

Renewable Energy in the Heating Sector

Source: Federal Office of Economics and Export Control

https://www.bafa.de/DE/Energie/Heizen_mit_Erneuerbaren_Energien/Programm_bis_2019/programm_bis_2019_node.html#doc13402384bodyText10

Transfer the following verbal description into a BPMN:

- a) Upon realizing that Heating with renewable Energy is required by a Natural/Legal Person from the Federal Office of Economics and Export Control, the heating method have to be decided on.
- b) At this point, the natural/legal person has to differentiate if he requires heating up to and including 100 kilowatts of nominal heat output (Option A) or heating up to and including 100 square meters of collector area (Option B).
- c) For Option A, the natural/legal person may either heat using biomass plants or heat using heating pump systems.
- d) In the case of heating with biomass plants, the biomass plants have to be decided on (taking in consideration Funding guidelines & requirements).
On deciding on the biomass plant, the natural/legal person may either choose the boiler for burning biomass pellets and wood chips, the combination boiler for burning biomass pellets or wood chips and firewood, pellet stoves with water pocket, a retrofit system with a device for calorific value or a retrofit system with a dust reduction device.
- e) After deciding on the biomass plant, the funding option have to be selected. At this point two options are available which are: Fund plants in existing buildings or Fund plants in new buildings.
- f) The natural/legal person can further choose for the first option (fund plants in existing buildings) either basic funding or additional funding (taking also in consideration the funding guidelines & requirements)
- g) The basic funding can be chosen if a heating system is already available and also installed for at least two years (existing building). At this point a common risk may occur in that, the heating system is missing/Heating system is installed for less than two years, which will in result not meet the basic funding requirements.
After that the biomass plant for the basic funding has to be selected. Biomass plant options are the following: selecting the wood chip boiler with buffer storage, the pellet boiler with new buffer storage, the pellet stove with water pocket or the log wood gasification boiler with buffer storage. After selecting the biomass plant and meeting the requirements at this step, basic funding as a result is chosen.
- h) The additional funding, on the other hand, can be chosen by the natural/legal person and is further divided in four types.
The first type is to receive a combination bonus for biomass systems. In order to receive this bonus, a simultaneous establishment of an eligible solar thermal or heat pump system and a connection of the biomass plant to a heating network are needed.
The second type is to receive a building efficiency bonus. At this point, the natural/legal person will receive 50% of the basic funding. In order to receive this 50%, bonus, the system must be built in an efficient residential building (part of the building stock), the building must meet the requirements for a KfW Efficiency House 55 and an Online Confirmation from an approved expert have to be submitted.
The third type is to receive investment grants for optimization measures. In this step the natural/legal person will receive an optimization bonus.
The fourth type is to receive an incentive program for energy efficiency (APEE). In this program,

inefficient old systems will be replaced with modern heating systems and as a result, the natural/legal person will receive an optimization for the entire heating system.

- i) Combining all four types, will result in choosing additional funding.
- j) The second funding option (Option B) is to fund plants in new building. At this point the natural/legal person will receive support for the construction/retrofitting of biomass plants.
- k) Support devices in this area are: Condensing technology (exhaust gas heat exchanger) and dust reduction (particle separator).
- l) For option A, if the natural/legal person decides to heat using heating pump systems, he has also to decide first on the heat pump. At this point he may either choose combined water heating and space heating of buildings, exclusive room heating of buildings, exclusive space heating of non-residential buildings or provision of heat for heating networks.
- m) For Option B, if the natural/legal person requires heating up to and including 100 square meters of collector area, he has to heat using solar thermal systems. At this point the solar thermal system required for heating has to be decided on, which can be the following: choosing exclusive water heating, exclusive space heating, combined water and space heating, supply of heat in heating networks, supply in cold in cooling networks or choosing solar refrigeration.
- n) After deciding on the heat pump and the solar thermal system, both options can be combined (Loop), to select the funding option.
- o) The natural/legal person here again can choose to fund plants in existing buildings or in new buildings.
- p) As for fund plants in existing buildings, two options are further available which are: Option A – Basic & Additional Funding and Option B – Innovation & Additional Funding.
- q) For Option A: the natural/legal person is to receive basic funding upon to the requirements: Heating System available and heating system installed for at least two years (existing building). Again here a common risk may occur in that, the heating system is missing/heating system installed for less than two years.
- r) For Option B: the natural/legal person is to receive innovation funding upon to the requirements: Heat pumps with high annual performance figures and heat pumps with improved system efficiency are existing.
- s) Both options (A & B) can be combined again to receive additional funding, which are further divided into 5 types.

The first type is to receive a combination bonus for efficient heat pumps upon to the requirements: simultaneous establishment of an eligible solar thermal or biomass plant, simultaneous construction of a solar collector system and connection of the heat pump to a heating network. Common risks in receiving the combination bonus are that, heat pumps being not connected to a heating network and solar collector system missing. For the second requirement: “Simultaneous construction of a solar collector system”, the natural/legal person has to further meet the requirements for the construction which are: Gross collector area being at least 7 m² and contribution as a heat source for the heat pump existing. Common risk in this point is again: Gross collector area being less than 7 m².

The second type is to receive load management capability fund, at which the system interfaces enables the heat pump. The natural/legal person has to meet the requirements at this point which are: Simultaneous construction of a storage facility with a volume of at least 30 liters per kilowatt and existing “Smart Grid Ready” certificate or a manufacturer’s declaration (Requirements met).

