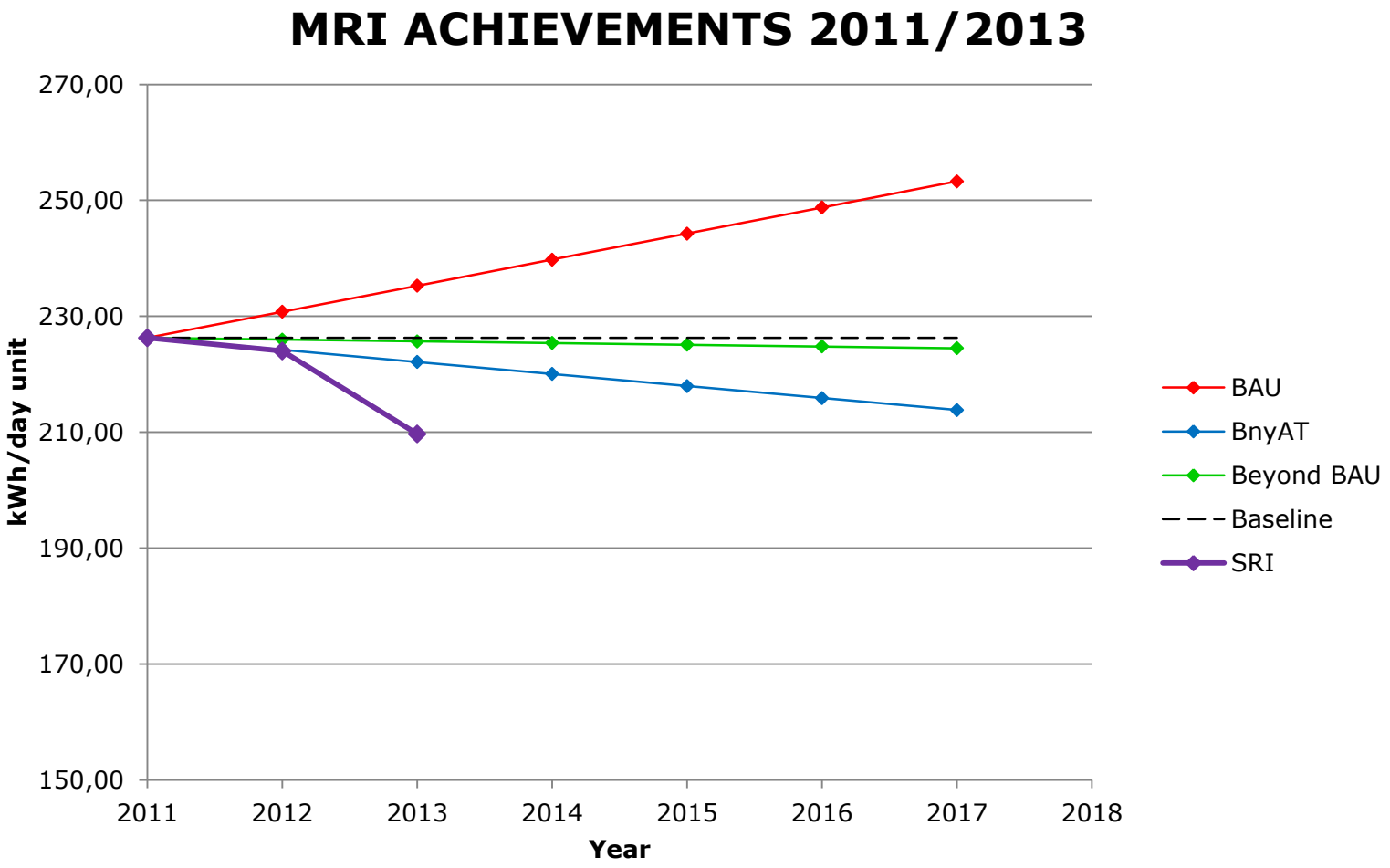
## SOME CONSIDERATIONS

- The SRI target for MRI is calculated on the expected sales in 2017 which are hardy predictable.
- Sales of each individual model are distributed in 2017 according to the distribution today. Forecasting also sales per model is impossible.
- The SRI target can be reached by improving the energy efficiency, but also by changing the market mix (flexibility of COCIR SRI).
- The COCIR SRI target is based only on the improvement potential as changes in efficiency are directly controlled by companies. The market mix is driven mostly by the market (Company can influence through advertising, marketing campaigns, ecc).
- A change in the market mix due to market demand can affect the target in a positive or negative way which cannot be predicted.

