



# THE NETHERLANDS: NATIONAL REPORT ON KEY DECISION FACTORS

National report on end-users decision making factors on H&C systems

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## 1. EXECUTIVE SUMMARY

The objective of this report is to identify end-users' decision making factors for heating and cooling (H&C) systems in The Netherlands. This will be the first step to build an understanding about the decision process when deciding on a heating and cooling system and to provide tools that can facilitate stakeholders at European and national level to provide better and transparent information to consumers.

The on-line surveys are conducted in three different sub-sectors in the Netherlands: residential (560 surveys), non-residential (17 surveys) and industrial (35 surveys). The surveys have addressed the heating and cooling sector as a whole, not only the renewable energy solutions (RES). The Dutch survey has been carried out by Ipsos Netherlands under the coordination of the Netherlands Enterprise Agency (RVO.nl). Similar surveys have been done in Poland, Portugal, Spain and the United Kingdom.

In the Netherlands, the main source of heating is natural gas (app. 70%). Second is district heating. The satisfaction with the current heating systems is very high.

The information sources mentioned most for all sectors are professionals (61 – 94%). Second for residential consumers is the internet (49%). In the non-residential sector colleagues are second (65%) and in the industrial sector technicians of the company are the second mentioned information source (49%).

The dominant key purchasing factors mentioned in the surveys are:

- Residential: Guarantee of comfort (83%), Low maintenance costs (82%), Reliable and safe (81%), Savings (78%), Initial investment (76%) and Reliability (74%)
- Non-residential: Low maintenance costs (94%), Guarantee of comfort (94%), Environmental reasons (94%), Savings (88%) and Reliability (88%).
- Industrial: Savings (89%) and Reliability (77%)

The knowledge about heating and cooling with renewable energy sources is limited with residential consumers (48%). The awareness is higher in the non-residential sector (94%) and the industrial sector (71%). Solar thermal is mentioned most (95%).

The perception of RES is that it is more eco-friendly and gives higher savings and lower operation costs along the lifetime of the equipment but has higher initial investments than fossil fuel installations. The perceived working reliance is more or less the same.

The main reasons not to choose RES in the residential sector are the structural changes needed in the dwellings and the initial investments. The initial investments are also a barrier in the industrial sector. 61% of the residential consumers is willing to make a higher initial investment.

## 2. OBJECTIVE

The objective of this report is to identify end-users decision making factors for heating and cooling (H&C) systems in The Netherlands. This will be the first step to build an understanding about decision process when deciding on a heating and cooling system and to provide tools that can facilitate stakeholders at European and national level to provide better and transparent information to consumers.

The surveys allow identifying the key purchasing criteria (KPC). They will also provide information on “Willingness to pay”, including environmental and social parameters. The surveys have been addressing the heating and cooling sector as a whole and not only the renewable solutions. The surveys have been executed in three different sectors: residential, non-residential and industry in order to have a deep view of the whole sector.

## 3. SURVEY IN THE NETHERLANDS

To achieve this objective, a national survey has been carried out by Ipsos Netherlands under the coordination of the Netherlands Enterprise Agency (RVO.nl). The survey has been conducted and reported by Ipsos Netherlands.

All interviews have been conducted online. To ensure the results are representative for the population of Dutch house owners, the data have been weighted on a number of socio-demographic characteristics, being gender, age, education level and region. The source of the population data, used to weighing the survey data, is the Dutch Centre for Information Based Decision Making & Market Research (MOA). The execution time of this data collection, excluding the subcontracting launching period, is two months.

As far as the non-residential and industrial target groups are concerned, only the headlines of the survey have been used and reported in this document.

The number of respondents in the Netherlands by sector and the related representativeness were the following:

SECTOR	NUMBER OF RESPONDENTS	POPULATION SIZE	CONFIDENCE LEVEL	SAMPLE ERROR
Residential	560	7.603.815	95%	4,2%
Non-residential	17	465.028	95%	-
Industry	35	186.181	95%	-

## 4. SURVEY ON RESIDENTIAL SECTOR

The flow diagram in the execution of the survey is shown in Figure 1 and 2.

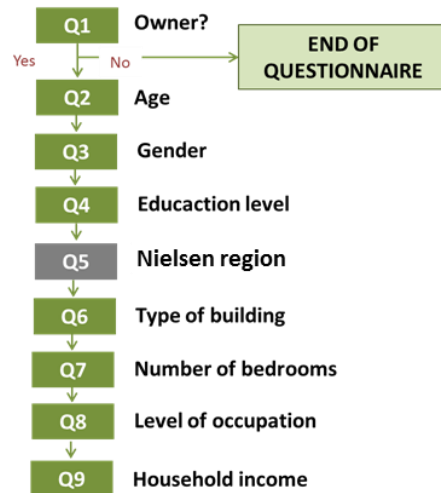


Figure 1 Characterization of the sample

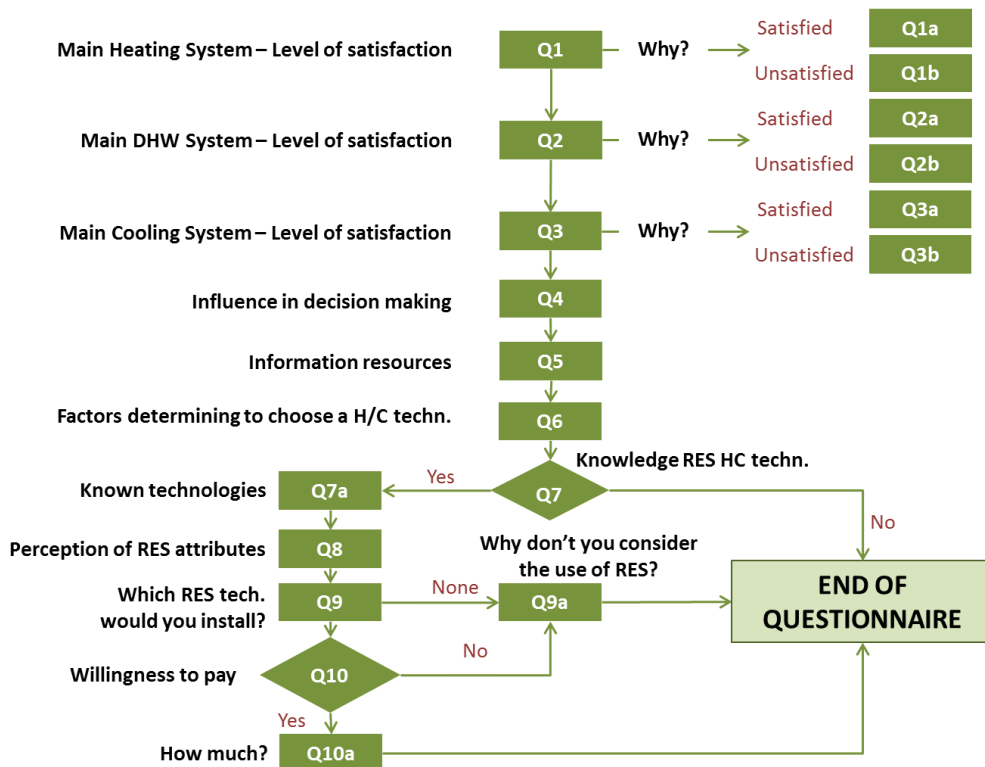


Figure 2 Flow diagram to follow in questionnaires – residential sector.

### 4.1 MAIN CHARACTERISTICS OF THE SAMPLE

In the Netherlands, 560 interviews were executed in the residential sector. The main characteristics of the sample are depicted in Figure 1. To ensure the sample is representative for the population, the data are weighted for the Dutch population (NL 18+, house owners).