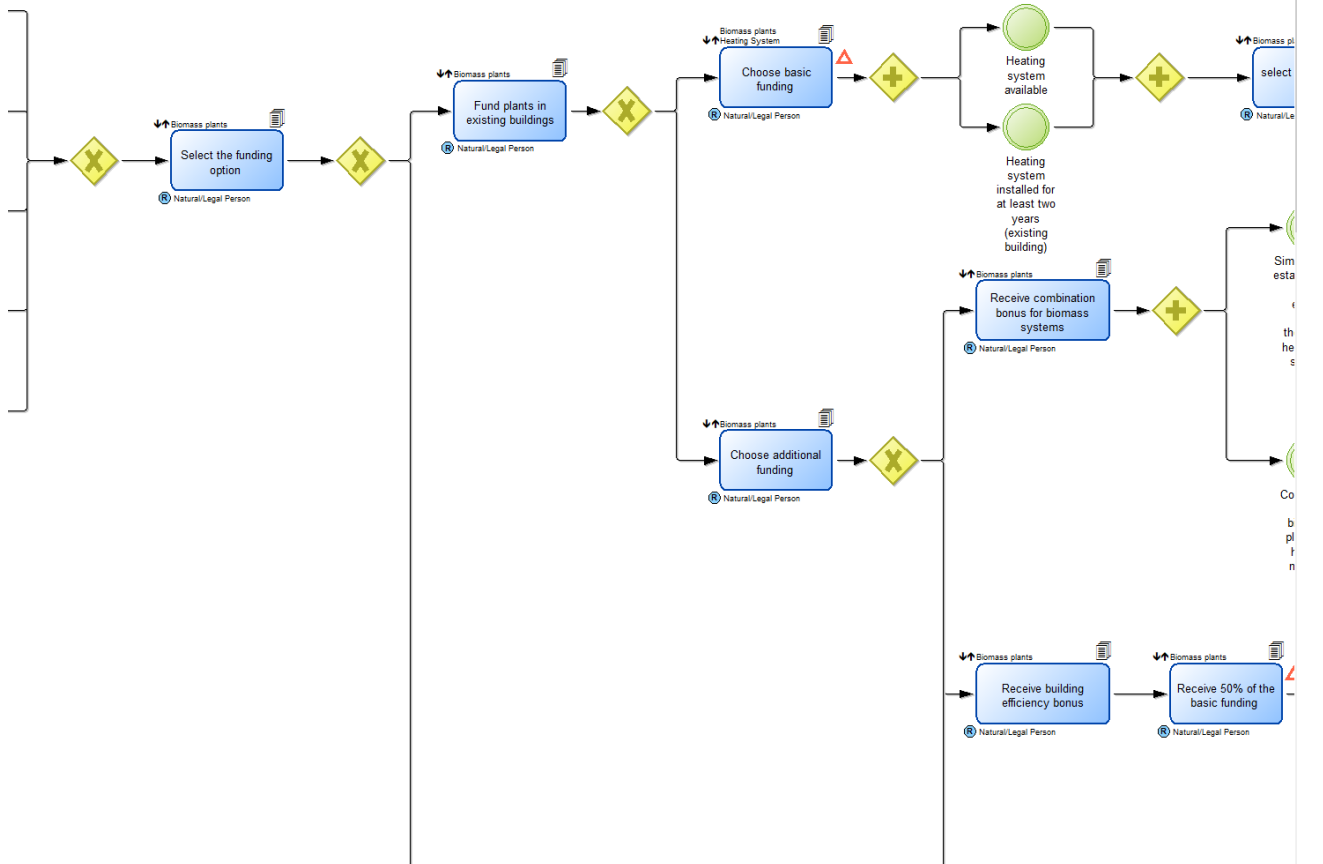
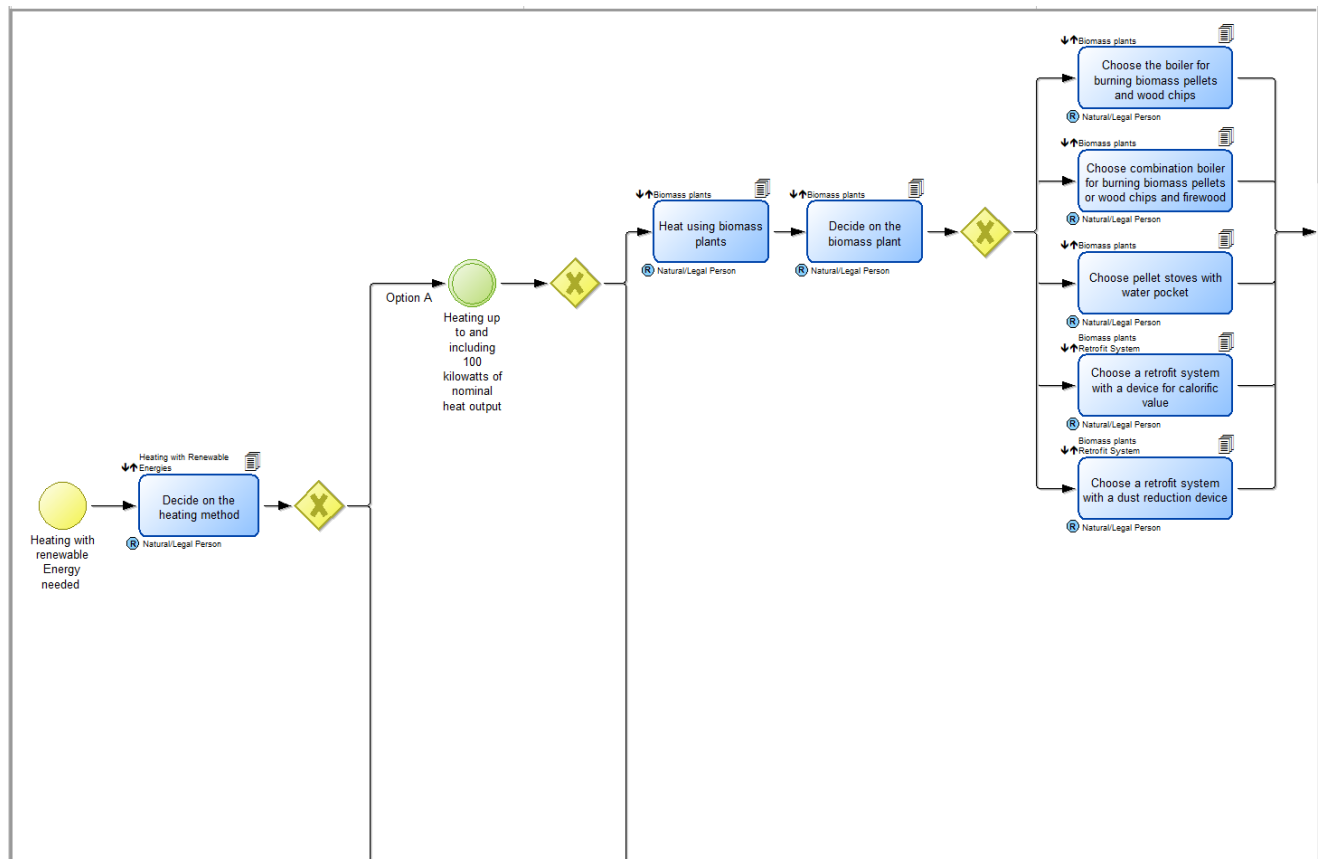
The third type is to receive building efficiency bonus, for which the natural/legal person will receive 50% of the basic funding upon to the requirements: System built in an efficient residential building (part of the building stock), Building meets the requirements for a KfW Efficiency House 55 and Online Application form an approved expert submitted. Common risk in

