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FIREBIRD

HEATING SOLUTIONS

FIREBIRD
ENVIROAIR 14kW
Air Source Heat Pump

ENTRY INTO DEAP 4

FOR
BER ASSESSMENT / PART L COMPLIANCE

Prior to entering the heat pump in **HEAT SOURCES**, you must complete the **CONTROLS AND RESPONSIVENESS** tab:

- **Heating System Category**: Central heating systems with radiators or underfloor heating
- **Sub Category**: Heat pumps
- **Heating System**: Air-to-water heat pump (electric)
- **Heat Emitter Type**: Underfloor heating, pipes in screed above insulation ***(most likely - confirm)***
- **Heating System Controls**: Time and temperature zone control ***(most likely - confirm)***
- **Load or weather compensation**: ☑ ***(most likely - confirm)***

(You will now go to HEAT SOURCES, **+** ADD HEAT SOURCE, ADD NEW ITEM TO LIBRARY)

Create Library Item

Make the following entries in the BASIC PROPERTIES tab:

- **Item Type**: Heat Source
- **Item Name**: Enviroair 14kW
- **Keywords**: Optional
- **Manufacturer**: Firebird
- **Model**: Enviroair 14kW
- **Heating Source Type**: Heat pumps
- **Heat Pump Type**: Air to Water
- **Space Heating Standard**: I.S. EN 14825
- **Water Heating Standard**: I.S. EN 16147
- **Seasonal Space Heating Efficiency, ηs [%]:** 133
- **Water Heating Efficiency, ηwh [%]:** 117.41
- **Temperature Control (Capacity Control):** Variable Outlet
- **TOL**: -10 (° C)
- **WTOL**: 55 (°C)

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Create Library Item

BASIC PROPERTIES | HEAT PUMP TEST DATA

Item Type *: Heat Source

Item Name *: Enviroair 14kW

Keywords:

Manufacturer *: Firebird

Model *: Enviroair 14kW

Heating Source Type *: Heat pumps

Heat Pump Type *: Air to Water

Space Heating Standard: I.S. EN 14825

Water Heating Standard: I.S. EN 16147

Seasonal Space Heating Efficiency, ηs [%] *: 133

Water Heating Efficiency, ηwh [%] *: 117.41

CANCEL | SAVE

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Create Library Item

Heat pumps

Air to Water

Space Heating Standard

I.S. EN 14825

Water Heating Standard

I.S. EN 16147

Seasonal Space Heating Efficiency, ηs [%] *

133

Water Heating Efficiency, ηwh [%] *

117.41

Temperature Control (Capacity Control) *

Variable Outlet

☐ Integrated Immersion

☐ Flow temperature >= [60|65]°C

TOL *

-10

WTOL *

55

CANCEL

SAVE

Create Library Item

Make the following entries (in RED) in the HEAT PUMP TEST DATA tab:

➲ **Test condition - Low (35 °C)**

	A (88%) - 7 °C	B (54%) - 2 °C	C (35%) -7 °C	D (15%) 12 °C	E* (100%) TOL
Source	A-7	A2	A7	A12	A-15
Sink	W34	W30	W27	W24	W35
Heating Capacity (kW)	**12**	**7.3**	**4.7**	**3.5**	**12.1**
Coefficient of Performance (kW/kW)	**2.55**	**4.7**	**5.7**	**6**	**2.5**

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Create Library Item

BASIC PROPERTIES | HEAT PUMP TEST DATA

Heating System Test data: I.S. EN 14825

Test Condition - Low (35°C)

	A (88%) -7°C	B (54%) 2°C	C (35%) 7°C	D (15%) 12°C	E* (100%) TOL
Source	A-7	A2	A7	A12	A-10
Sink	W34	W30	W27	W24	W35
Heating Capacity (kW)	12	7.3	4.7	3.5	12.1
Coefficient of Performance (kW/kW)	2.55	4.7	5.7	6	2.5