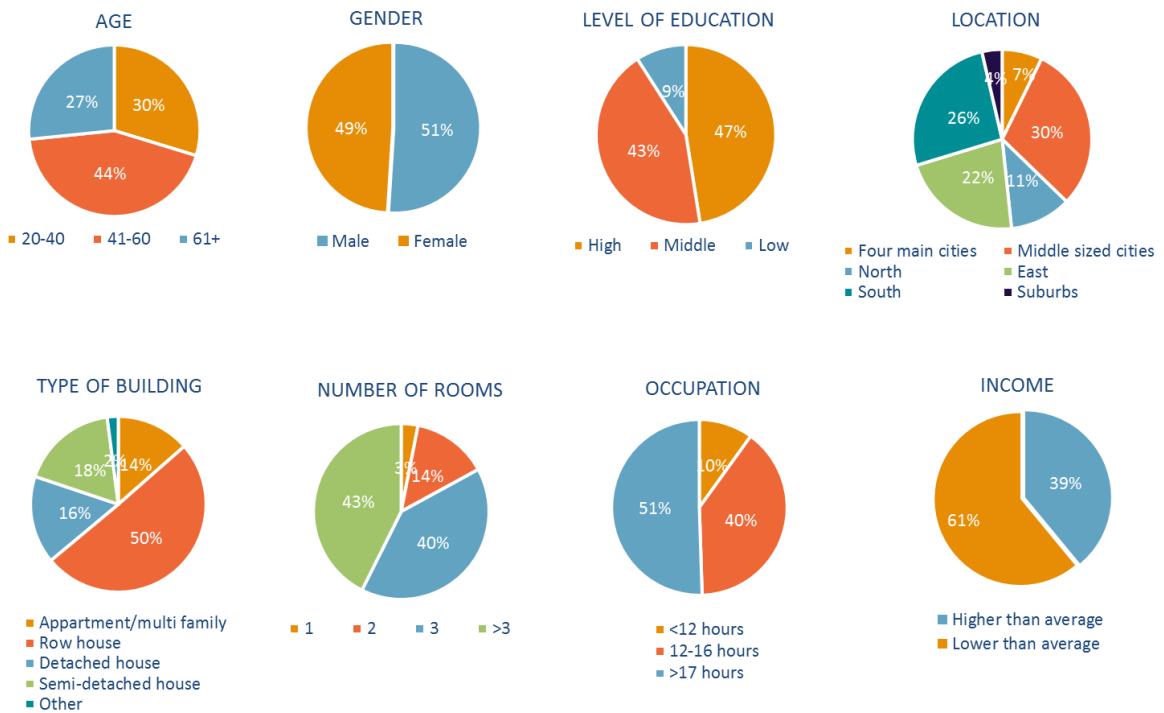
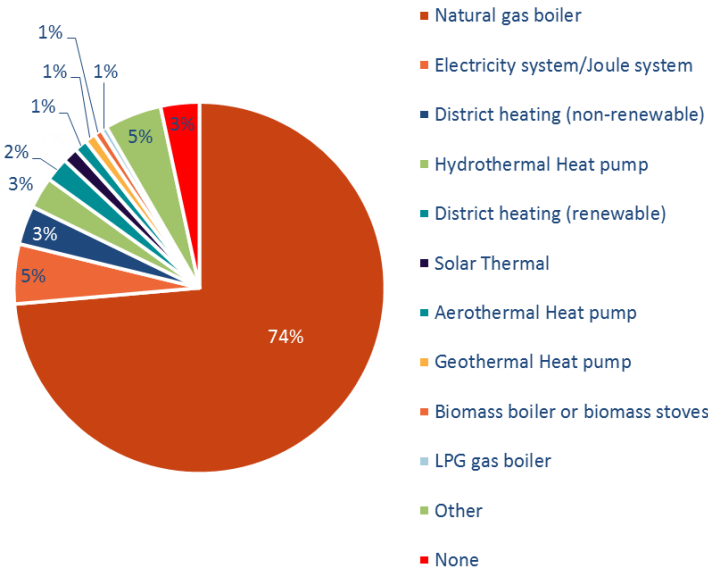


Figure 3 Characterization of the sample (n=560) Location: the four main cities (Amsterdam, Rotterdam, the Hague and Utrecht) are all located in the western part of the Netherlands.

## 4.2 CURRENT HEATING AND COOLING SYSTEMS

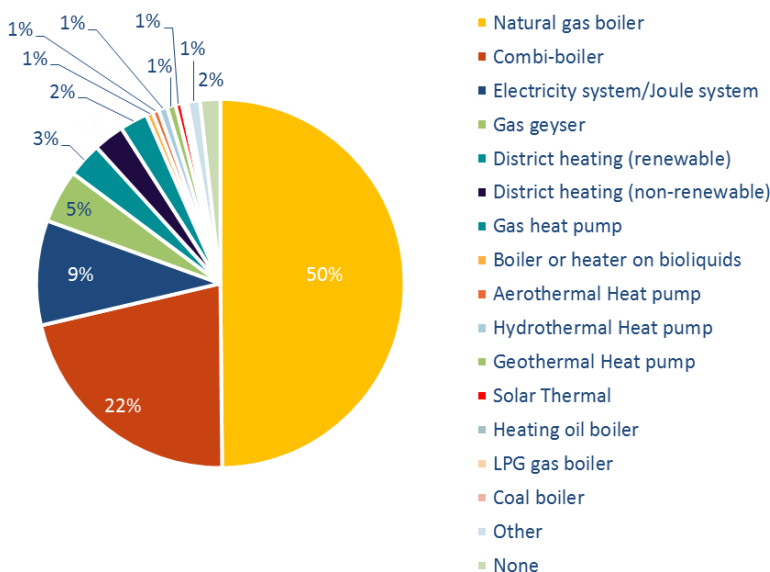
The main heating system used in the Netherlands is by far natural gas boiler (74%). The contribution



of the rest of the sources is very low. There are some electricity systems (5%) and some non-renewable district heating systems (3%). The development of renewables is practically inexistent (3% or lower). In general, there are more centralized systems than individual ones: 77% centralized systems and 20% individual systems. Please note: centralized systems can include one gas boiler per house combined with a water filled radiator system. Only 3% declare not to use any heating system.

Figure 4 Distribution of heating systems in the Netherlands (n=560)

The satisfaction with the heating system is very high (Satisfied – 92%; No answer – 4%; Dissatisfied: 4%). Men are more satisfied with their current heating solution than women. Moreover, people who own an apartment are less satisfied with their heating system than those who live in any other type of dwelling. Also, house owners with a lower household income than the national average (€ 4.825) are less satisfied than those with a higher household income. Users of centralized systems are more



satisfied than those of individual systems. For those respondents satisfied with their heating system the main reason of satisfaction is the ease of use, reliability and safety (54%) and the good levels of comfort (49%). On the other hand, the main reason of dissatisfaction is the low level of comfort (47%) and price of fuel (29%). Due to the low share of house owners who are dissatisfied with its heating system, these motivations should be considered as indicative (n=22).

Figure 5 Distribution of DHW systems in the Netherlands (n=560)

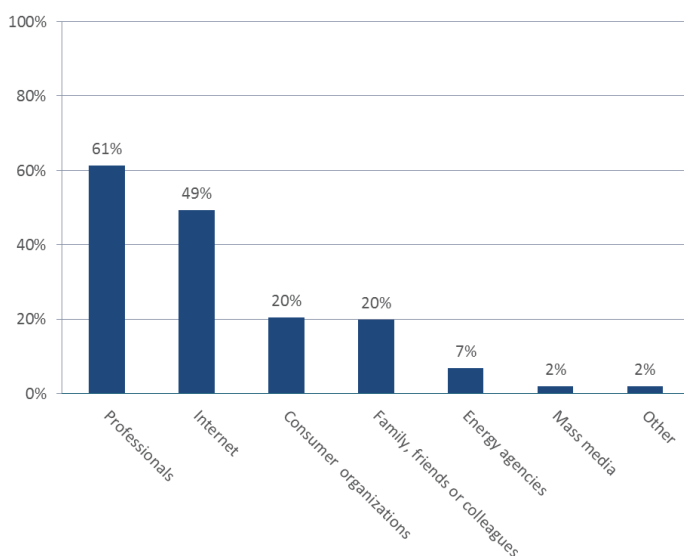
Regarding the Domestic Hot Water systems (DHW), the main used systems are natural gas boilers or combi-boilers (72%). A combi-boiler is a natural gas fired boiler which combines space heating and DHW. This is the most common system in the Netherlands. Presumably some people with a combi-boiler have answered “natural gas boiler” for their DHW supply. Besides that, the share of electricity systems is also substantial (9%). The contribution of renewable energy is relatively low, there are only a few solar installations and biomass boilers for this purpose (2% in both cases). Two per cent declare not to use any DHW systems.

The level of satisfaction among Dutch house owners about their current DHW-systems is, again, high (Satisfied – 92%; No answer – 3%; Dissatisfied: 3%). The main reasons for those who are satisfied are the ease of use, reliability and safety (53%) and the good levels of comfort (45%). Just as for the heating systems, people with a higher household income are more satisfied with their DHW-system than people with a lower household income.