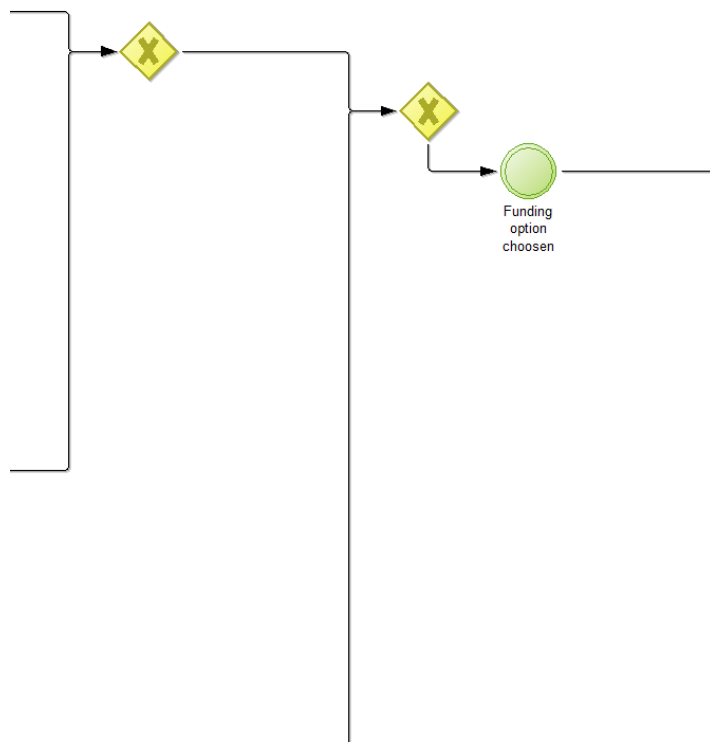
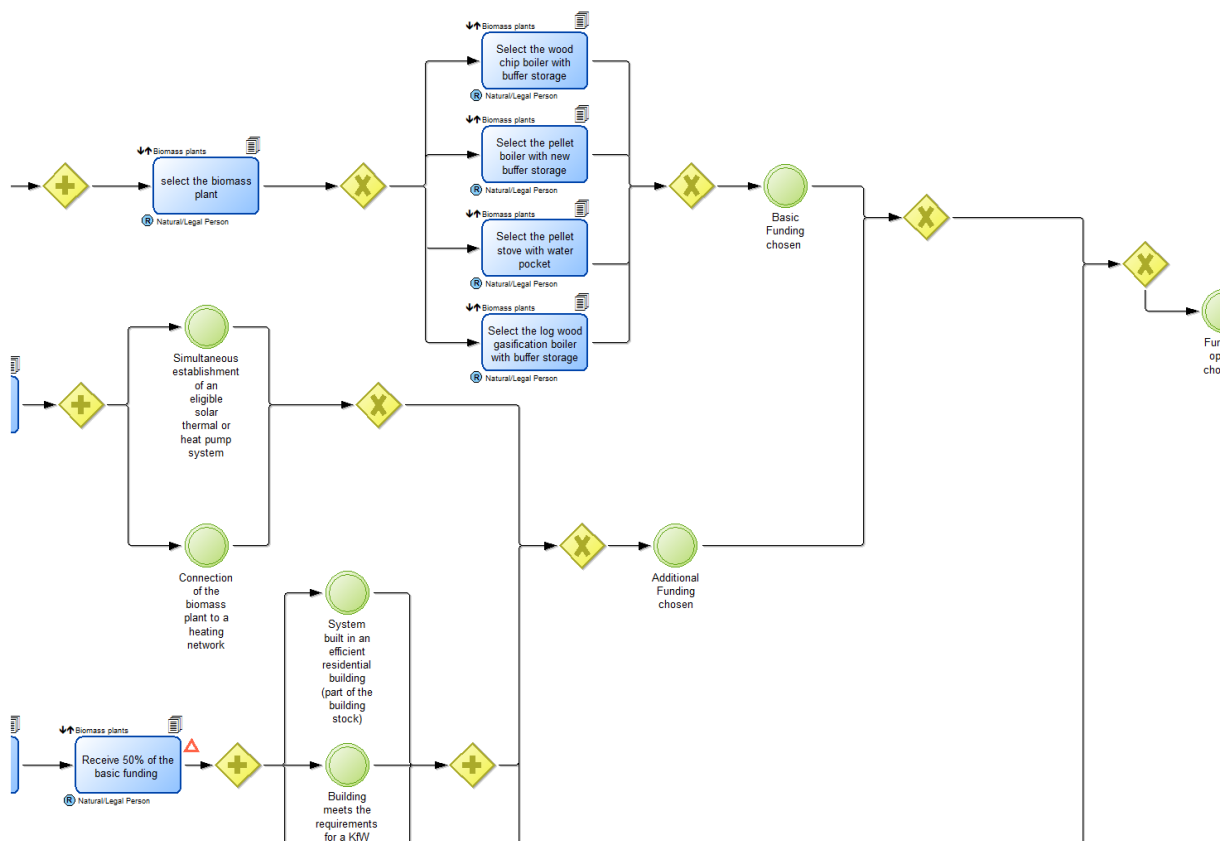
this step that the building does not meet the KfW Efficiency House 55 Requirements.