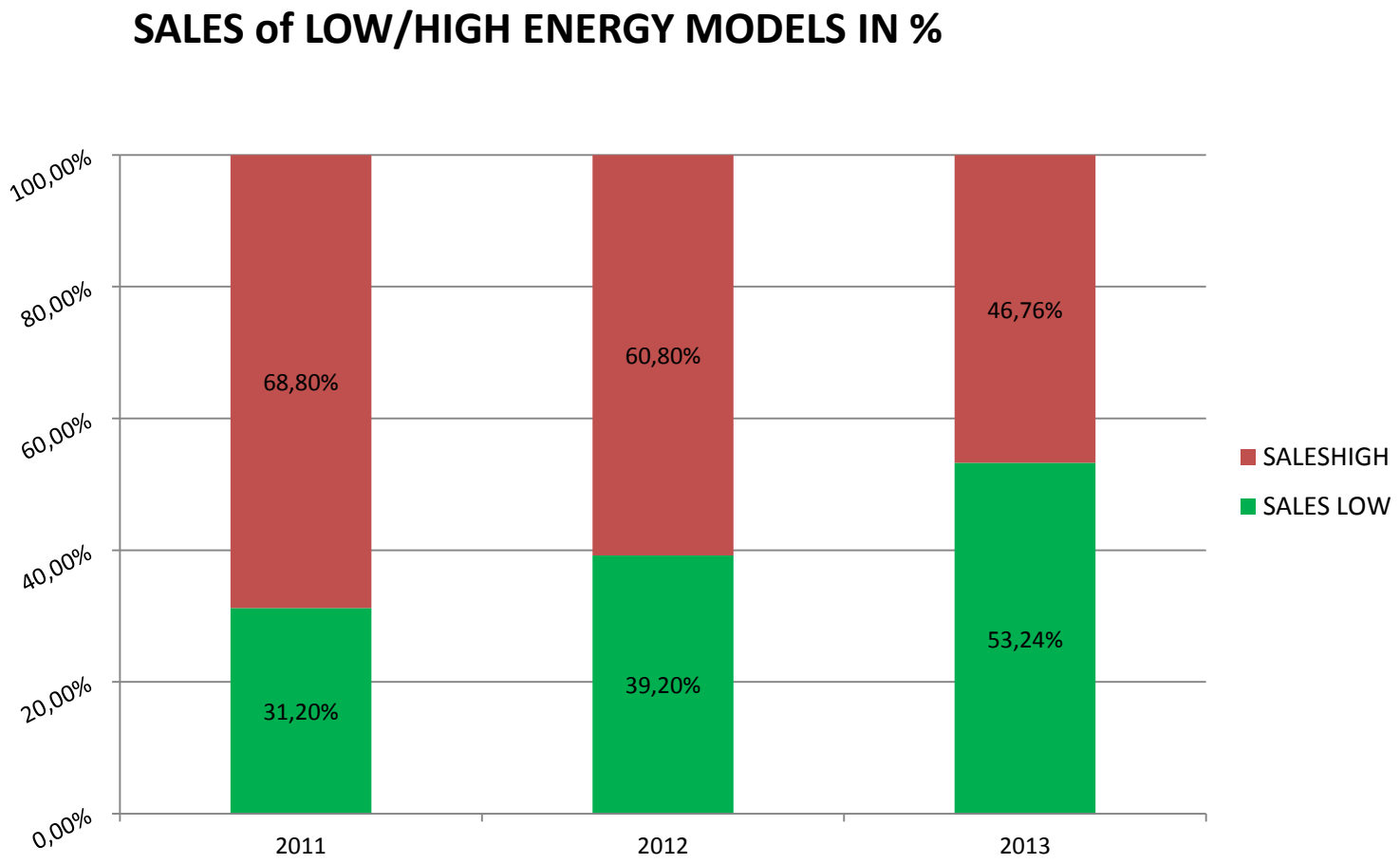
# MRI ACHIEVEMENTS 2011/2013

| | Sold units[9] | Total daily energy consumption (kWh)[10] | Average daily energy consumption per unit (kWh/d) | Beyond BAU | BAU |
|---|---|---|---|---|---|
| 2011 | ✓391 | ✓88.476 | ✓226,28 | | |
| 2012 | ✓449 | ✓100.574 | ✓224,00 | 226,28 | 226,28 |
| 2013 | ✓448 | ✓93.947 | ✓209,70 | 225,98 | 230,78 |
| 2014 | | | | 225,68 | 235,28 |
| 2015 | | | | 225,38 | 239,78 |
| 2016 | | | | 225,08 | 244,28 |
| 2017 | | | | 224,78 | 248,78 |