The vast majority of the dwellings in the Netherlands don’t have any cooling system (89%). In five per cent of the Dutch dwellings an electric air conditioning system is installed. This is the main cooling system used in the Netherlands.

The main reason to use the current system in dwellings is mainly because it already existed in the dwelling (68%). Especially for heating and DHW-systems, this is by far the dominant factor for having the current system. Subsequently, 15 per cent of the house owners use their current solutions because they are familiar with the technology. For house owners who are sixty years or older this is a more prominent factor than for younger house owners. Subsidies or beneficial loans and others making the decision for them are very rarely mentioned as important factors (both 1%).

### 4.3 INFORMATION RESOURCES



Regarding the sources to search for information about R&H equipment, house owners mainly rely on the expertise of professionals. Especially those who are older than 40 years old refer to professionals. The internet is also an important source of information. Relatives, friends and colleagues are more important sources for younger (18-40) than for older house owners (40>). Older house owners rely more on consumer and environmental organisations than younger house owners.

Figure 6 *Information resources in the Netherlands (n=560)*



In relative terms, higher educated house owners refer to consumer and environmental organizations more often than lower educated house owners. Moreover, house owners with a household income higher than the national average (€ 4.825,-) rely more on the internet than those who have a lower household income. On the other hand, house owners with a lower household income rather depend on the knowledge of family, relatives and colleagues than those with a higher household income.

#### 4.4 KEY PURCHASING CRITERIA

According to the survey the key purchasing criteria (KPC) for H&C systems in the Netherlands are:

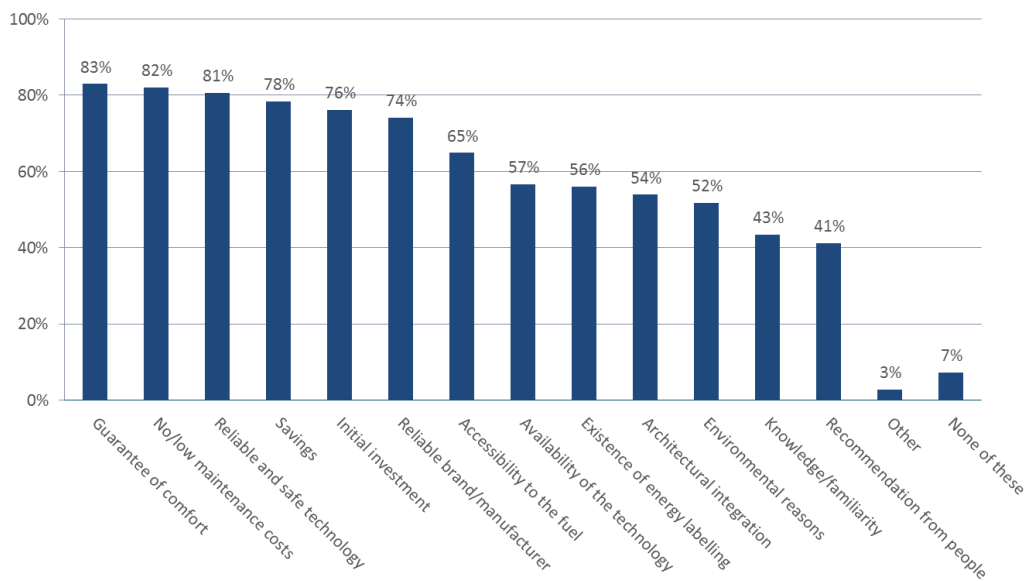


Figure 7 Key purchasing criteria in the Netherlands (n=560)

Comfort, costs and reliability are the main important criteria to choose H&C systems: guarantee of comfort (83%), no or low maintenance costs (82%) and reliable and safe technology (81%) obtain the higher share of the answers. After these, savings (78%), initial investment (76%) and reliability of the brand or manufacturer (74%) are also relevant. Knowledge or familiarity with the technology (43%) and recommendation from other people are relatively less significant for Dutch owners.

The following tables show the Key Purchasing Factors considering the demographical criteria analysed. In general, environmental reasons and the existence of an energy label are more important for women than for men. People of 60 years and older are more concerned about the existence of an energy label than people younger than that. Regarding the level of education, the relative importance of the initial investment is remarkable. On the other hand, this group consider the initial investment less important than the average. People who spend more than 17 hours a day in their dwelling find it more important that the technology has no or low maintenance costs.

KEY DECISION FACTOR	Answers	%	Gender		Age			Level Education			Location of the building				
			Male	Female	18-40	41-60	>61	Low	Middle	High	Cities	Rest west	North	South	East
Guarantee of comfort	464	83%	86%	80%	72%	88%	87%	81%	87%	83%	84%	79%	85%	85%	85%
No/low maintenance costs	459	82%	84%	80%	74%	87%	84%	81%	86%	88%	81%	80%	80%	80%	80%
Reliable and safe technology	452	81%	83%	78%	71%	85%	85%	80%	85%	78%	79%	78%	81%	81%	81%
Savings	439	78%	81%	76%	73%	81%	80%	79%	82%	76%	75%	75%	83%	83%	83%
Initial investment	427	76%	78%	75%	75%	79%	72%	73%	85%	73%	74%	80%	78%	78%	78%
Reliable brand/manufacturer	415	74%	78%	70%	66%	78%	77%	74%	76%	71%	75%	72%	74%	74%	74%
Accessibility to the fuel	363	65%	65%	64%	60%	66%	67%	64%	69%	61%	62%	63%	67%	67%	67%
Availability of the technology	317	57%	60%	53%	51%	57%	63%	56%	60%	41%	54%	61%	60%	60%	60%
Existence of energy labelling	313	56%	49%	63%	50%	59%	58%	61%	50%	55%	59%	48%	58%	58%	58%
Architectural integration	302	54%	51%	57%	46%	57%	57%	55%	56%	63%	50%	59%	48%	48%	48%
Environmental reasons	290	52%	46%	57%	48%	49%	61%	49%	53%	55%	51%	40%	54%	54%	54%
Knowledge/familiarity	243	43%	39%	48%	40%	46%	44%	47%	40%	32%	43%	46%	45%	45%	45%
Recommendation from people	231	41%	39%	43%	43%	40%	41%	41%	42%	32%	40%	38%	45%	45%	45%
Other	41	3%	4%	10%	11%	5%	6%	9%	3%	8%	8%	9%	5%	5%	5%
None of these	16	7%	3%	3%	3%	2%	4%	2%	4%	5%	1%	6%	1%	1%	1%

KEY DECISION FACTOR	Type of building			N° Bedrooms				Level occupation			Income average	
	Apartment	Row house	Detached	1	2	3	>3	<12h	12-16h	>17h	Higher	Lower
Guarantee of comfort	84%	85%	88%	55%	76%	83%	87%	74%	84%	84%	88%	79%
No/low maintenance costs	84%	82%	85%	62%	76%	83%	84%	73%	79%	86%	85%	80%
Reliable and safe technology	81%	84%	85%	55%	75%	81%	84%	76%	81%	81%	85%	78%
Savings	82%	81%	78%	55%	72%	80%	80%	77%	78%	79%	81%	77%
Initial investment	78%	79%	80%	56%	68%	77%	79%	75%	77%	76%	78%	75%
Reliable brand/manufacturer	74%	78%	77%	62%	67%	78%	74%	69%	76%	74%	75%	73%
Accessibility to the fuel	65%	71%	66%	35%	53%	67%	69%	67%	66%	63%	66%	64%
Availability of the technology	54%	61%	65%	17%	54%	60%	57%	51%	59%	56%	58%	56%
Existence of energy labelling	61%	49%	53%	50%	48%	60%	55%	51%	58%	56%	53%	58%
Architectural integration	53%	61%	52%	28%	51%	57%	54%	56%	54%	53%	56%	52%
Environmental reasons	52%	57%	50%	29%	49%	54%	52%	56%	49%	53%	51%	52%
Knowledge/familiarity	44%	43%	43%	31%	35%	50%	41%	47%	47%	40%	41%	45%
Recommendation from people	45%	38%	37%	36%	44%	45%	37%	46%	41%	40%	45%	39%
Other	5%	4%	10%	31%	10%	7%	5%	12%	8%	6%	4%	9%
None of these	4%	1%	1%	-	5%	4%	1%	5%	2%	3%	2%	3%