Test Condition - Medium (45°C)

CANCEL SAVE

Create Library Item

Make the following entries (in RED) in the HEAT PUMP TEST DATA tab:

➲ **Test condition - High (55 °C) ***

	A (88%) - 7 °C	B (54%) - 2 °C	C (35%) -7 °C	D (15%) 12 °C	E* (100%) TOL
Source	A-7	A2	A7	A12	A-15
Sink	W52	W42	W36	W30	W55
Heating Capacity (kW)	**10.25**	**6.24**	**4.01**	**3.5**	**9**
Coefficient of Performance (kW/kW)	**1.7**	**3.6**	**4.6**	**5.5**	**1.6**

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Create Library Item

Test Condition - Low (35°C)

Test Condition - Medium (45°C)

Test Condition - High (55°C) *

	A (88%) -7°C	B (54%) 2°C	C (35%) 7°C	D (15%) 12°C	E* (100%) TOL
Source	A-7	A2	A7	A12	A-10
Sink	W52	W42	W36	W30	W55
Heating Capacity (kW)	10.25	6.24	4.01	3.5	9
Coefficient of Performance (kW/kW)	1.7	3.6	4.6	5.5	1.6

Test Condition - Very High (65°C)

CANCEL SAVE

Create Library Item

Make the following entries in the HEAT PUMP TEST DATA tab:

➲ **Heating System Test Data I.S. EN 16147**

- **Source of Data**: Water heating energy efficiency
- **Water heating energy efficiency, hwh [%]:** 117.41
- **Reference Hot Water Temperature (°C):** 49.6
- **Capacity of Heat Pump [kW]**: 7.22
- **Declared Load Profile**: XL
- **Standby Heat Loss [kWhr/day]**: 0.01
- **Volume of DHW accounted for in test [litre]**: 311

Now you can SAVE this Library Item.

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Create Library Item

Coefficient of Performance (kW/kW)	1.7	3.6	4.6	5.5	1.6

Test Condition - Very High (65°C)

Heating System Test data: I.S. EN 16147

Source of Data *: Water heating energy efficiency

Co-efficient of Performance [kW/kW]:

Water heating energy efficiency, nwh [%] *: 117.41

Reference Hot water Temperature [°C] *: 49.6

Capacity of Heat Pump [kW] *: 7.22

Declared load profile *: XL

Standby Heat Loss [kWh/day] *: 0.01

Volume of DHW accounted for in test [litre] *: 311

CANCEL SAVE

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Add from Library

Heat sources filtered to match heating system properties in the controls and responsiveness tab

COMMON ITEMS | SEARCH | RECENT ITEMS

Search Library Items

Enviroair 14

Minimum 3 characters are required to start search

Type	Name & Product Details	Seasonal Efficiency (%)	Source
	Enviroair 14kW Manufacturer: **Firebird**, Model: **Enviroair 14kW**, Type: **Heat pumps, Air to Water**, Space Heating Standard: **I.S. EN 14825**, Water Heating Standard: **I.S. EN 16147**, Water Heating Seasonal Efficiency: **117.41%**	133	