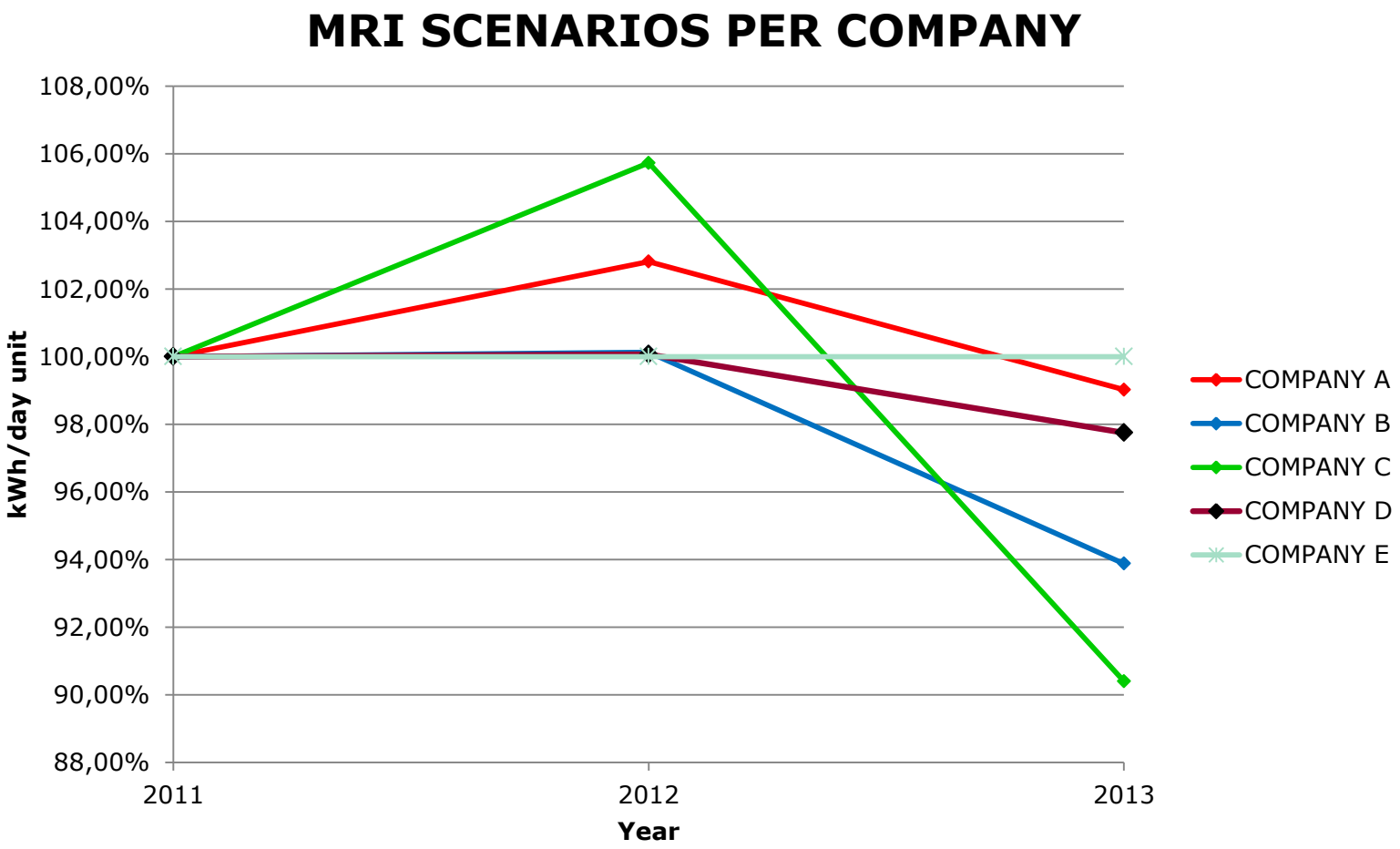
# MRI ACHIEVEMENTS 2011/2013



# HIGH VS LOW ENERGY USING MODELS



# SCENARIO PER COMPANY

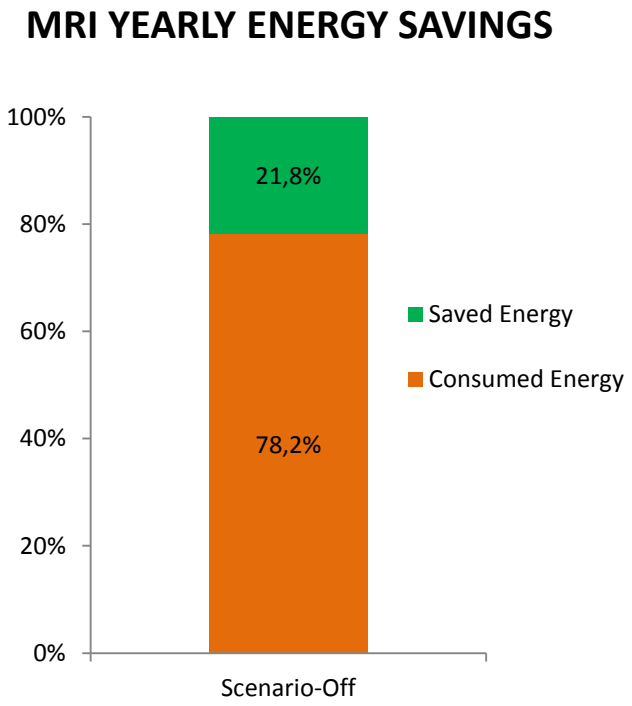


# CONCLUSIONS

- The reduction in average consumption is fluctuating around the forecasted trend.
- The fluctuation depends on market demand which can be influenced, but not controlled. To improve the demand side COCIR cooperated to the development of GPP criteria with SEMCO and DG ENVI.
- To provide a better understanding of the achievements in 2017 the following operations can be evaluated:
  - Targets to be recalculated in a dynamic way based on real 2017 sales.
  - As company committed in 5 years programs based on actual target, achievements in 2017 can be normalized to 2011.

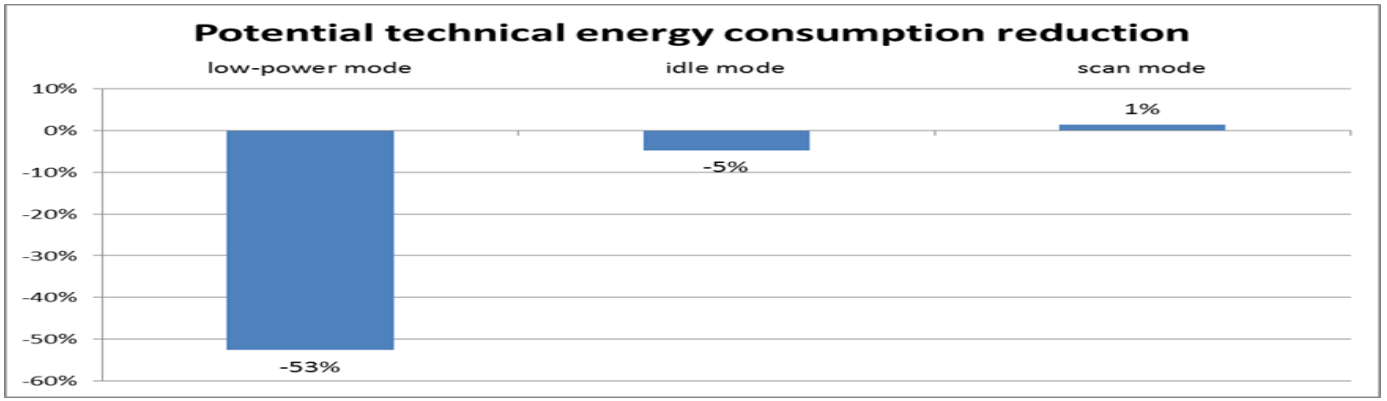
# ADDITIONAL COCIR ACTIVITIES

- As the CT brochure was very well received, COCIR decided to develop a similar one for MRI equipment.
- Considering the average energy usage, the possible energy savings of MRI technology are higher than CT.
- Up to 28% of annual energy can be saved by an environmentally careful usage.

