

# Specifiers: Multi unit:Solar Water Heating

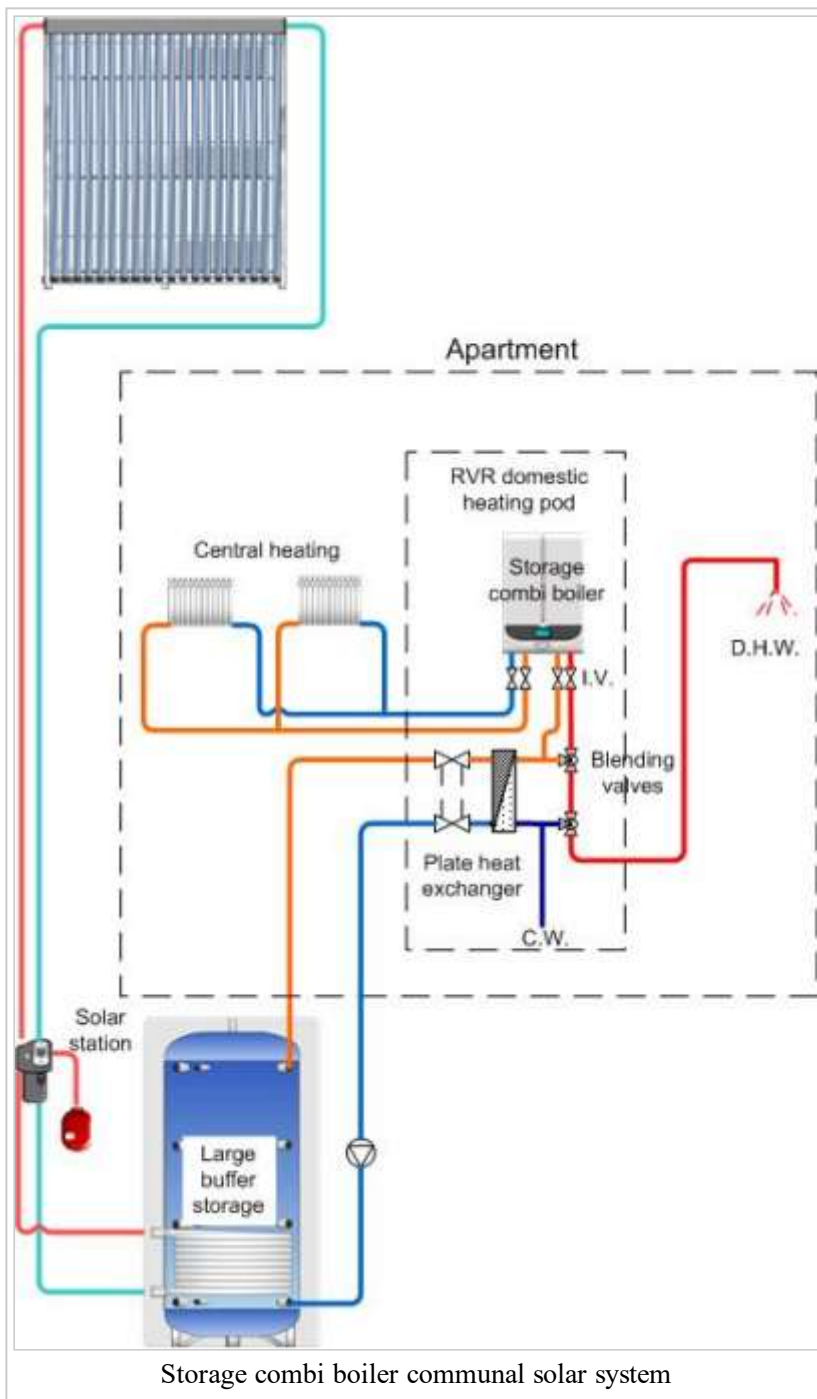
## From RVR

Part L of the 2008 Irish building regulations requires that there is a reasonable minimum level of energy provision from renewable energy technologies for all dwellings. For thermal energy, this is defined as a minimum contribution of 10 kWh/m<sup>2</sup>/annum of energy use for domestic hot water heating, space heating or cooling.

A solar water heating system may be used to partially or completely meet this requirement. Compliance with the building regulations is checked using the DEAP (Dwelling Energy Assessment Procedure) software. The aperture area and efficiency values of the collector will be required for the DEAP calculation.