Items found: 1

1

ADD NEW ITEM TO LIBRARY

CANCEL

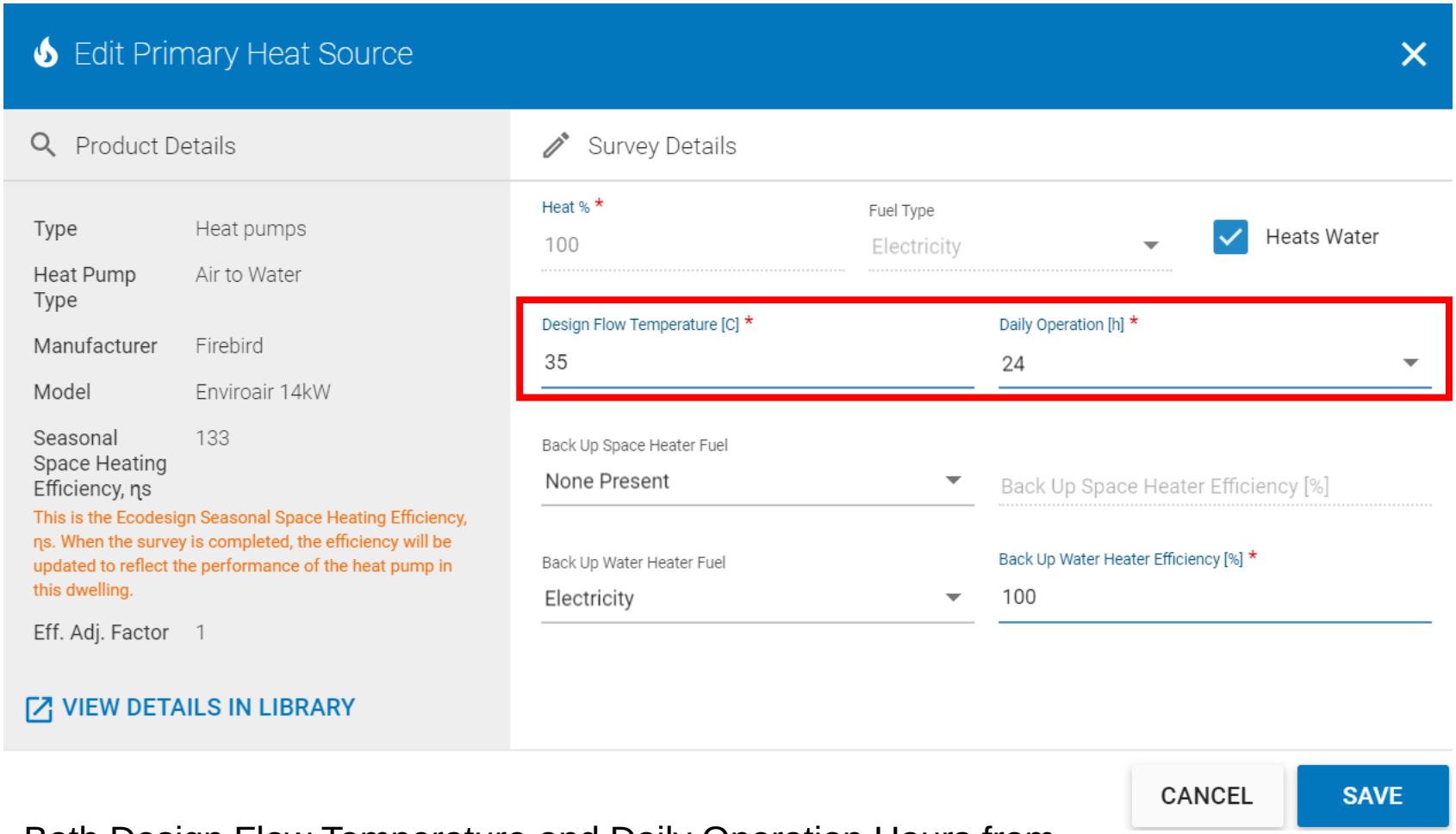
ADD SELECTED ITEM

You will ADD SELECTED ITEM and then DEAP will ask for more information:

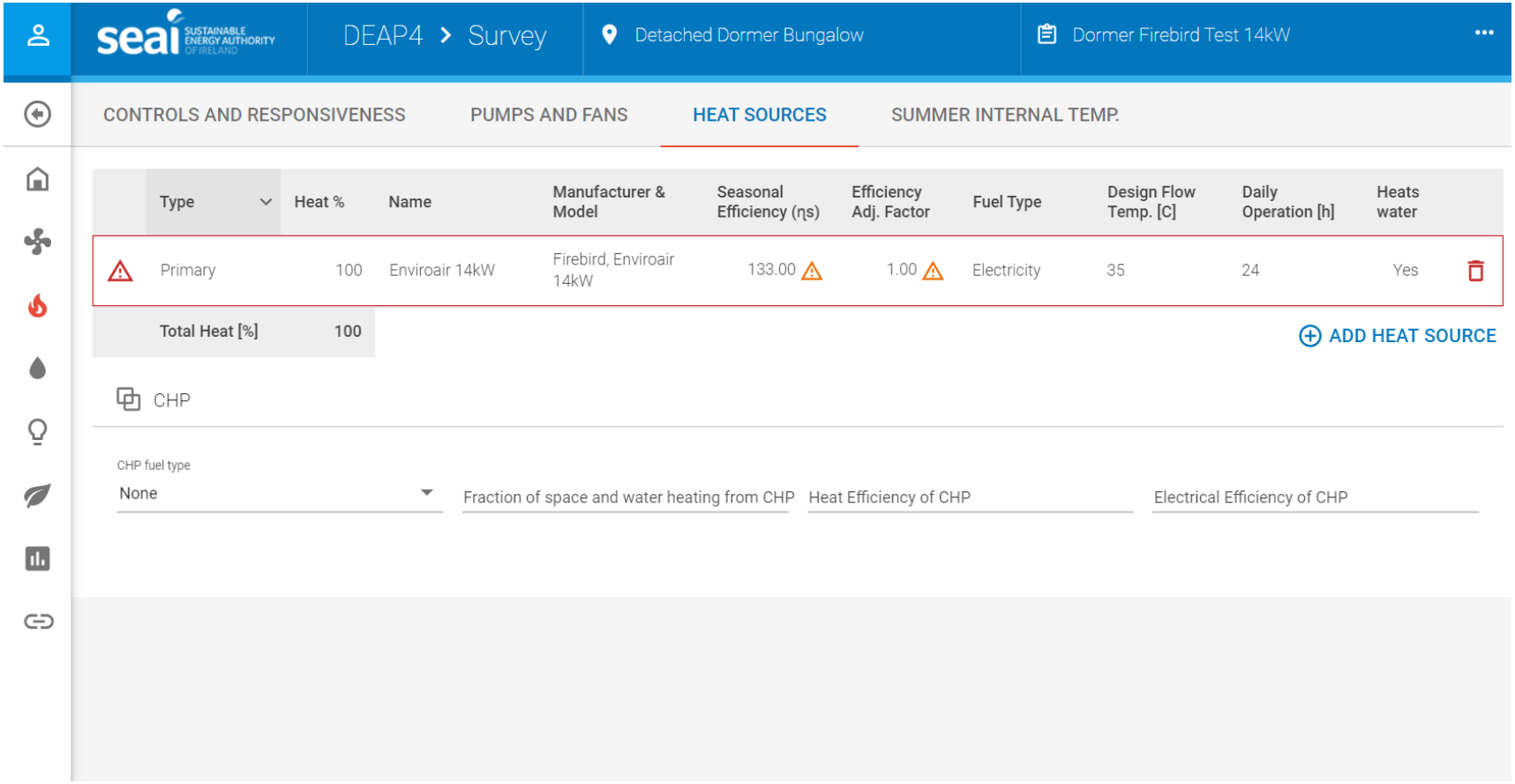
Edit Primary Heat Source

- **Load or weather compensation**: ☑ ***(most likely - confirm)***
- **Design Flow Temperature (°C):** from Designer Installer Sign-Off Form
- **Daily Operation [h]**: from Designer Installer Sign-Off Form
- **Back Up Space Heater Fuel**: None Present (most likely, as this refers to a hybrid Primary Heating System - NOT the Secondary Heating System in the dwelling.)
- **Back Up Water Heater Fuel**: Electricity (**most likely**, as this refers to an electric immersion which is occasionally used to boost the hot water temperature to 60°C+ to kill bacteria.)