## 4.5 AWARENESS ABOUT RES

48% of the survey respondents have heard about the use of RES in heating, domestic hot water and cooling systems. Women have heard less about RES than men. The following tables show the knowledge about RES, considering the characteristics of the sample. The deviation of each characteristic compared with the distribution of the number of answers is shown:

	Answers	%	Gender		Age			Level Education			Location of the building				
			Male	Female	18-40	41-60	>60	Prim. Edu	Sec Edu	Sup Edu	Cities	Rest west	North	South	East
YES	269	48%	59%	37%	40%	45%	62%	38%	40%	62%	49%	49%	41%	54%	45%
NO	291	52%	41%	63%	60%	55%	38%	62%	60%	38%	51%	51%	59%	46%	55%

	Answers	%	Type of building				N° Bedrooms				Level occupation			Income average	
			Apartment	Row house	Detached house	Semi-detached house	1	2	3	>3	<12h	12-16h	>17h	Higher	Lower
YES	269	48%	43%	45%	60%	49%	18%	46%	44%	54%	42%	49%	49%	56%	43%
NO	291	52%	57%	55%	40%	51%	82%	54%	56%	46%	58%	51%	51%	44%	57%

The known technologies for those who have heard about RES (48%) of the survey respondents are represented in the following tables:

TECHNOLOGY	HEATING/DHW	COOLING
Solar Thermal	95%	24%
Geothermal	74%	29%
Heat pump (renewable)	72%	39%
Biomass	69%	17%
Renewable District heating	69%	16%

## 4.6 PERCEPTION OF RES ATTRIBUTES

The perception of RES attributes by those survey respondents who have heard about RES (48%) is shown in the following table:

ATTRIBUTE	RENEWABLES	%	NON-RENEWABLES	%
Higher initial investment	221	82%	8	3%
Higher operation costs (maintenance and fuel)	59	22%	143	53%
Higher savings along the life expectancy of equipment	196	73%	22	8%
More eco-friendly	231	86%	11	4%
Higher working reliance	83	31%	65	24%
Higher visual impact and/or need of space to install/store fuel	116	43%	40	15%
Safer	75	28%	43	16%
More specialized installers	62	23%	83	31%

The respondents consider that renewable technologies have higher investments, lower operation costs, are more eco-friendly and higher savings along the life expectancy. Besides, the respondents consider the visual impact or storage space to be higher for renewable systems than for non-renewable ones.

Higher educated owners and those with a higher household income match higher initial investments more with renewable technologies than lower educated owners and owners with a lower household income. Those with a lower income, moreover, think renewable technologies have a visual impact and are safer than owners with a higher household income.

### 4.7 ADEQUACY OF RES

In the question about the most suitable renewable energy technology to incorporate in their houses, 13% of the respondents who know about RES do not consider any renewable energy technology for heating and DHW systems in their dwellings. Demographically, no clear differences are visible. Regarding the incorporation of RES in cooling systems, 50% does not consider any. Again the socio-demographic characteristics are not influential.

The main reasons for the rejection of the use of RES for heating or DHW systems are: the structural changes needed in the dwelling (72%) and the initial investment (64%). Figure 8 shows the share of the rest of the reasons.

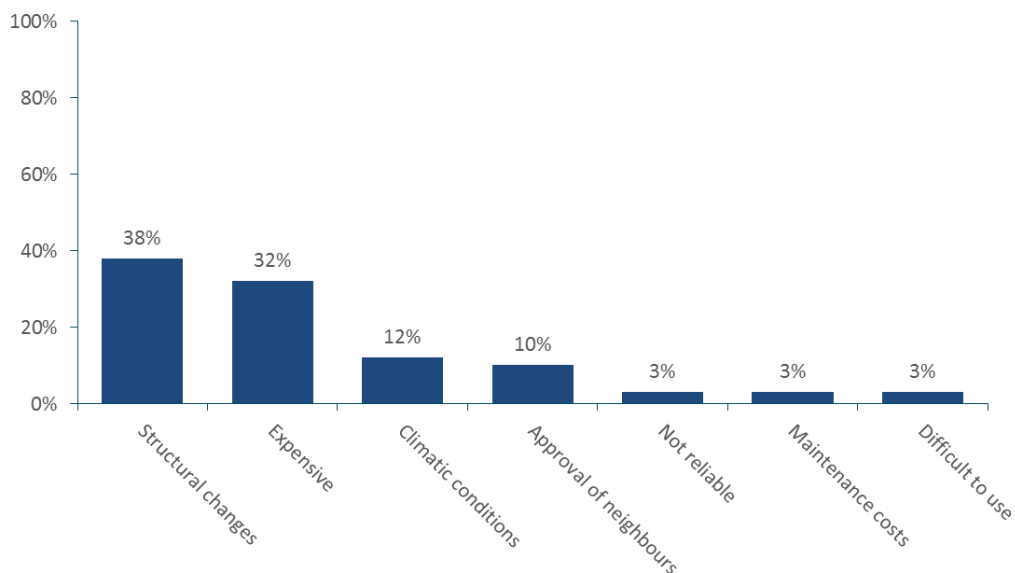
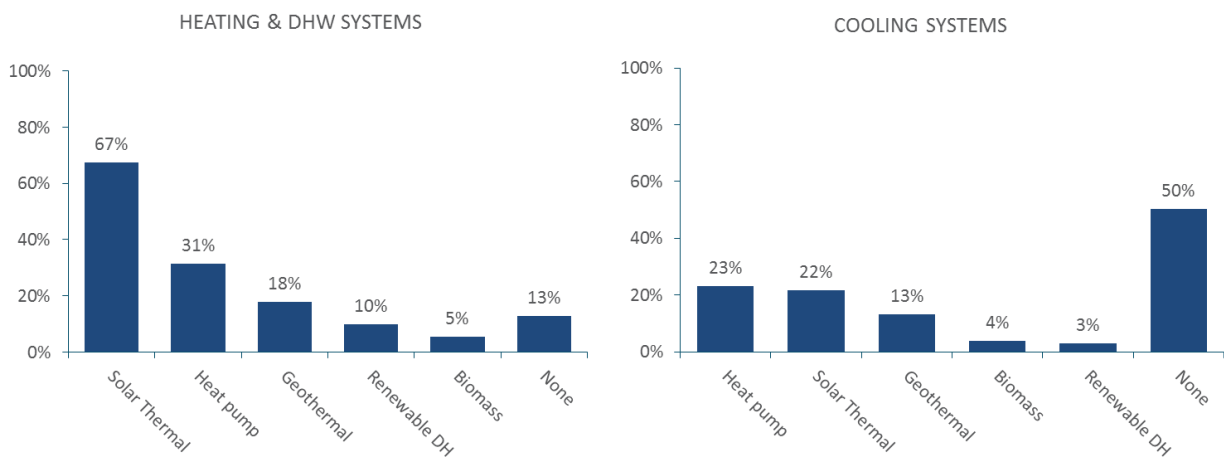


Figure 8 Reason for the rejection of RES in the Netherlands (n=34)

87% of the respondents who know about RES consider the installation of some RES technologies for heating or DHW systems. According to the results the favourite technology is solar (67%). Figure 9 depicted the considered technologies for heating, DHW and cooling systems in the Netherlands. The preference of solar thermal energy follows a distribution similar to the average. In the case of biomass and geothermal energy, it is preferred by people from rural areas.

50% of the respondents who have heard about RES consider the installation of some RES technologies for cooling systems. Heat pumps (23%) and solar thermal (22%) are the preferred systems for Dutch respondents.

Figure 9 Considered RES technologies for heating, DHW (n=265) and cooling systems (n=34)



#### 4.8 WILLINGNESS TO PAY MORE

To the question: “Considering that fuel costs are lower in all renewable energies, but initial investments tend to be higher, would you be willing to make a higher initial investment to use renewable energy?” 61% the respondents who have heard about RES are willing to pay more money, 14% won’t and 25% did not know.

In general, higher educated owners are more willing to pay more than lower educated owners. Moreover, owners who have a higher household income than the national average are more willing to make an initial investment than those who have a lower household income than the national average.

The majority of those of those willing to pay more for renewable technologies said to be willing to invest between 5 and 25 per cent more initially.