Compliance options for apartments (and similar applications) which involve using solar collectors in conjunction with gas fired boilers are suggested below:

## **Option 1 - Storage combi boiler with pre-heating of DHW via a communal solar system**



A centralised solar thermal system is sized using approx 2m<sup>2</sup> of solar collector and 110 litres of thermal storage capacity (water heating tank) per apartment. This part of the system will be located in a plant room, basement or other location.

In each apartment, a heat exchanger pre-heats the domestic water to the storage combi boiler (Immergas Victrix Zeus model). Valves are installed so that the boiler will be automatically bypassed if sufficient free solar DHW is available. If the solar hot water heating is not sufficient, the Immergas boiler will 'top up' the DHW temperature.

The system can be pre-packaged using the RVR Domestic Heating POD. ([http://www.rvr.ie/default.aspx?subj=catalog/ProductsList&catIdPath=0\\_126\\_150\\_151](http://www.rvr.ie/default.aspx?subj=catalog/ProductsList&catIdPath=0_126_150_151))

### Advantages:

- Low cost solution
- Very good building energy rating

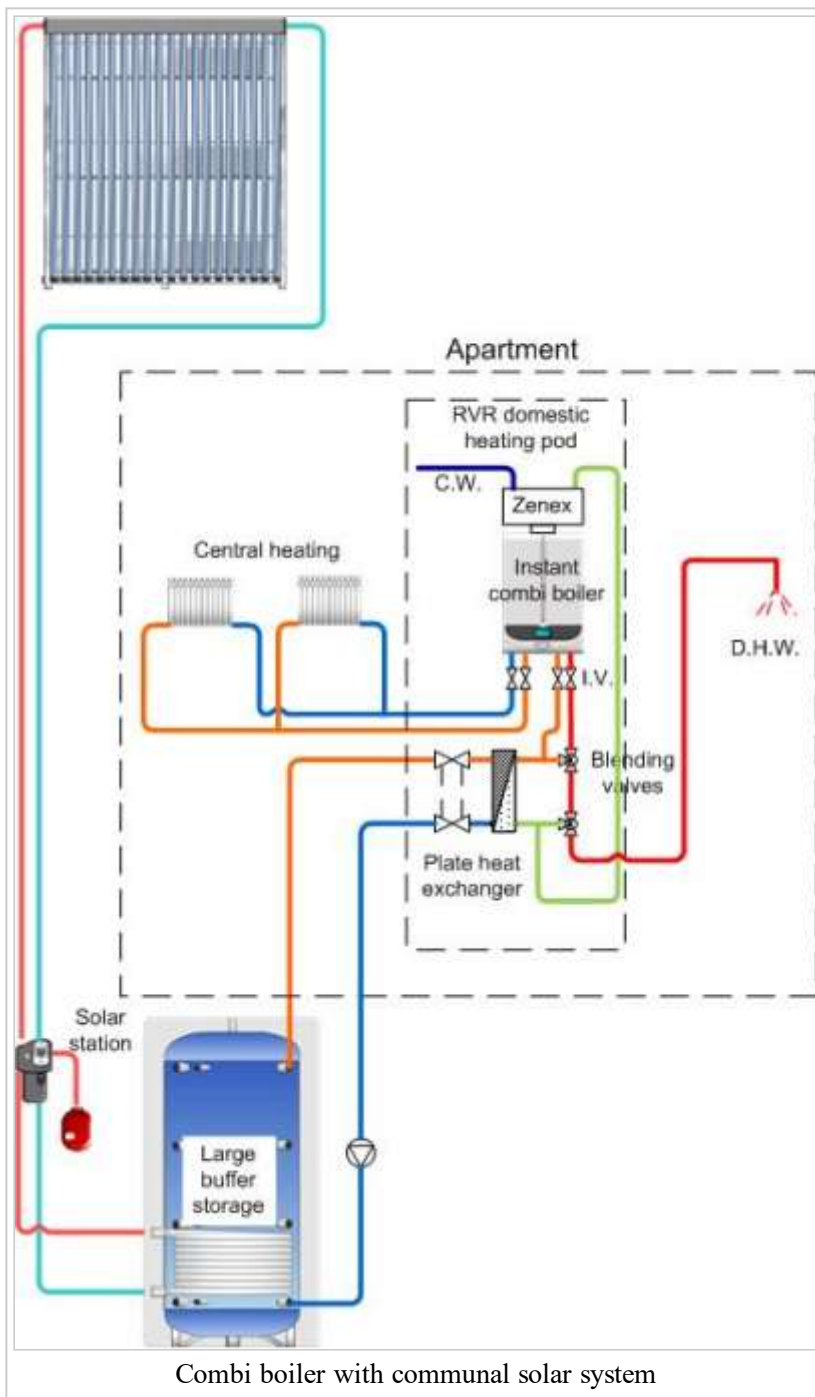
- No extra space for solar required in the apartment.
- Gas boiler means reliable energy supply.
- No need for heat metering; If necessary a charge can be included in the apartment management fee for solar heating.