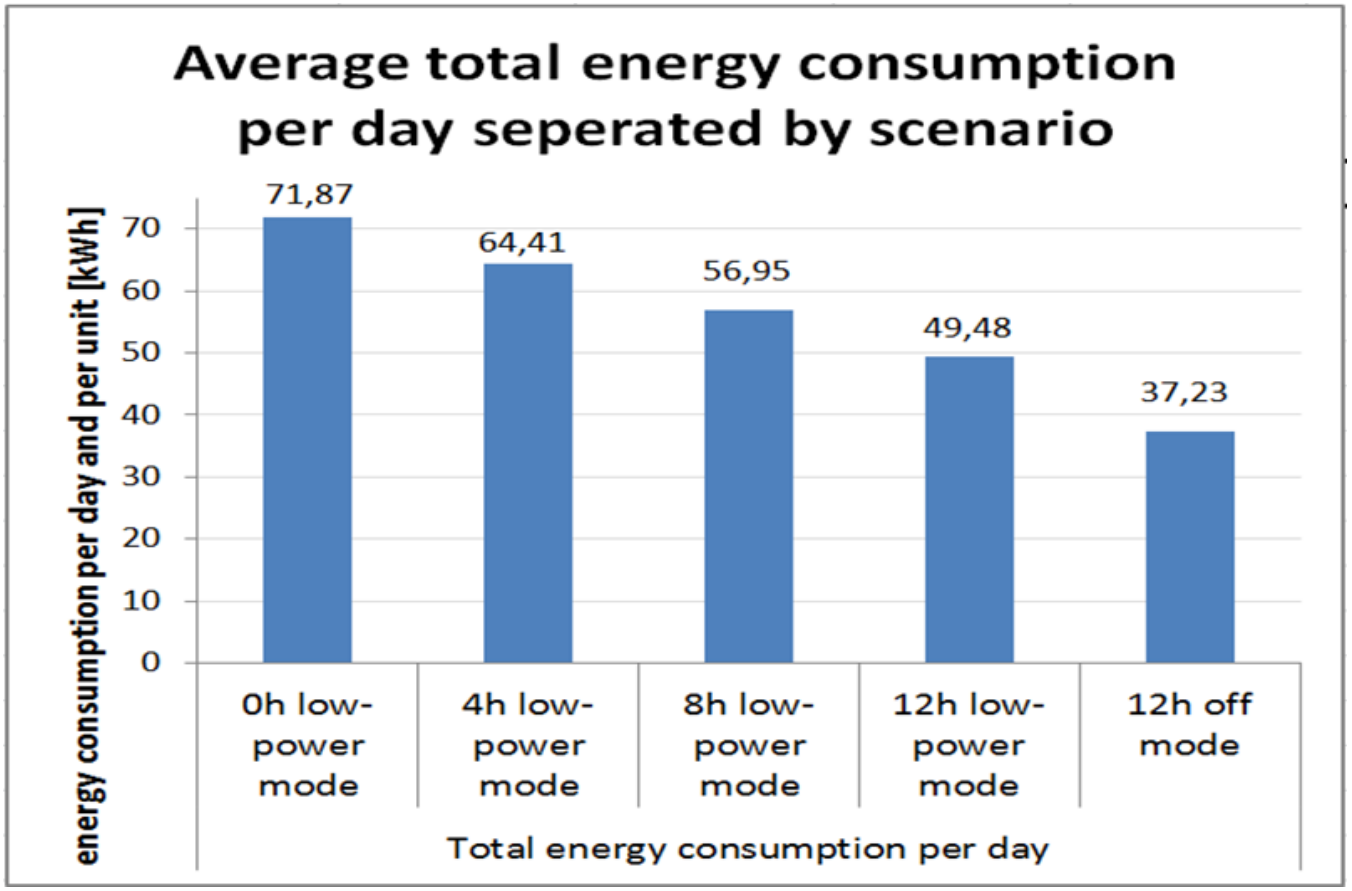


# CT ACHIEVEMENTS

- The study on improvement potential shows limited improvement potential except low-power mode.
- LowPower mode accounts for just a 24,5% of the total daily energy consumption and therefore the 53% improvement even if possible, will end up in a 13% reduction.
- This means that, unless user behaviour can be influenced, any reduction of the device energy usage in LowPower mode may have a limited net effect for users (around 1,9%), since the LowPower mode is rarely used.