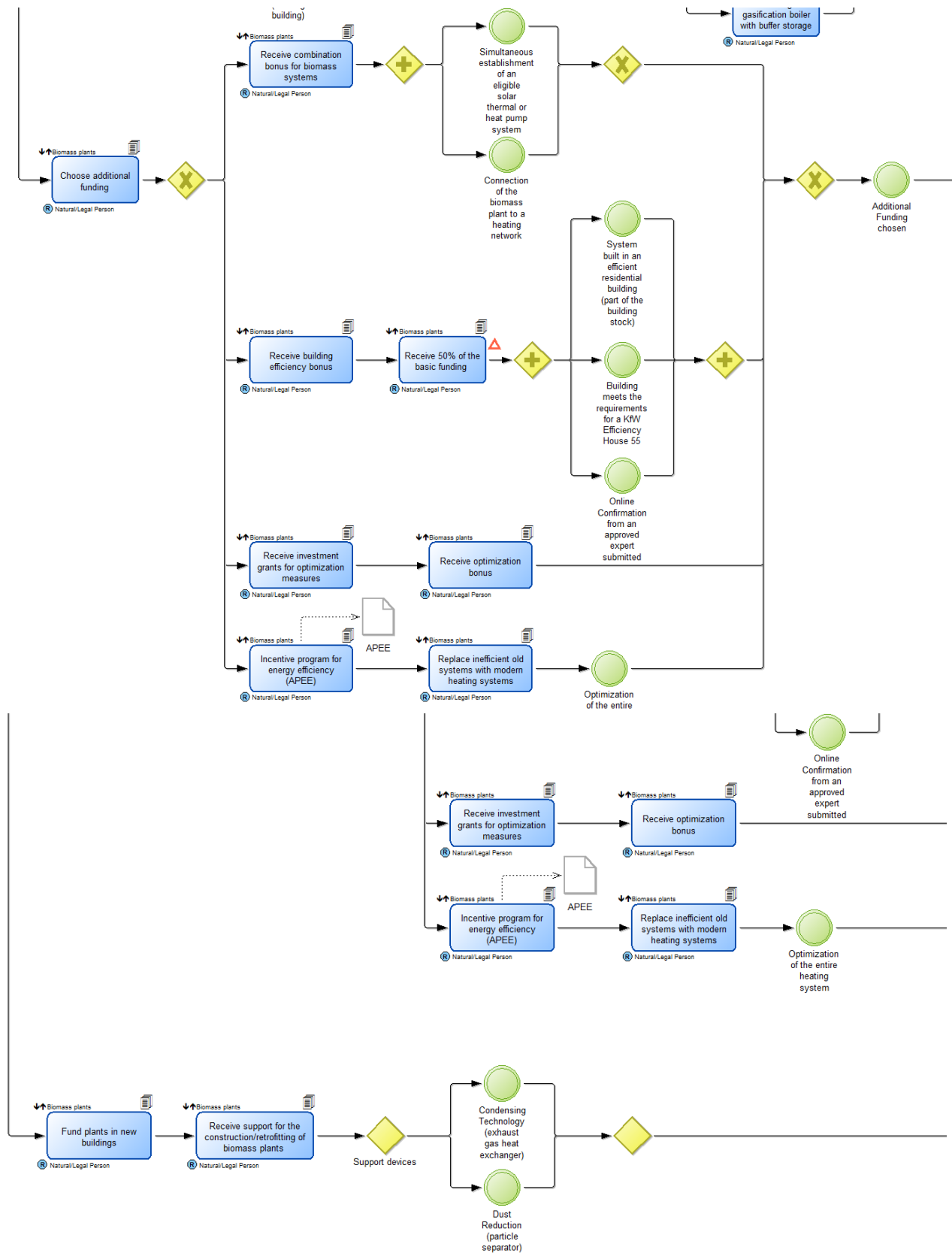
The fourth option is to receive investment grants for optimization measures. In this step, the natural/legal person will receive optimization bonus