**Other Advantages:**

- Gas can be used for cooking in the apartment.
- Integrated DHW storage in Immergas boiler reduces solar water storage size required.
- Proven technology – over 5000 apartments in Ireland use an Immergas storage combi boiler.

## **Option 2 - Combi boiler with pre-heated DHW from a central solar system**

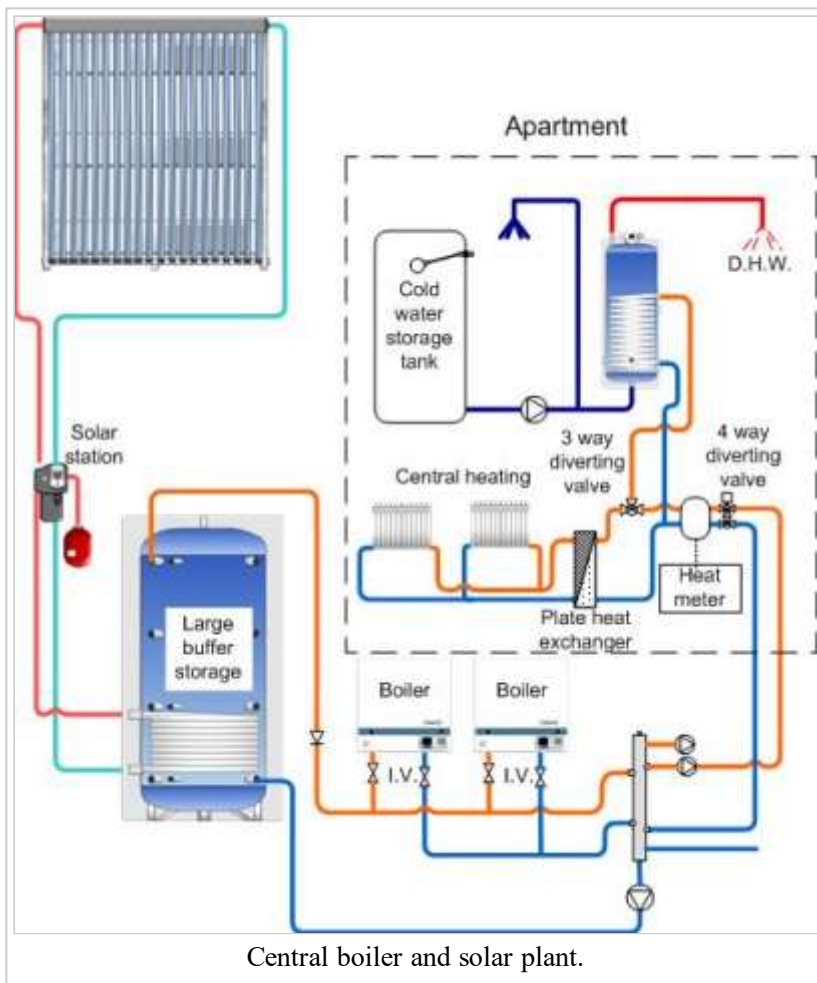
This is a variation on the previous option. A standard condensing combi boiler (Immergas Victrix model) is used in conjunction with a Zenex GasSaver (<http://www.rvr.ie/default.aspx?subj=catalog/ProductDescription&catIdPath=&productId=SBA150>) to improve the energy rating further.



The sizing and location of the solar thermal system is the same as for option 1 (i.e. 2 m<sup>2</sup> and 110 litres of thermal storage per apartment.)

This system can be pre-packaged using the RVR Domestic Heating POD. ([http://www.rvr.ie/default.aspx?subj=catalog/ProductsList&catIdPath=0\\_126\\_150\\_151](http://www.rvr.ie/default.aspx?subj=catalog/ProductsList&catIdPath=0_126_150_151))

## Option 3: District Heating Type 1 (with solar primary)



Boilers are not installed in the apartments. They are located in a central plant room with all other plant. Each apartment has a local station with heat meter, valves and heat exchangers.