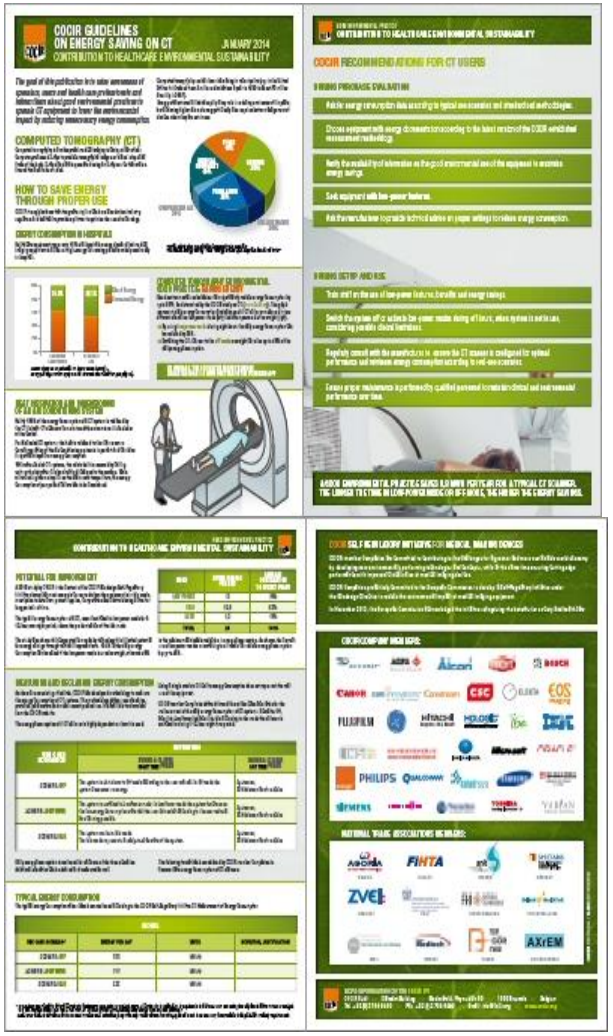


# USER BEHAVIOR



# SRI GOAL FOR CT

- COCIR develop the "COCIR Guidelines on energy saving on CT" brochure
- The brochure has been disseminated to users and patient organizations:
  - European Society of Radiology (ESR) http://www.myesr.org
  - European Patient Forum (EPF) http://www.eu-patient.eu/
  - European Federation of Nurses Associations (EFN) http://www.efn.be/
  - European Hospital and Healthcare Federation (HOPE) http://www.hope.be/
  - Healthcare Without Harm (HCWH) http://www.noharm.org/
  - Head of European Radiological Protection Competent Authorities (HERCA) http://www.herca.org
- Printed copies have been distributed to visitors to ECR 2014 (European Congress of Radiology) in Vienna, one of the most important EU event for radiology.