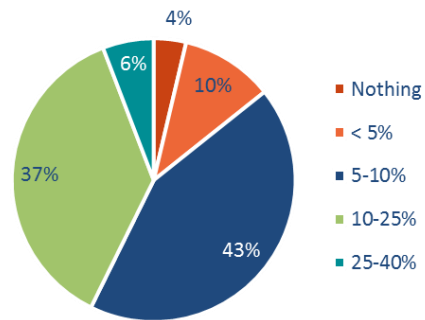


Figure 10 Willingness to pay for RES technologies (n=157).

## 5. SURVEY ON THE NON-RESIDENTIAL SECTOR

The flow diagram in the execution of the survey is shown in Figure 11 and 12.

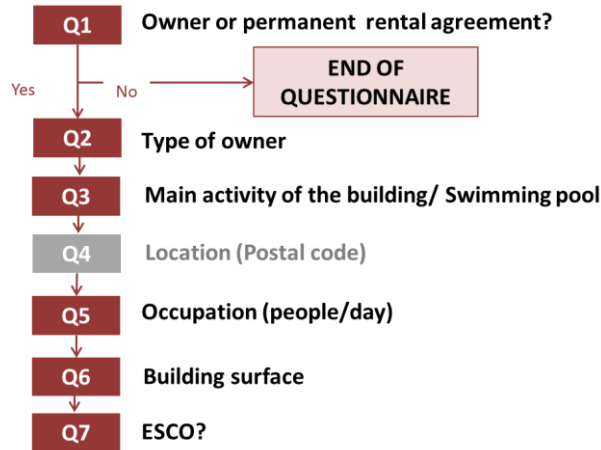


Figure 11 Characterization of the sample

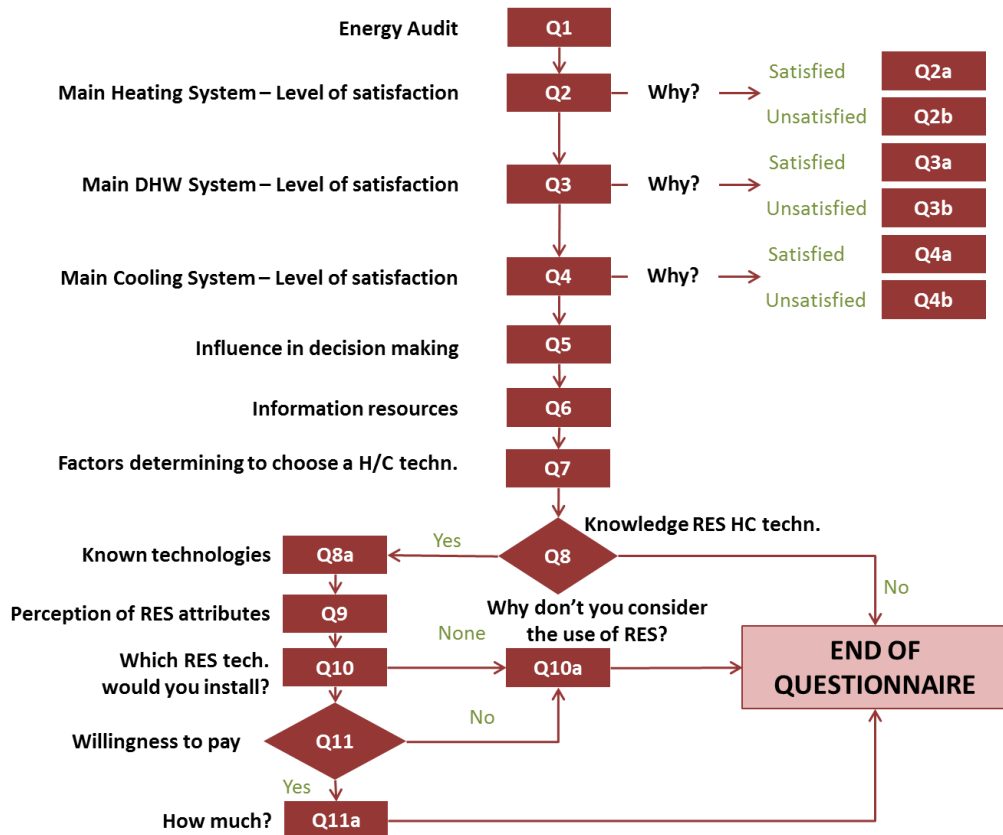


Figure 12 Flow diagram to follow in questionnaires – non-residential sector.

## 5.1 MAIN CHARACTERISTICS OF THE SAMPLE

In the Netherlands, 17 interviews were executed in the non-residential sector out of 85 contacts in total. Although a response of 20% is quite standard when it comes to online surveys with client samples, the number of completes is rather disappointing. During the fieldwork two reminders as well as motivational calls have been executed to advance the eventual response. Therefore, the description of the results of the survey is rather concise. Because of the low number of completes, the results presented in this section should be considered as indicative.

The sample mainly consisted of 13 managers of public buildings and 4 managers of private buildings. 8 managers of educational buildings, 3 managers of office buildings, 1 manager of a health centre and 5 managers of other non-residential buildings participated in the survey.

## 5.2 HEATING, DHW AND COOLING SYSTEMS

Natural gas boilers are the main heating system used in non-residential buildings. After that, non-renewable district heating systems are used by 18 per cent of non-residential buildings.

Most respondents use their current system because it already existed (24%) or due to a variety of other reasons (42%).

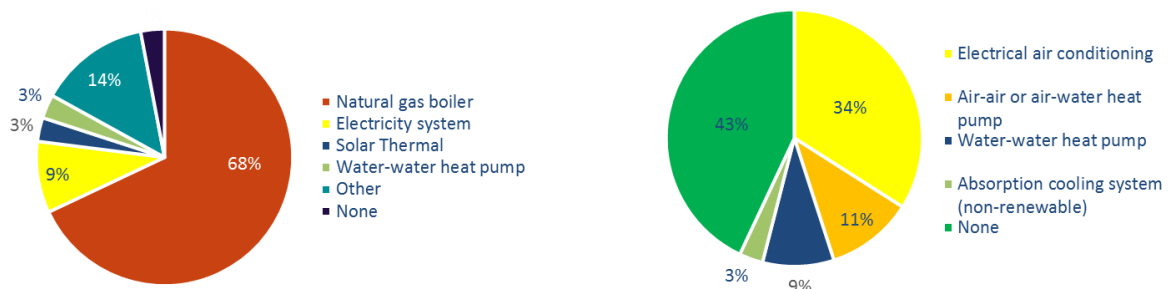


Figure 13 The current heating (left) and cooling (right) used by the non-residential sector (n=17)

The dominant DHW-systems used are natural gas boilers (29%) and electrical or joule systems (29%). Owners of non-residential buildings use their current DHW-system because it is easy to use, reliable and safe (69%).

As far as cooling systems are concerned, non-residential buildings most often have an electrical air conditioning installed. 59 per cent of the respondents declare to manage such a system. Approximately a quarter of the non-residential buildings have a water-water heat pump. Managers of non-residential buildings mainly use their current cooling system because of it was already installed (31%).

For all three types of systems applies that sixteen out of seventeen managers of non-residential buildings are satisfied with their current solutions.



### 5.3 INFORMATION RESOURCES

Managers of non-residential buildings mainly refer to professionals, such as sales agents, installers, manufacturers, architects and engineers, in case they would have to purchase new heating and cooling equipment for their non-residential buildings. Colleagues and managers of similar buildings are also frequently consulted.

