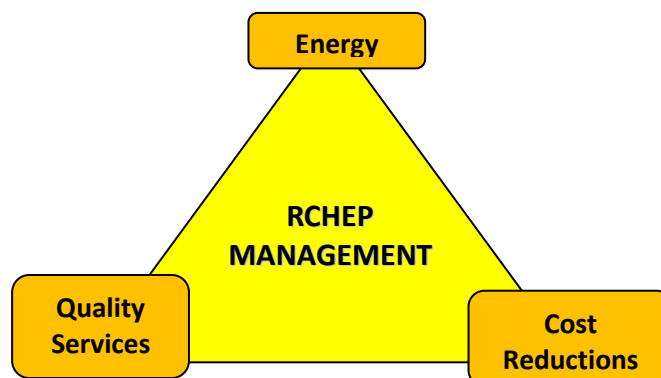


## SAVE AGE – Energy Saving Assessment

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When aiming at energy efficiency, it is essential to balance the possible cost savings with the quality of offered services of a RCHEP. The financial savings and the rise of the energy prices prove the rationality of adapting energy efficiency measures at care homes. Nevertheless, offered services and especially comfort conditions are of first importance in a RCHEP. As a result, an important consideration point is the controversial subject between energy efficiency and level of comfort for the residents. But, as identified within the materialization framework of the SAVE AGE project, it was not quite clear, that some practices leading to important energy also increase the level of comfort.



*RCHEPs' working triangle*

One of the objectives of the SAVE AGE project is to estimate the energy saving potential at a European level based on the results derived by the analysis of the total energy consumption in 100 residential care homes for elderly people (RCHEP). In order to provide a more useful and integrated assessment, the geographical coverage of the energy assessment was EU27+Serbia+Switzerland (E.D.E. countries outside the EU), leading to a total of 29 countries. The Countries were grouped and examined, in order to extrapolate more interesting results. The overall energy saving potential was calculated based on the benchmark results of similar counties (climatically and environmentally).

Within the framework of SAVE AGE the energy data gathered and analysed for 100 RCHEPs were extrapolated, based on the aforementioned geographic characteristics. The actual final energy consumption around Europe was calculated at 12,915 kWh/resident/a. With simplified and conservative assumptions this energy consumption could be reduced as following:

### 1. Behavioral change only

- 5% savings: leading to 12,269 kWh/resident/a
- Reduction of running cost: 71.03 €/resident/a

## 2. Low investment measures

- 10% savings: leading to 11,623 kWh/resident/a
- Reduction of running cost: 142.06 €/resident/a

## 3. High investment measures

- 25% savings: leading to 9,686 kWh/resident/a
- Reduction of running cost: 355.16 €/resident/a

Trying to “transform” these savings into running cost for all RCHEPs around Europe, the total estimated energy conservation in terms of final energy consumption was extrapolated to:

### 1. Behavioral change only

- 5% savings: 2,502 GWh/a
- Reduction of running cost: 275 M€/a

### 2. Low investment measures

- 10% savings: 5,004 GWh/a
- Reduction of running cost: 550 M€/a

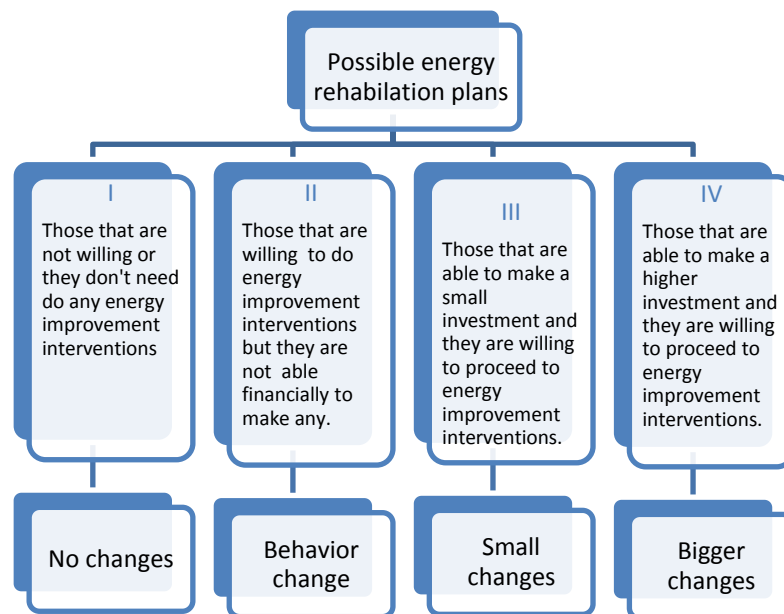
### 3. High investment measures

- 25% savings: 12,511 GWh/a
- Reduction of running cost: 1.376 M€/a

Behavioral change measures can start immediately, the experience from the audited buildings within the SAVE AGE project shows a great potential for this. Low investment measures are a subject of studies, which has to be done separately for each building and concerns low budget measures, such as simplified control techniques, installation of solar panels for hot water usage, replacement with high efficacy lamps, replacements of ducts' or pipes' thermal insulation. Finally, high investments measures are a subject of studies, which has to be done separately for each building and concerns mainly intervention with long expected average lifetime.

The energy rehabilitation plan proposed by SAVE AGE does not have specific technical targets but it has a, more, financial approach. All RCHEPs are assumed to belong to one of the following categories:

- I. Those that are not willing or do not need to proceed to any energy improvement interventions.
- II. Those that are willing to proceed to energy improvement interventions but they are not able financially to proceed to any.
- III. Those that are able to materialise a small investment and they are willing to proceed to energy improvement interventions.
- IV. Those that are able to materialise a higher investment and they are willing to proceed to energy improvement interventions.



*Possible energy rehabilitation plans*

Summing up, it is obvious that the energy saving is calculated in terms of reduction of the actual energy consumption, assuming that the desired indoor conditions are achieved. The rate of energy saving depends on a specific building and is subjected to the decision of the building manager and the availability of financial resources, assuming that the available techniques and systems can achieve the pre-defined targets. Nevertheless, the potential for energy saving in RCHEPs is important and the SAVE AGE project could provide important tools towards the target of energy efficiency.

#### References:

[1] Zapounidis Konstantinos; *Energy Saving Assessment for RCHEPs; 2011; SAVE AGE Project, IEE/09/676/SI2.558233.*