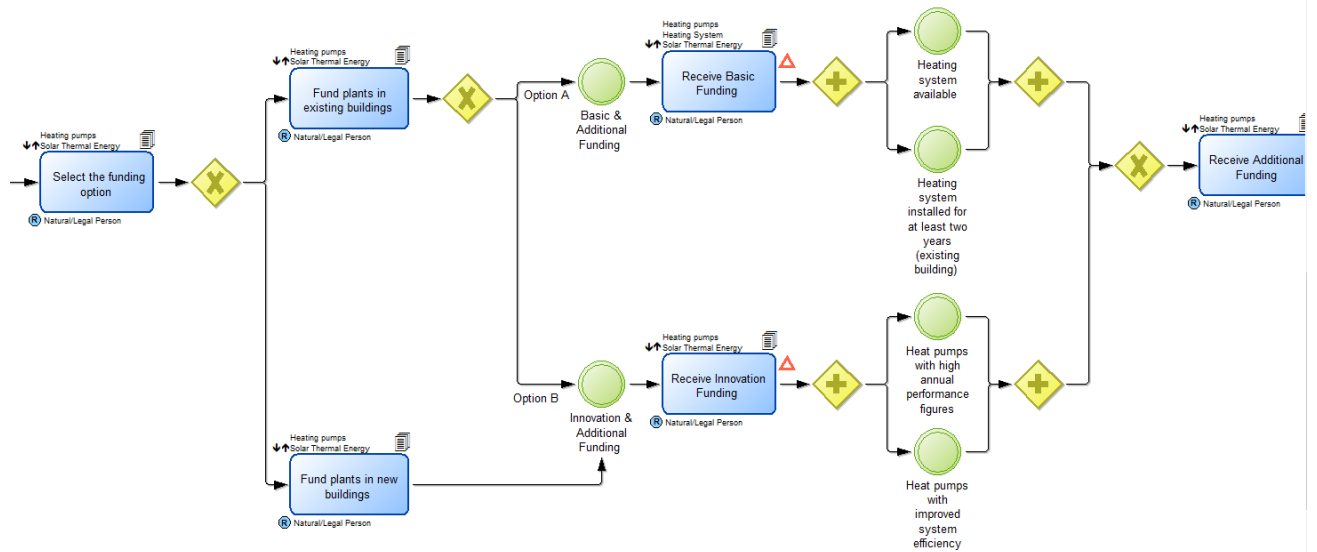
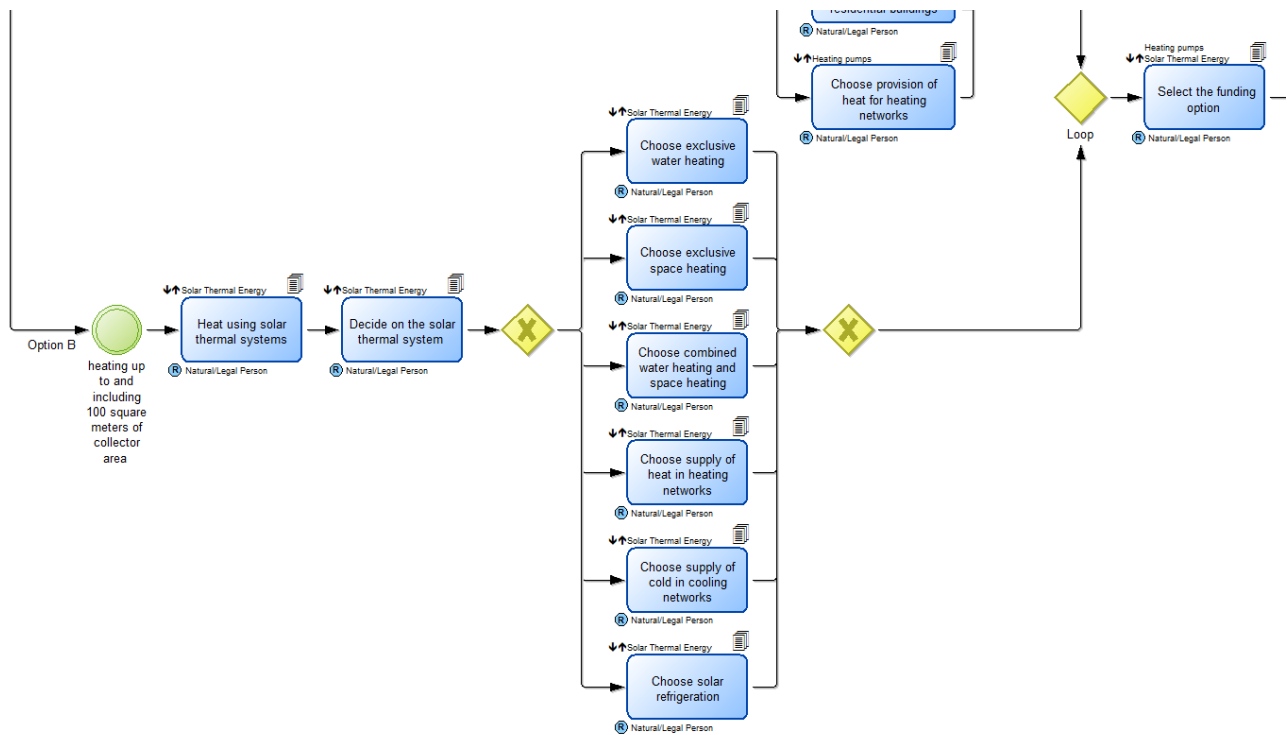
The fifth option is to receive an incentive program for energy efficiency (APEE). In this program, inefficient old systems are replaced with modern heating systems and as a result, the natural/legal person will receive an optimization of the entire heating system.