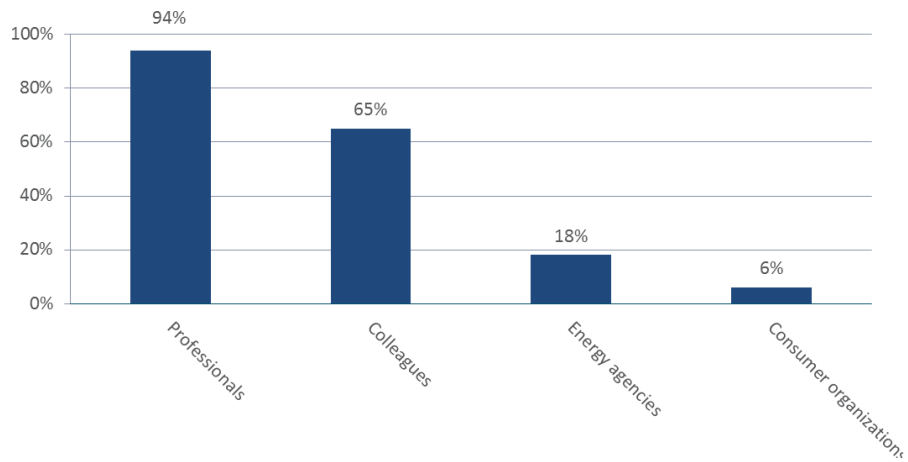


Figure 14 Main sources of information when purchasing new heating/cooling equipment (n=17)

### 5.4 KEY PURCHASING CRITERIA

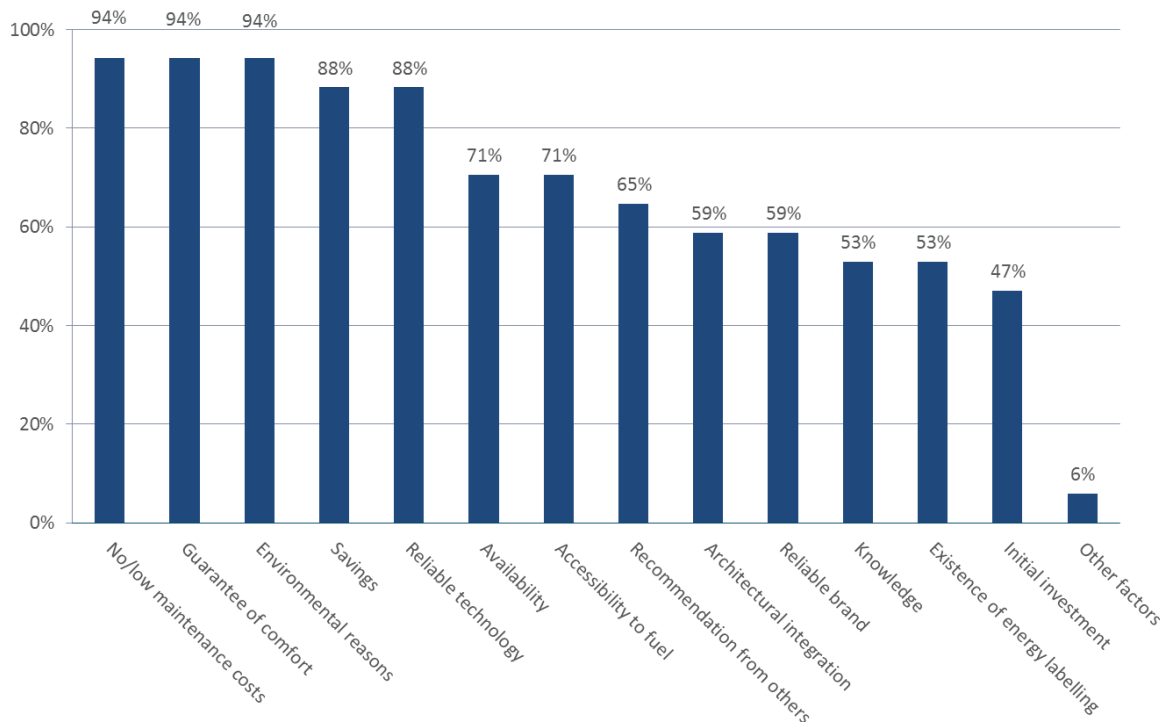


Figure 15 Key purchasing criteria for new heating and cooling equipment (n=17)

No or low maintenance costs, guarantee of comfort and environmental reasons are the most important purchasing criteria when it comes to energy solutions. The initial investment is relatively less significant for managers of non-residential buildings.

## 5.5 AWARENESS ABOUT RES

71 per cent of the managers of non-residential buildings have heard about RES in heating and cooling systems. Most managers have heard about renewable solutions for heating systems.

TECHNOLOGY	HEATING	COOLING
Biomass	82%	18%
Solar Thermal	100%	29%
Heat Pump (Renewable)	88%	88%
Geothermal	71%	29%
District cooling (Renewable)	82%	18%

## 5.6 PERCEPTION OF RES ATTRIBUTES

The perception of RES attributes by those in the non-residential sector who have heard about RES (71%) is shown in the following table:

ATTRIBUTE	RENEWABLES	%	NON-RENEWABLES	%
Higher initial investment	13	87%	1	7%
Higher operation costs (maintenance and fuel)	4	27%	10	67%
Higher savings along the life expectancy of equipment	14	93%	1	7%
More eco-friendly	15	100%	0	0%
Higher working reliance	5	33%	4	27%
Higher visual impact and/or need of space to install/store fuel	7	47%	2	13%
Safer	4	27%	2	13%
More specialized installers	5	33%	7	47%

## 5.7 ADEQUACY OF RES

Every respondent finds at least one of the proposed renewable heating solutions appropriate for the building(s) they are representing. The renewable heat pump is considered most by managers of non-residential buildings.

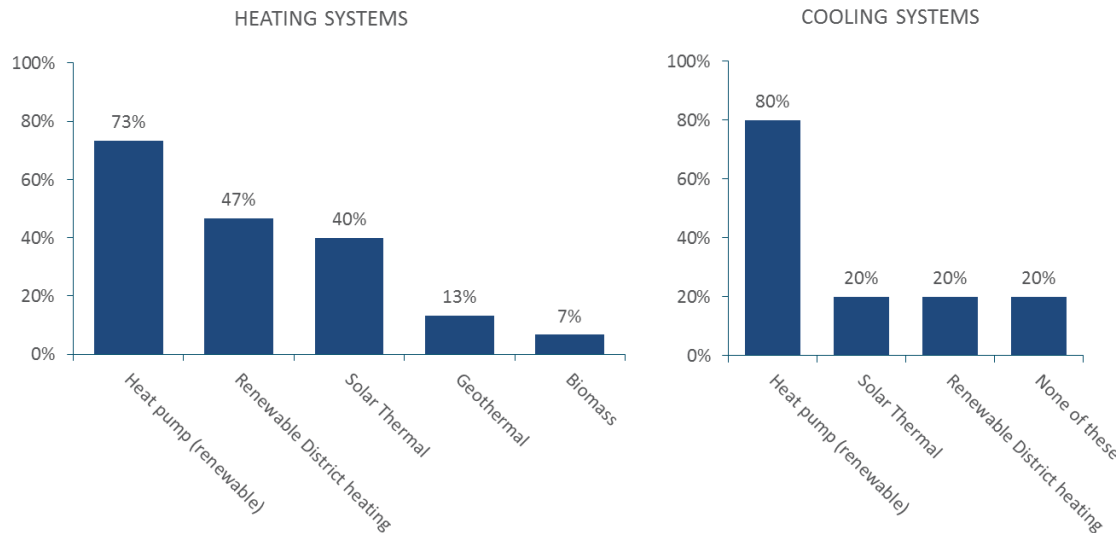
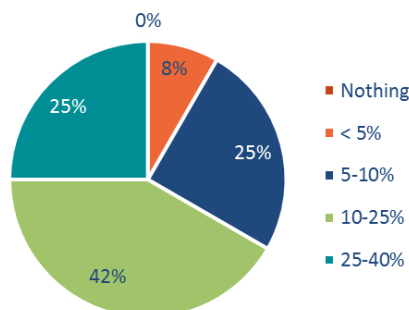


Figure 16 Considered RES technologies for heating (n=15) and cooling systems (n=15) in the industry sector.

If respondents consider one of the renewable cooling systems as appropriate, the renewable heat pump is preferred most (80%). This is also the case for DHW-systems: 73 per cent consider the renewable heat pump as most favourable.

## 5.8 WILLINGNESS TO PAY MORE



Amongst the twelve managers of non-residential buildings who have heard of RES and are willing to make a higher initial investment (71%), most respondents (42%) are willing to pay 10-25 per cent more for RES.

Figure 17 Willingness to pay for RES technologies (n=12)

## 6. SURVEY ON THE INDUSTRIAL SECTOR

The flow diagram in the execution of the survey is shown in Figure 18 and 19.