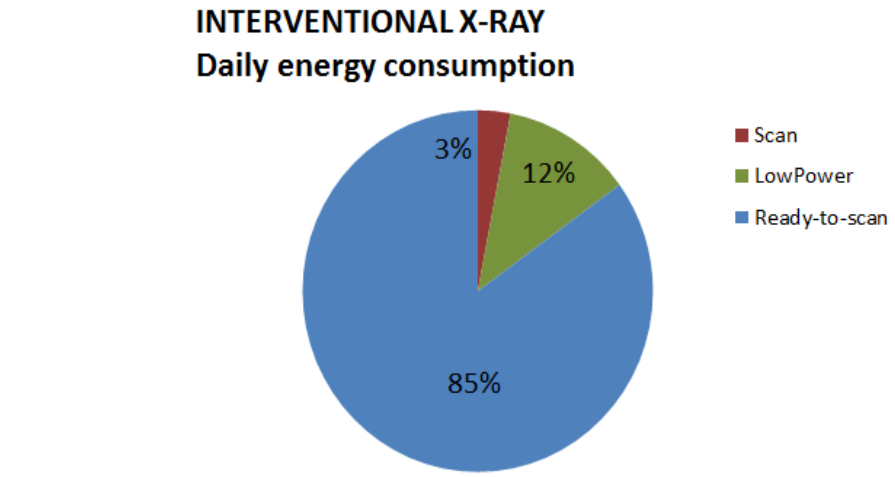
# X-RAY MODALITY

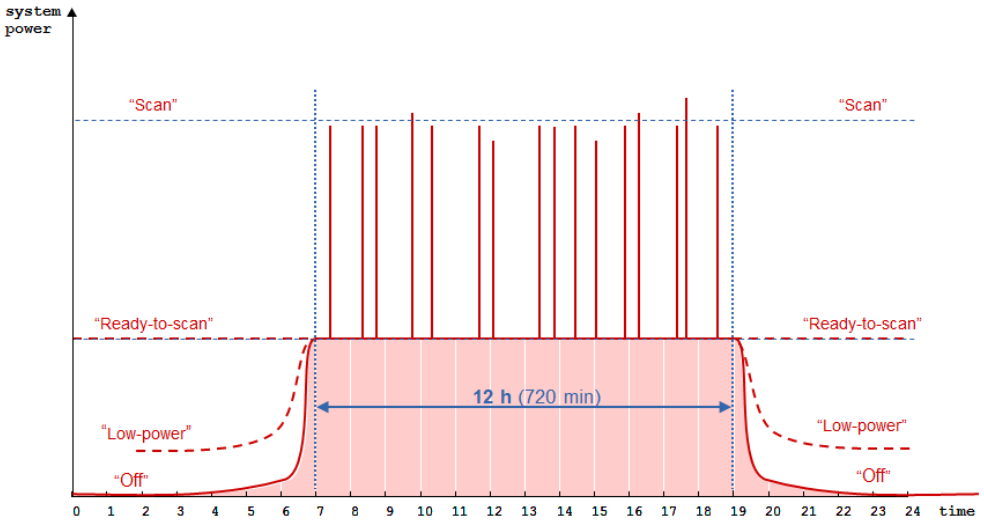
# X-RAY

- X-ray has been identified as the 3rd modality to be addressed by the COCIR SRI.
- The X-ray modality comprises a lot of different categories.
  - Angiography
  - Fluoroscopy
  - Surgery
  - Radiography
  - Gen&Uro
  - Mammo
- Unlike other imaging equipment in the scope of the SRI there is a big number of companies manufacturing x-ray devices. The actual SRI participating companies cover around 92% of the market for angiography systems, but less than 52% for all the remaining categories.

# MEASUREMENT METHODOLOGY

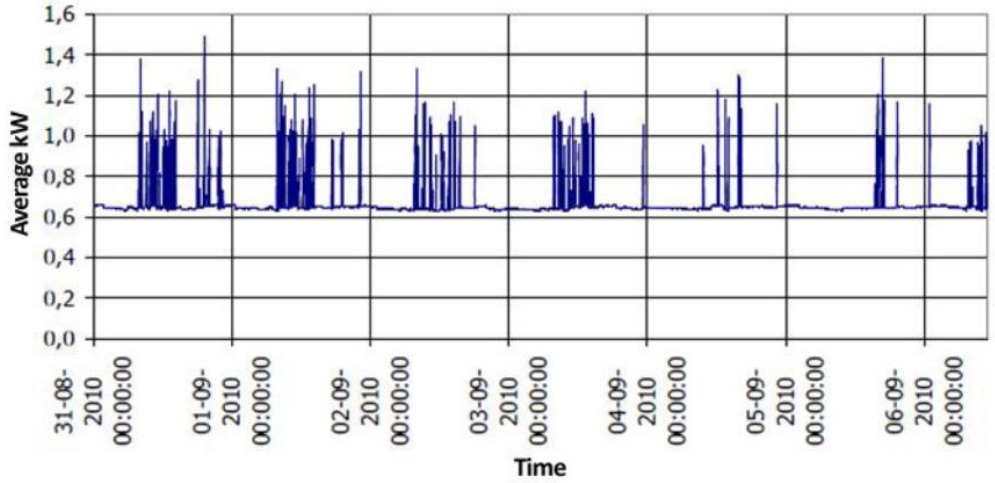
- The Steering Committee decided that the measurement methodology should not take into account scan mode, which would introduce a new layer of complexity to account for less than a 4% daily energy consumption.
- Power consumption is measured in
  - Off mode
  - Low-power mode
  - Ready-to-scan mode