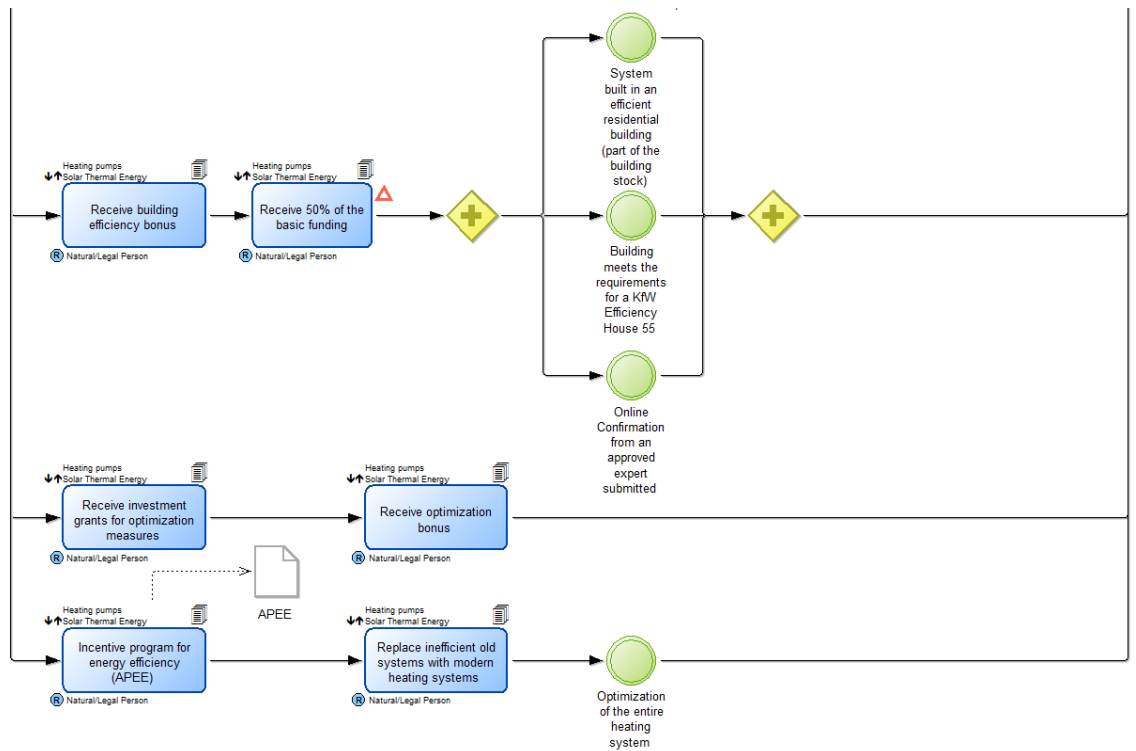
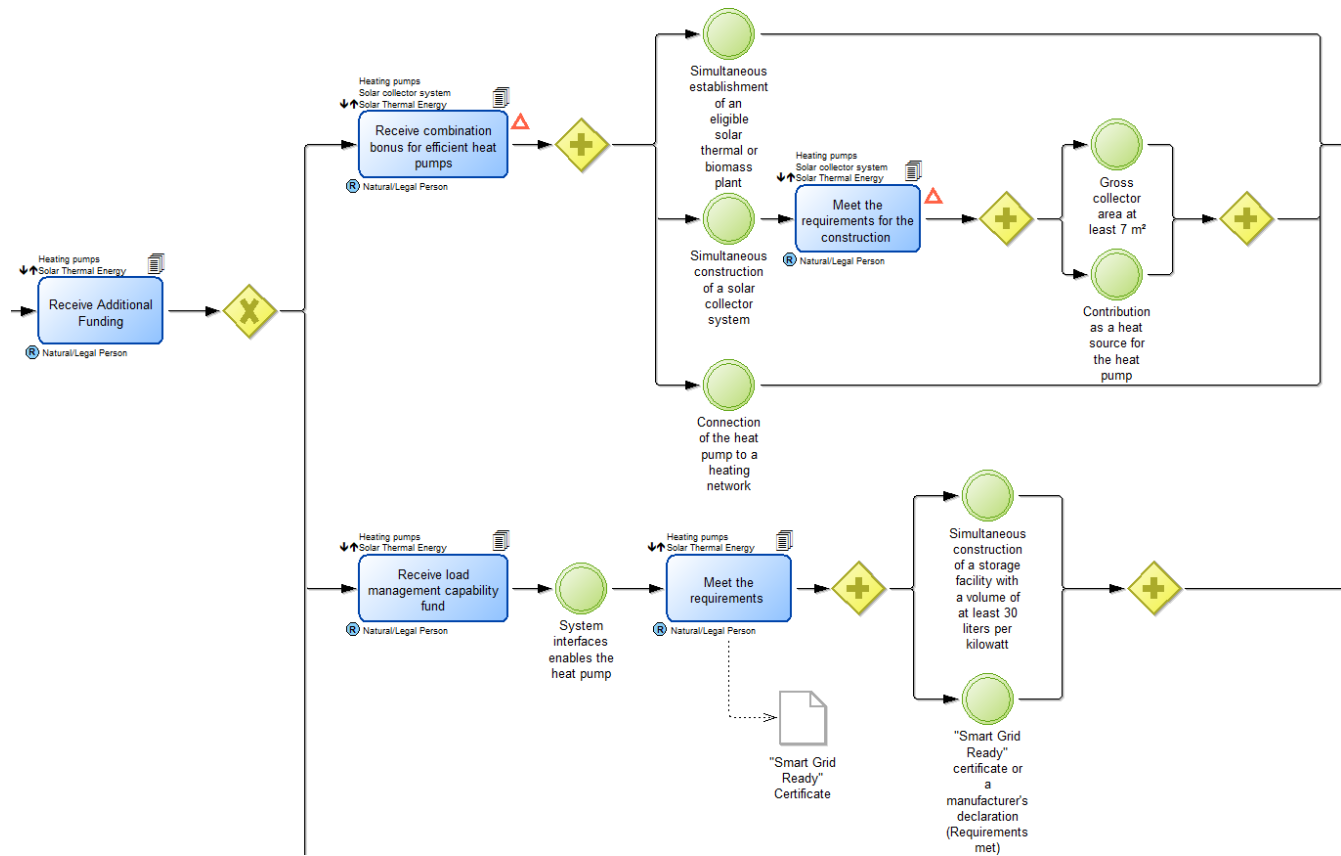
- t) Combining all three heating methods, the contractor has to fill in the heat funding application (Online Application Heating Method).
- u) The first step in filling the online application is to enter the data. At this stage the contractor has to enter the following data at the same time: specify information on data protection law, specify the information about the start of the project, define the details of the applicant person, specify the information about the location of the plant & the building, specify the information about the planned heating measure, specify the information about the type of funding (Basic funding, Additional funding or Innovation Funding), enter personal explanations for the planned measure and submit declaration of consent for electronic communication.
- v) For the point define details of the applicant person, "Individual defined", "Freelance person defined", "Company defined", "Contractor defined", "Local Authorities defined" "Companies in which the majority of municipalities are involved", "Registered association defined", "Schools and Churches defined" or "Agriculture, forestry and horticulture defined" can be selected.
- w) In specifying the information about the location of the plant & the building, the contractor has to define the type of old heating and also define the date of installation of the heating system at the same time. An Incoming Cross-reference risk in these two steps is: Heating system being less than two years installed.
- x) For the point define the type of old heating, "Oil/Gas Heating defined", "Night Storage Heater defined", "Single Oven defined", "Biomass Plant defined", "Heat Pump defined", "District Heating Connection defined", or "Coal Heating defined" may be selected.
- y) In the next step, all entered data have to be combined so that the contractor checks the entered data.
- z) After checking the entered data, he can upload the required files and confirm the data. As a result the Online Application is filled and the contractor can submit the application. Finally the Heating with renewable Energy application is successfully submitted.