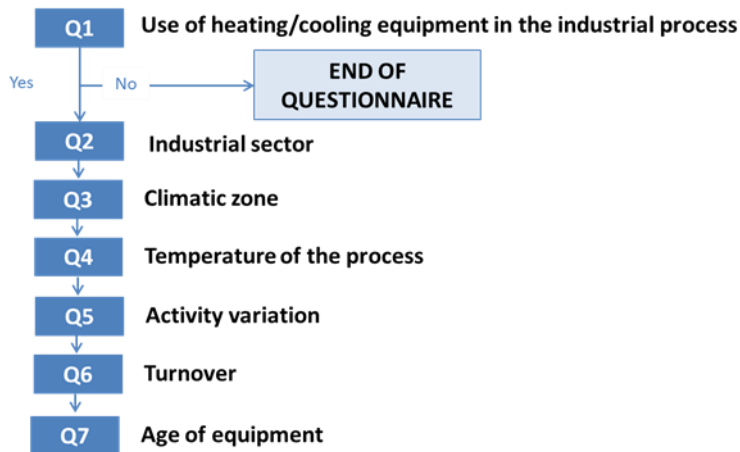


Figure 18 *Characterization of the sample*

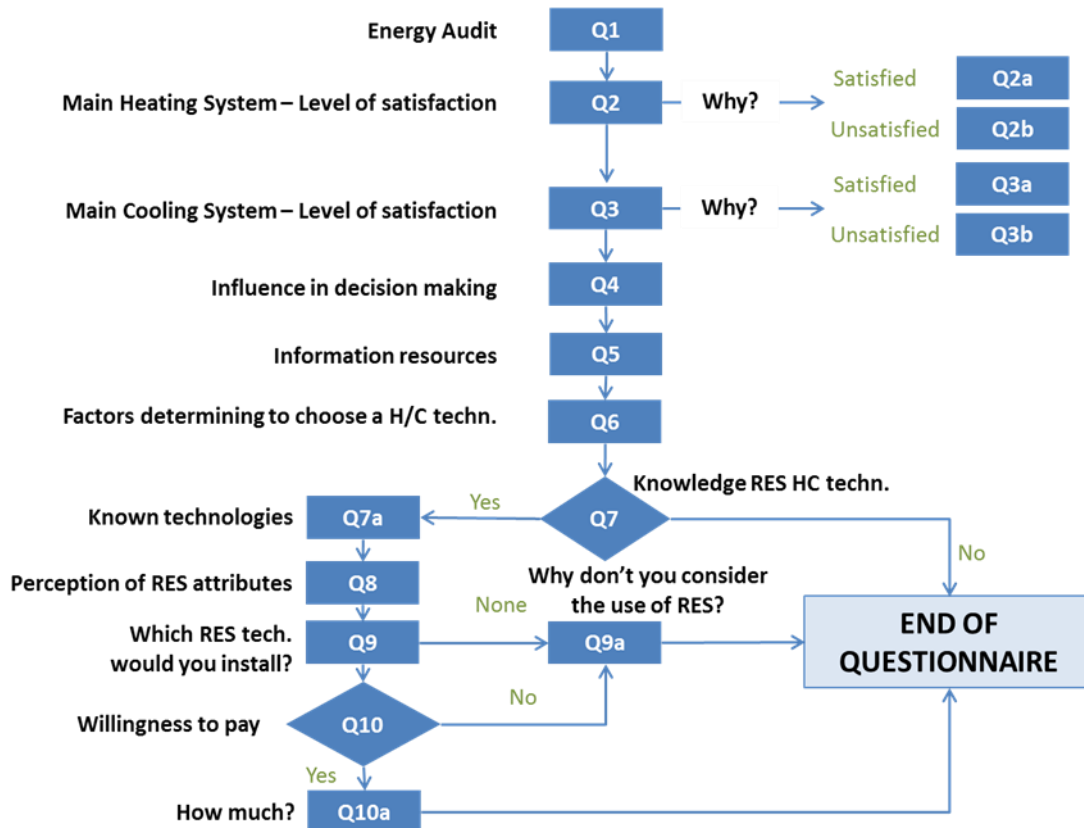


Figure 19 *Flow diagram to follow in questionnaires – industrial sector.*

## 6.1 MAIN CHARACTERISTICS OF THE SAMPLE

Out of 263 industrial contacts, 35 have completed the survey. Again, this response (13%) is quite normal compared to other online surveys with client samples. Like the non-residential sector, reminders and motivational calls have been executed to increase the response. Therefore, again, the description of the results of the survey is rather concise. Because of the low number of completes, the results presented in this section should be considered as indicative.

The distribution over the different industries is as follows:

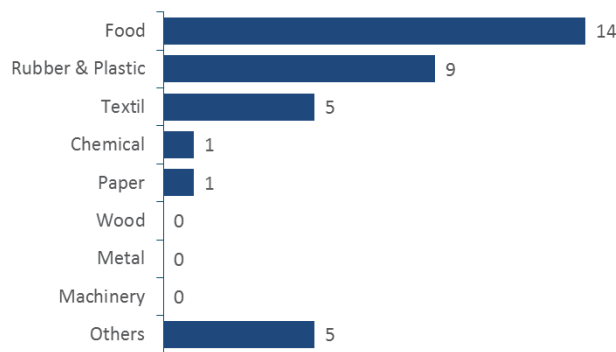


Figure 20 Industries in the sample (n=35)

## 6.2 HEATING AND COOLING SYSTEMS

Natural gas boilers are the main heating system used in industrial processes. After that, electrical systems are used by 9 per cent of the industries.

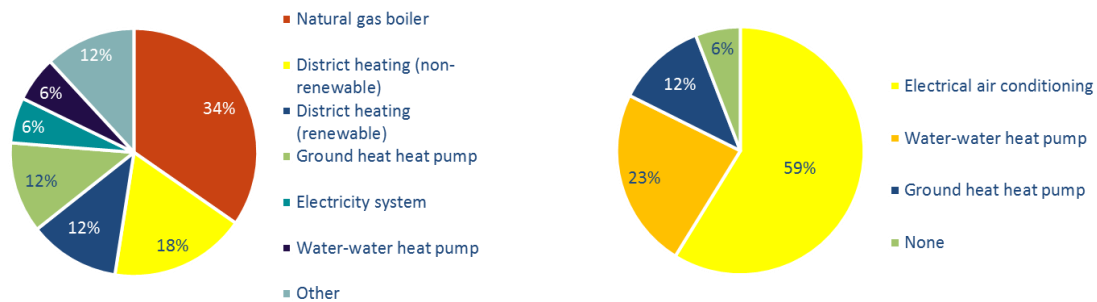


Figure 21 The current heating (left) and cooling (right) used by the industries (n=35)

Cooling systems are not that common in industrial processes. 43 per cent of the respondents say no cooling system is used in industrial processes. Approximately one out of three energy coordinators uses electrical air conditioning as main process cooling system.

### 6.3 INFORMATION RECOURSES

Energy coordinators in the industrial sector mainly refer to professionals, such as sales agents, installers, manufacturers, architects and engineers, in case they would have to purchase new heating and cooling equipment for their industrial process. Consumer organizations and mass media are never consulted.