This system comprises:

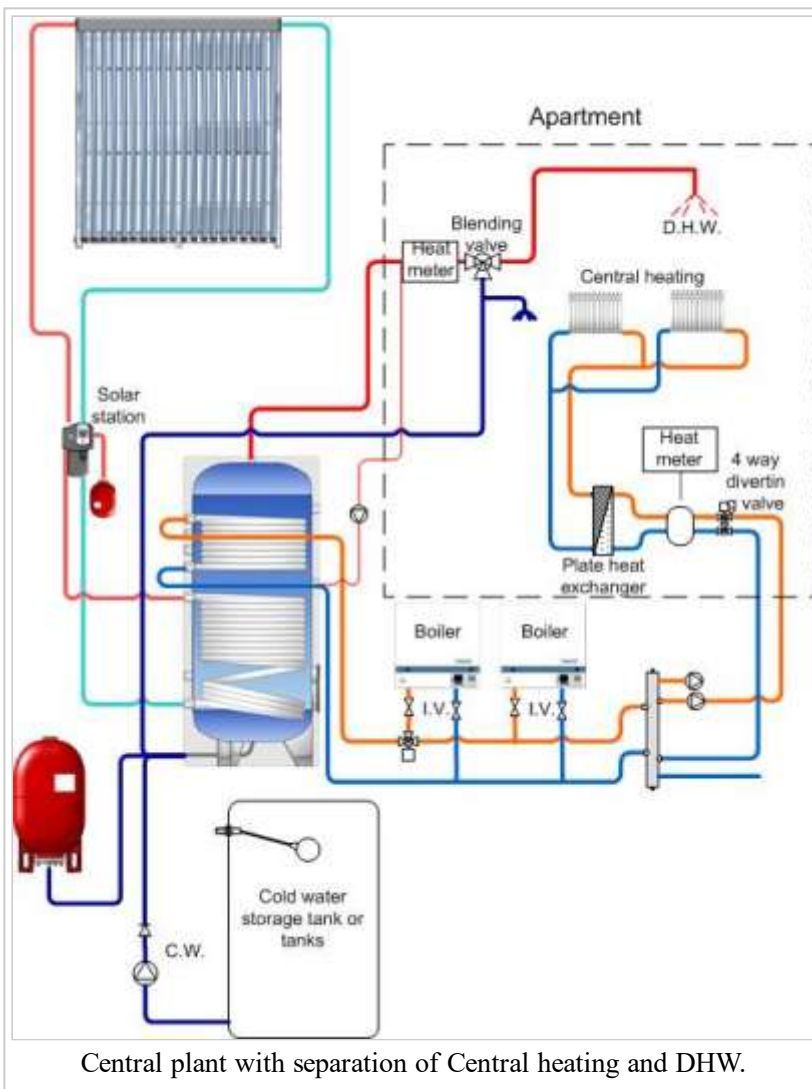
- A centralised solar system consisting of approx 2m<sup>2</sup> of solar panel and 110 litres of storage per apartment.
- One or more MHG Procon HT commercial condensing gas boilers

Advantages:

- Low cost solution
- Gives an excellent building energy rating
- No extra space required in the apartment
- No gas in the apartment
- Centralised boiler servicing
- Heat meters can be centrally monitored

## Option 4: District Heating Type 2 (with Solar DHW)

This is a variation on the previous option. The main difference is that the solar heats the domestic hot water only.