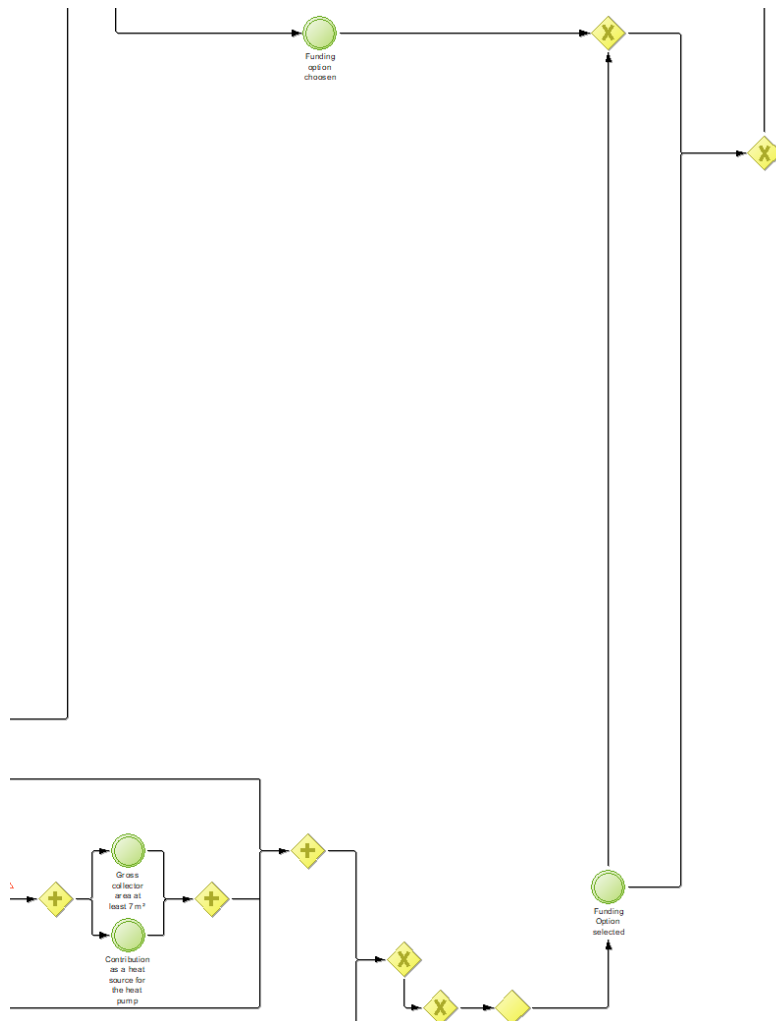
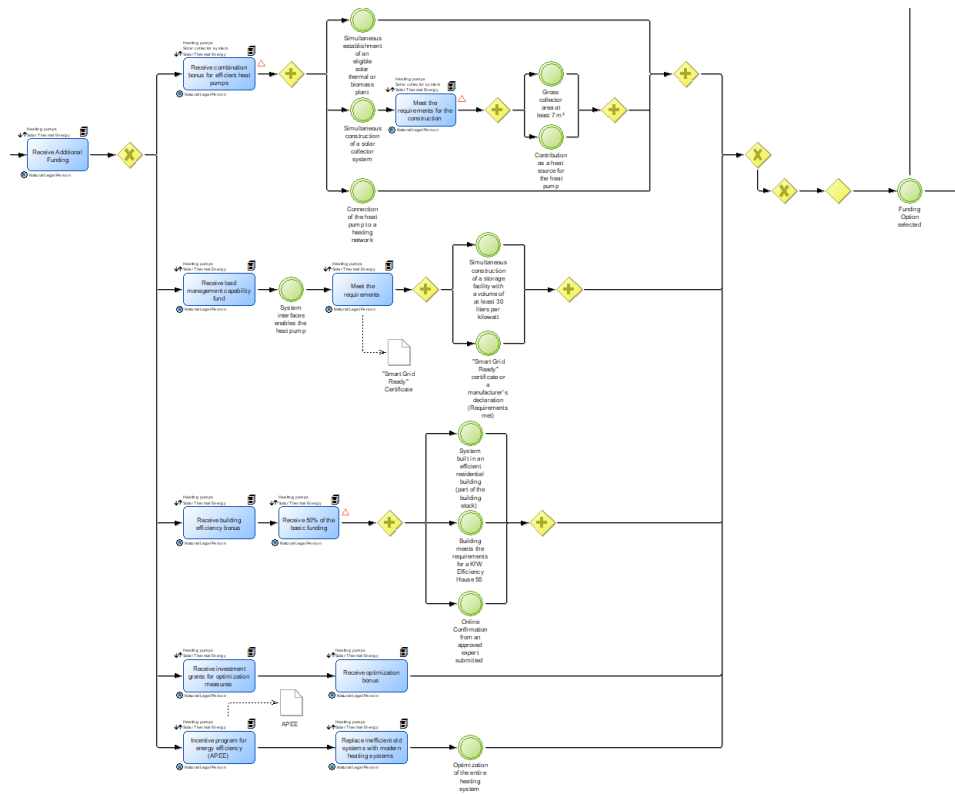