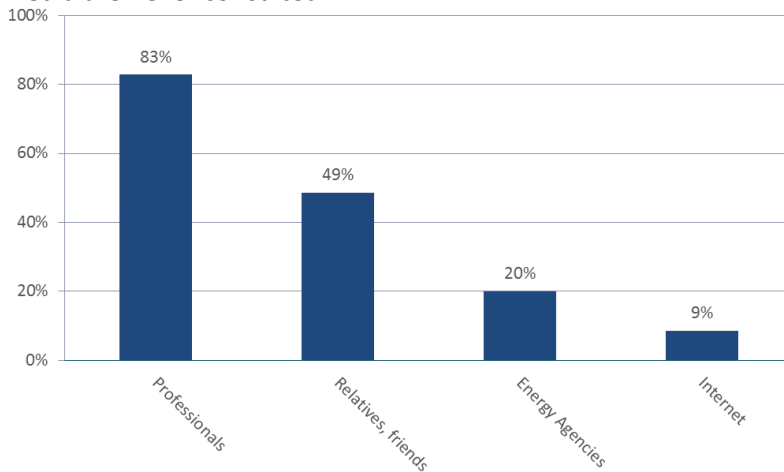
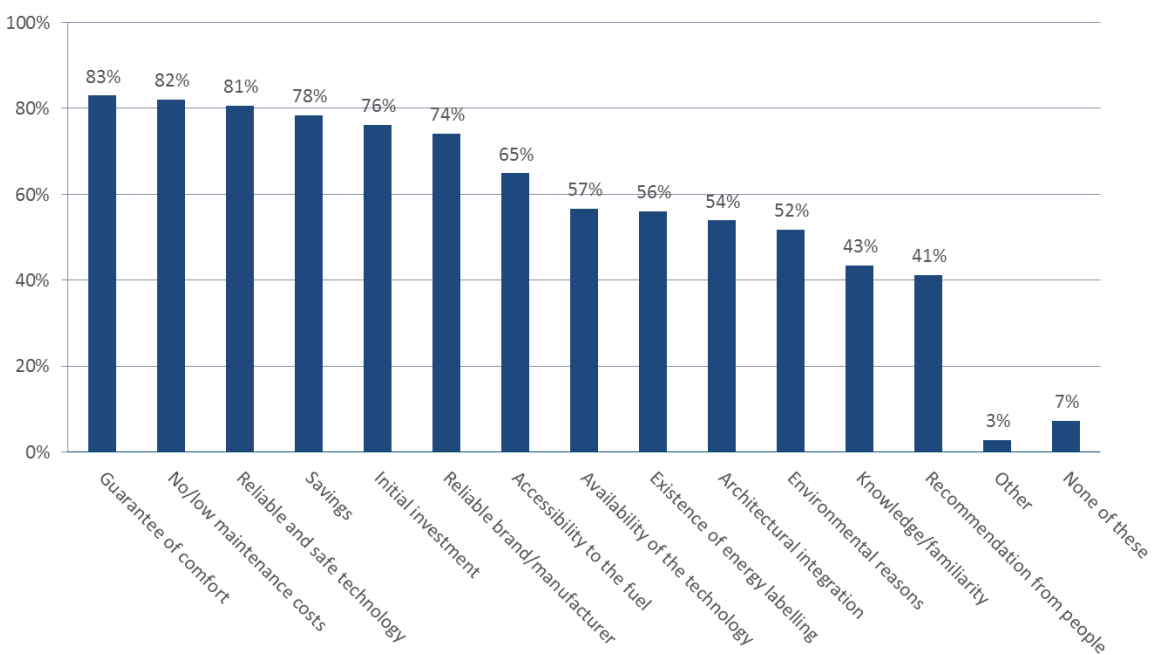


Figure 22 Main sources of information when purchasing new heating/cooling equipment (n=35)

### 6.4 KEY PURCHASING CRITERIA

Savings and reliability of the technology are the most important purchasing criteria when it comes to energy solutions. Knowledge/familiarity with the technology, architectural integration and existence of energy labelling are less significant for energy coordinators.

Figure 23 Key purchasing criteria for new heating and cooling equipment (n=35)



## 6.5 KNOWLEDGE ABOUT RES

71 per cent of the managers of industrial buildings have heard about RES in heating and cooling systems.

TECHNOLOGY	HEATING	COOLING
Biomass	80%	12%
Solar Thermal	88%	16%
Heat Pump (Renewable)	80%	64%
Geothermal	76%	52%
District Heating (Renewable)	56%	12%

## 6.6 PERCEPTION OF RES ATTRIBUTES

The perception of RES attributes by those survey respondents who have heard about RES (71%) is shown in the following table:

ATTRIBUTE	RENEWABLES	%	NON-RENEWABLES	%
Higher initial investment	20	80%	2	8%
Higher operation costs (maintenance and fuel)	3	12%	16	64%
Higher savings along the life expectancy of equipment	14	56%	8	32%
More eco-friendly	25	100%	0	0%
Higher working reliance	4	16%	9	36%
Higher visual impact and/or need of space to install/store fuel	6	24%	5	20%
Safer	6	24%	2	8%
More specialized installers	3	12%	8	32%

## 6.7 ADEQUACY OF RES

76 per cent of the respondents find at least one of the proposed renewable heating solutions appropriate for their industrial process. When it comes to heating systems, the renewable heat pump is considered to most suitable.

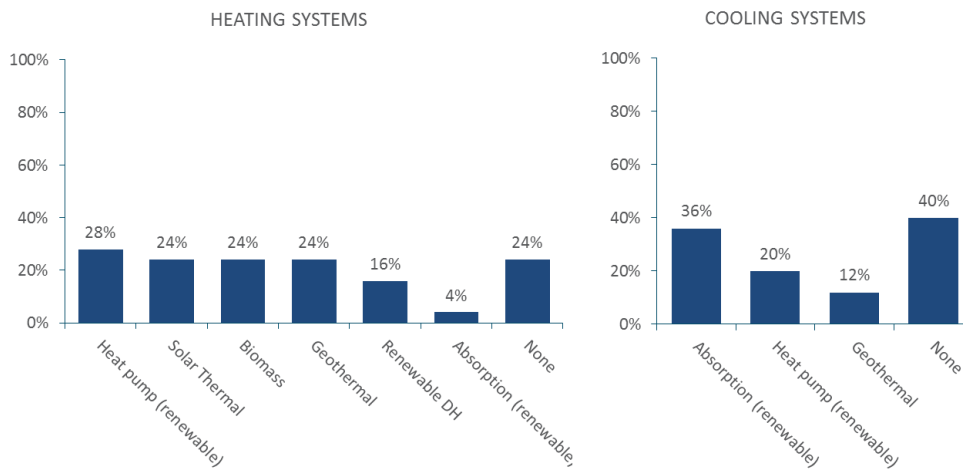


Figure 24 Considered RES technologies for heating (n=25) and cooling systems (n=25) in the industry sector.

As far as cooling systems is concerned, 40 per cent of the managers of industrial buildings do not consider any renewable solution appropriate for their industrial process. If respondents consider one of the RES as appropriate, the absorption system is preferred most (38%).

The main reasons for rejecting RES in industrial buildings are the high costs of the technology and the difficulty of using the technology.

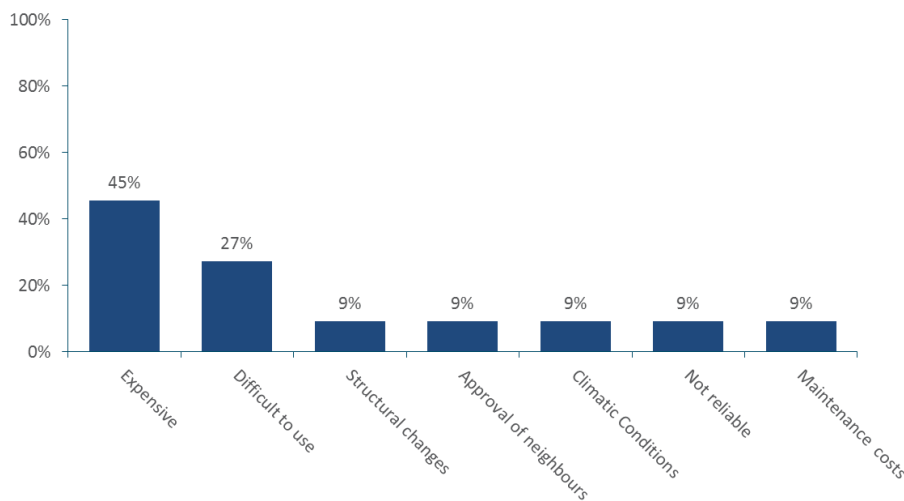


Figure 25 Reasons for the rejection of RES in heating and DHW systems in the industrial sector in the industrial sector



## 6.8 WILLINGNESS TO PAY MORE

Most of the energy coordinators in the industrial sector who are willing to make a higher initial investment for RES (46%), most of them (37%) would pay between 5 and 10 per cent more.

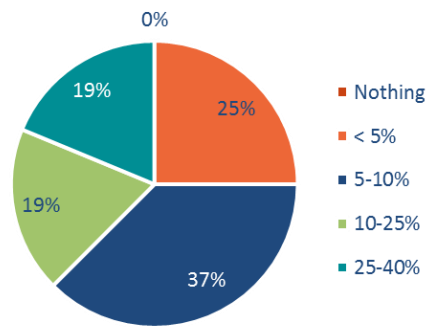
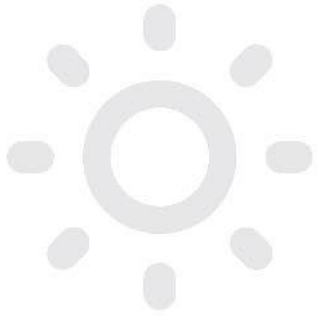


Figure 26 *Willingness to pay more for RHC in industrial sector.*

The logo features several icons: a sun, a jagged line graph, a house, a cloud, a tree, and a power plug.

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