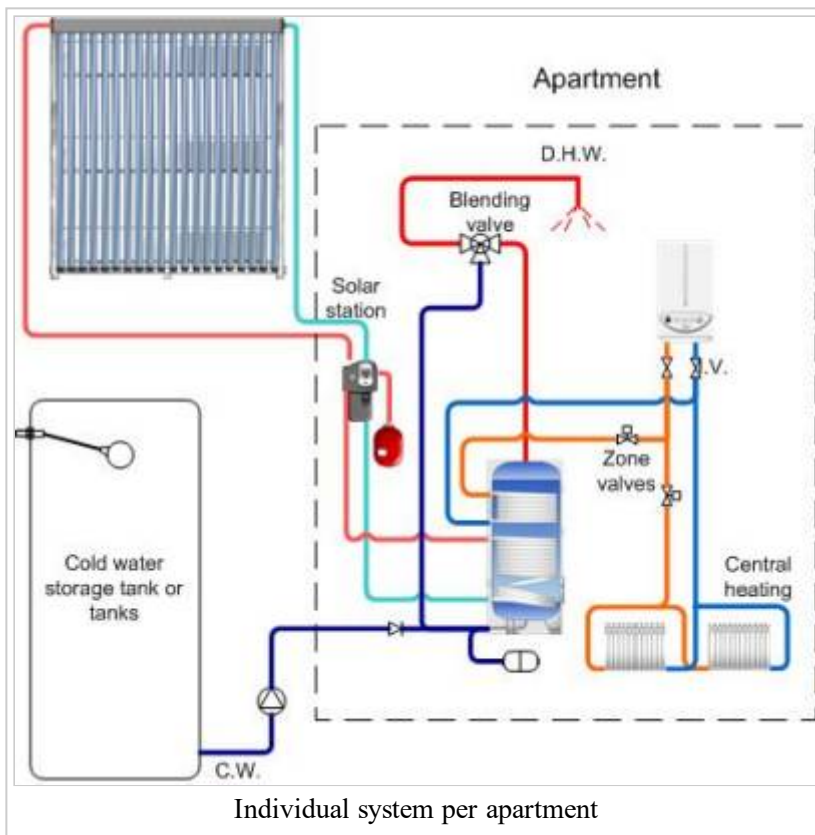


The system comprises:

- A centralised solar system consisting of approx 2m<sup>2</sup> of solar panel and 110 litres of storage per apartment (for Part L compliance)
- One or more MHG Procon HT commercial condensing gas boilers

## Option 5: Independent solar system and gas boiler per apartment

Each apartment has it's own solar water heating system.



The system comprises:

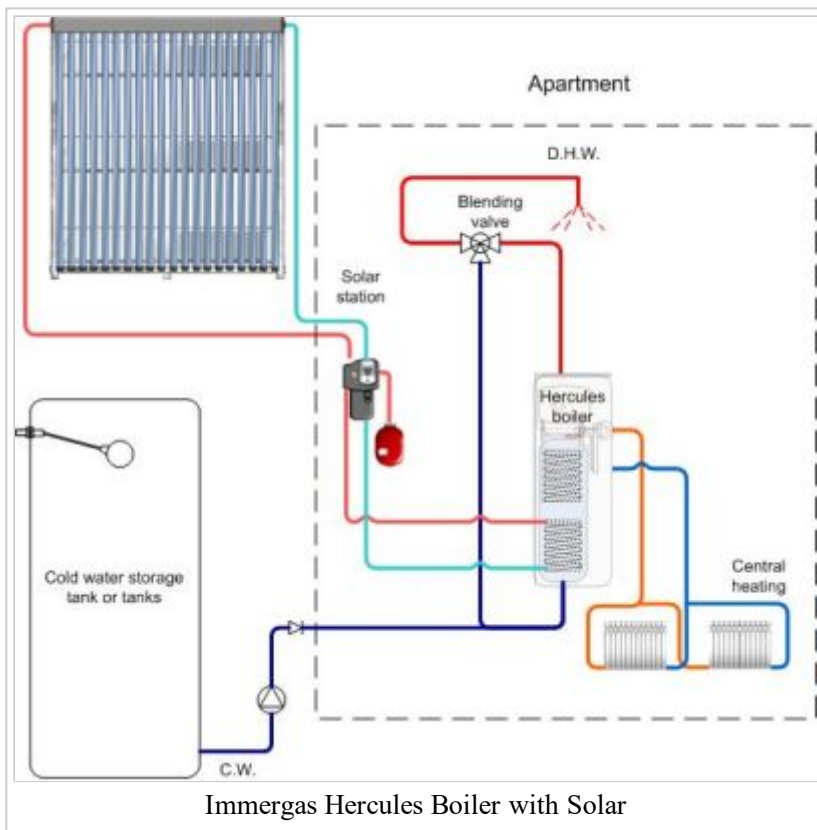
- 2.5m<sup>2</sup> of solar panel and a 200 litre cylinder in each apartment
- A system boiler in each apartment

Advantages:

- No central storage required.
- Less pipework.
- Each apartment has its' own individual system.
- Ideal for townhouses or lower density developments.

## Option 6: Immergas Hercules packaged solution

This is a variation on the previous option. An Immergas Hercules condensing gas boiler and an individual solar system is used in each apartment.



#### Advantages:

- Extremely compact solution 600mm × 600mm boiler and water heater footprint
- Simple installation

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