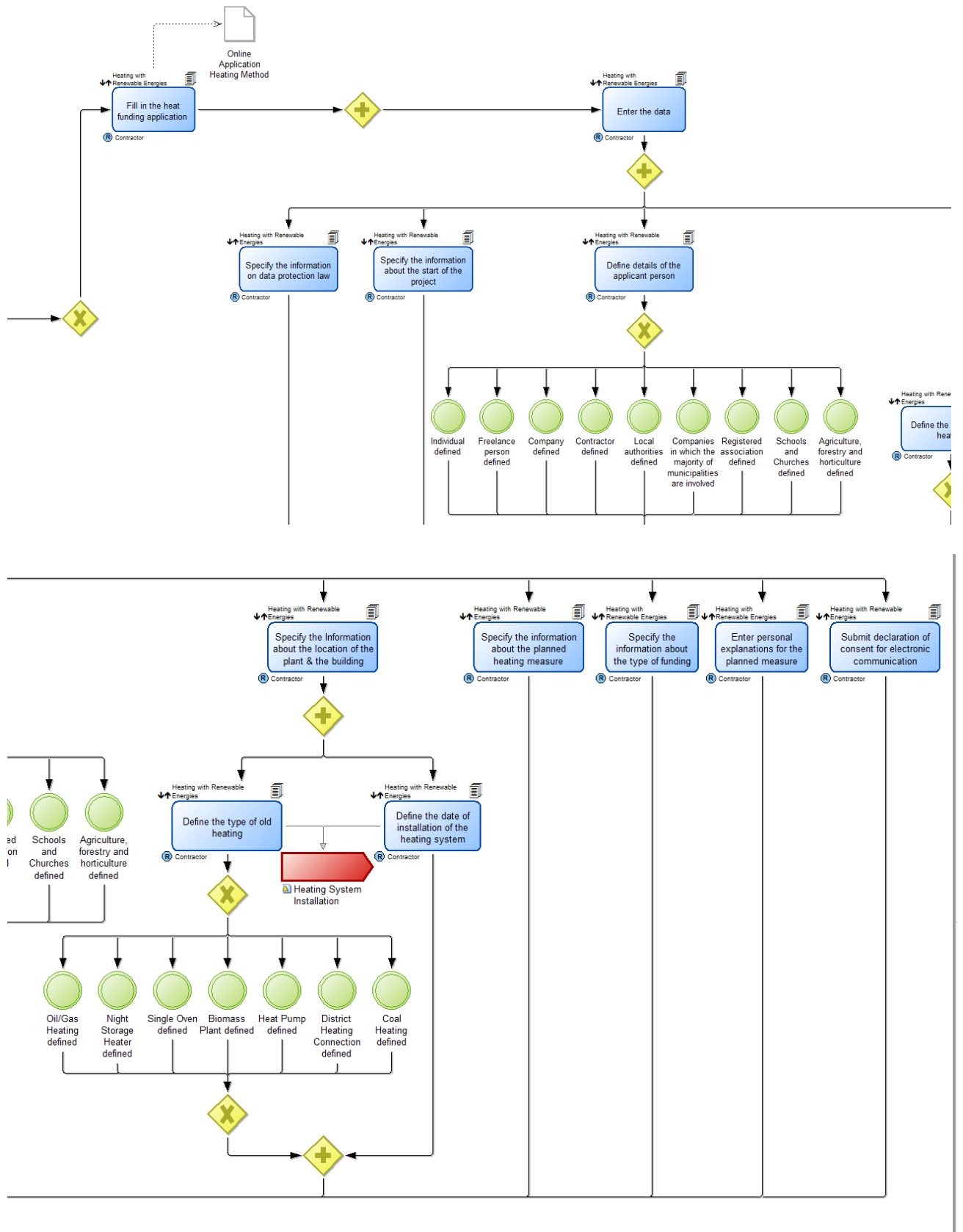


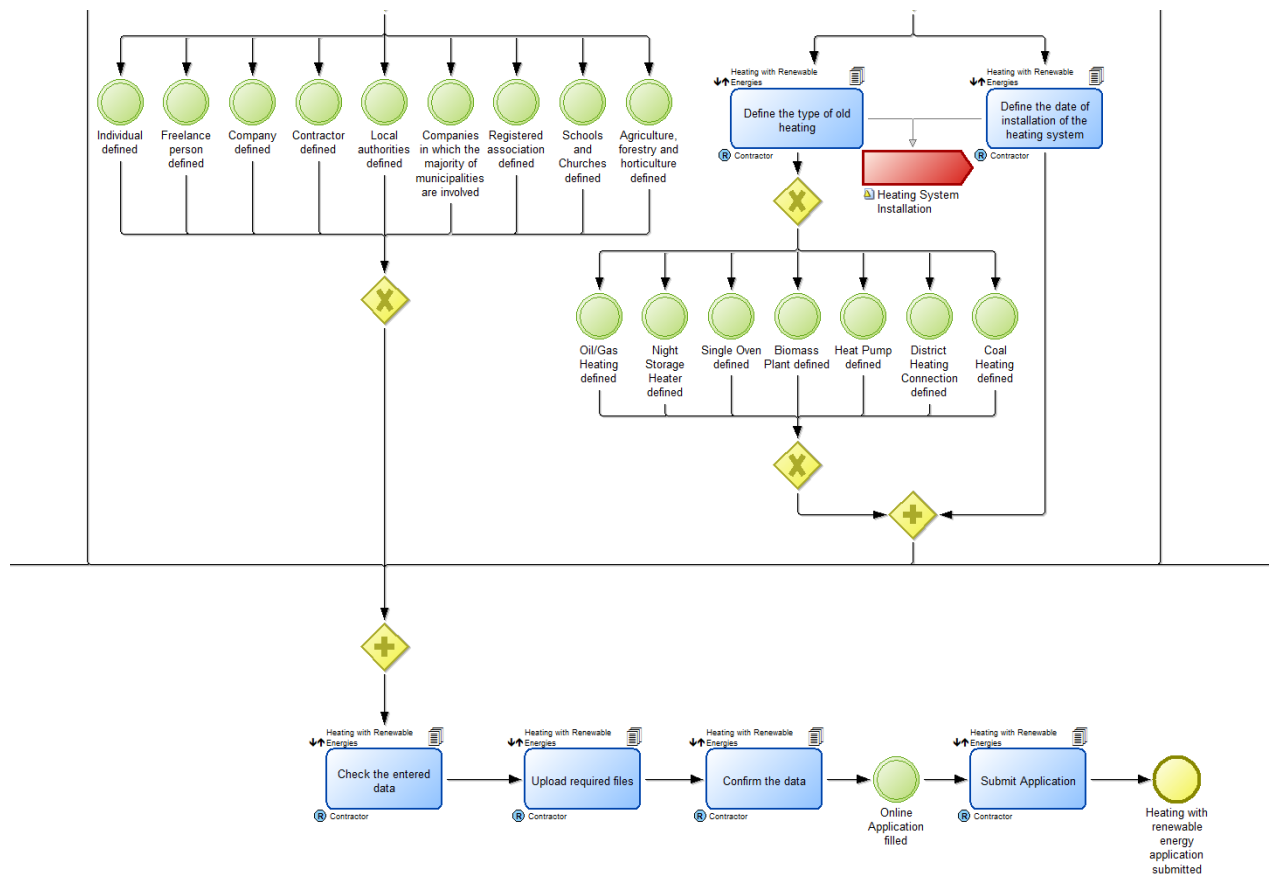












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