# USER BEHAVIOUR

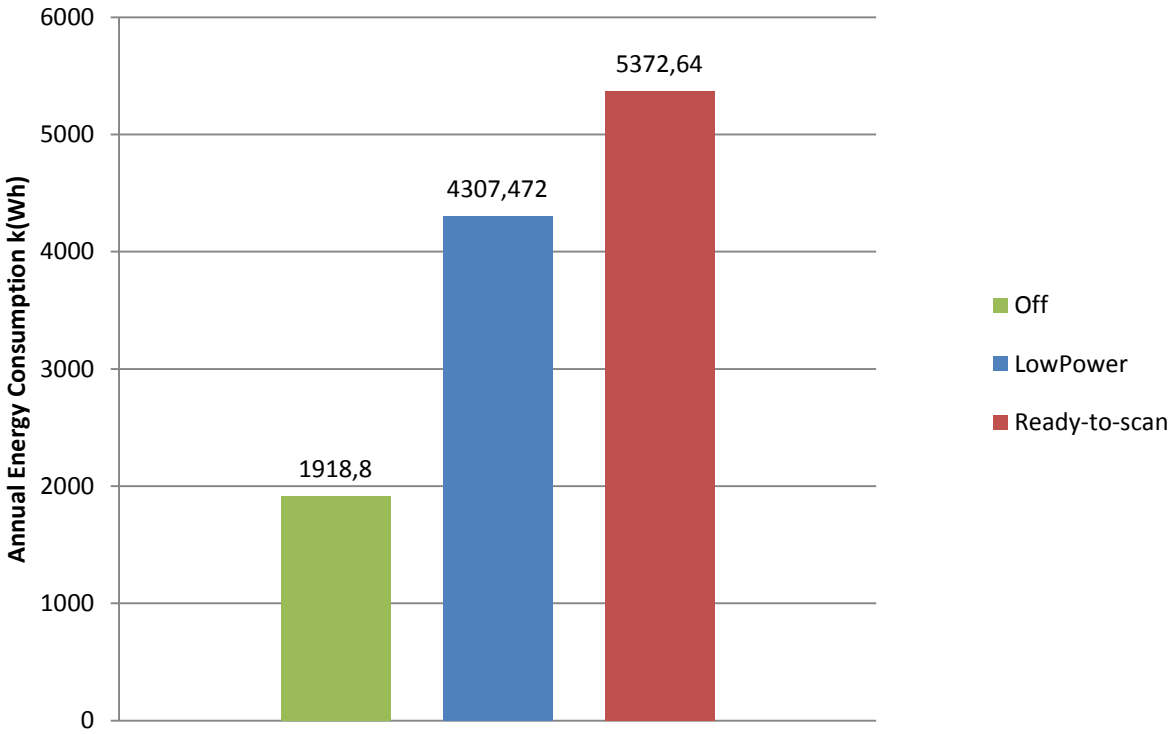
- Considering the great variety of X-ray categories and different uses (from mobile c-arc to stationary interventional systems), it is impossible to identify a general user behaviour.
- Nonetheless considering the findings of previous projects it can be expected that most users do not profit of the low power or switch off functions of x-ray devices.
- The same conclusion are contained in the study of the Danish Energy Saving Trust "Energy Efficiency in Hospitals and Laboratories" where the energy consumption of x-ray and user behavior have been investigated




Danish Energy Saving Trust "Energy Efficiency in Hospitals and Laboratories"

# GOOD ENVIRONMENTAL PRACTICE

**ANNUAL AVERAGE ENERGY CONSUMPTION PER SCENARIO**



# COCIR ECODESIGN GOAL

- As for CT, X-ray greatest potential for improvement can be achieved by users by using the low power modes /off mode features equipped on x-ray systems.
- Good environmental practice can save from 50% to 64% of annual energy consumption.
- Information and training on good environmental practice is fundamental to solve user's doubt and resistance to the use of energy saving modes (see the Danish Energy Saving Trust study).