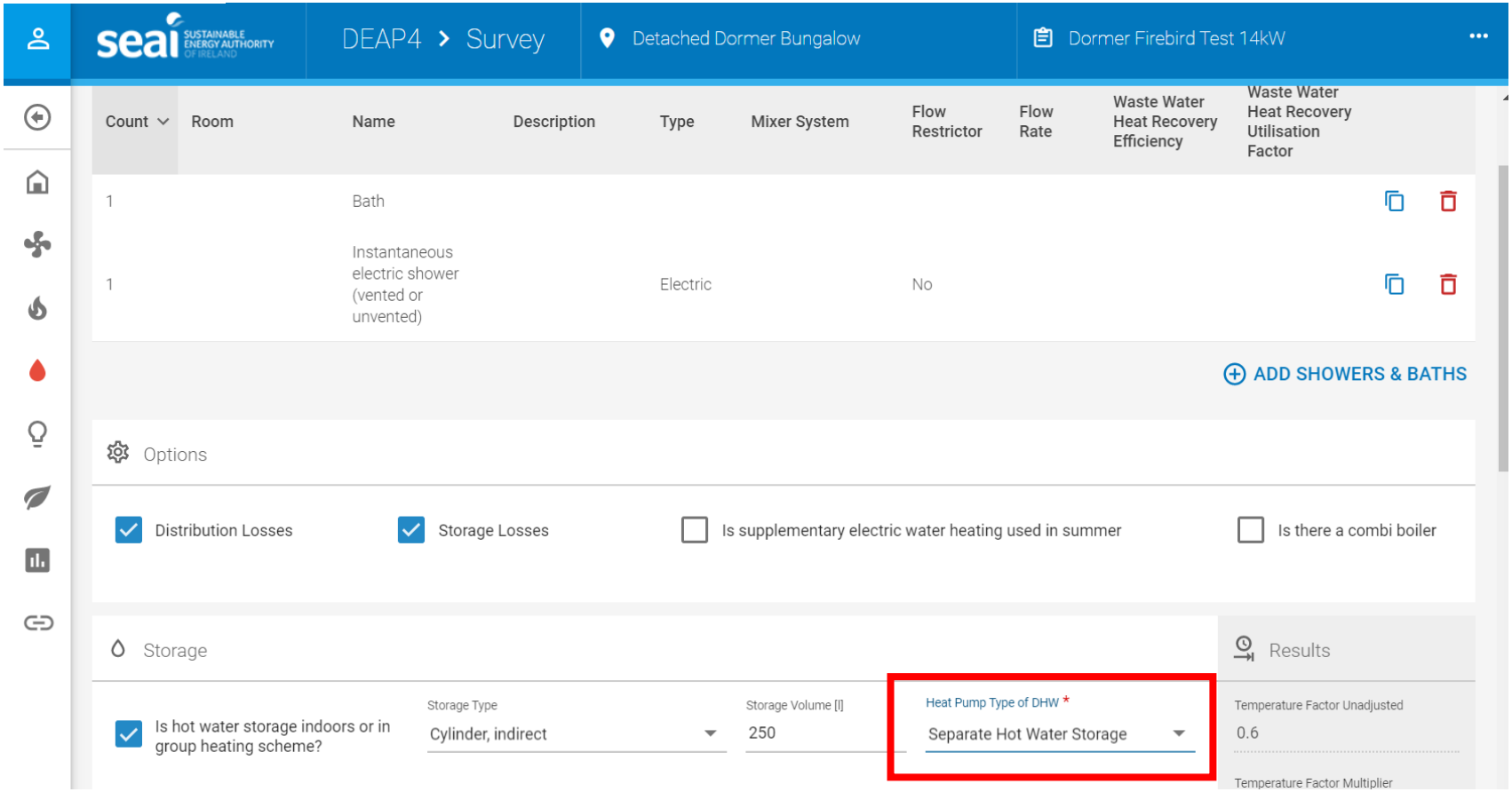
Now you can SAVE this Heat Source to the DEAP Survey.



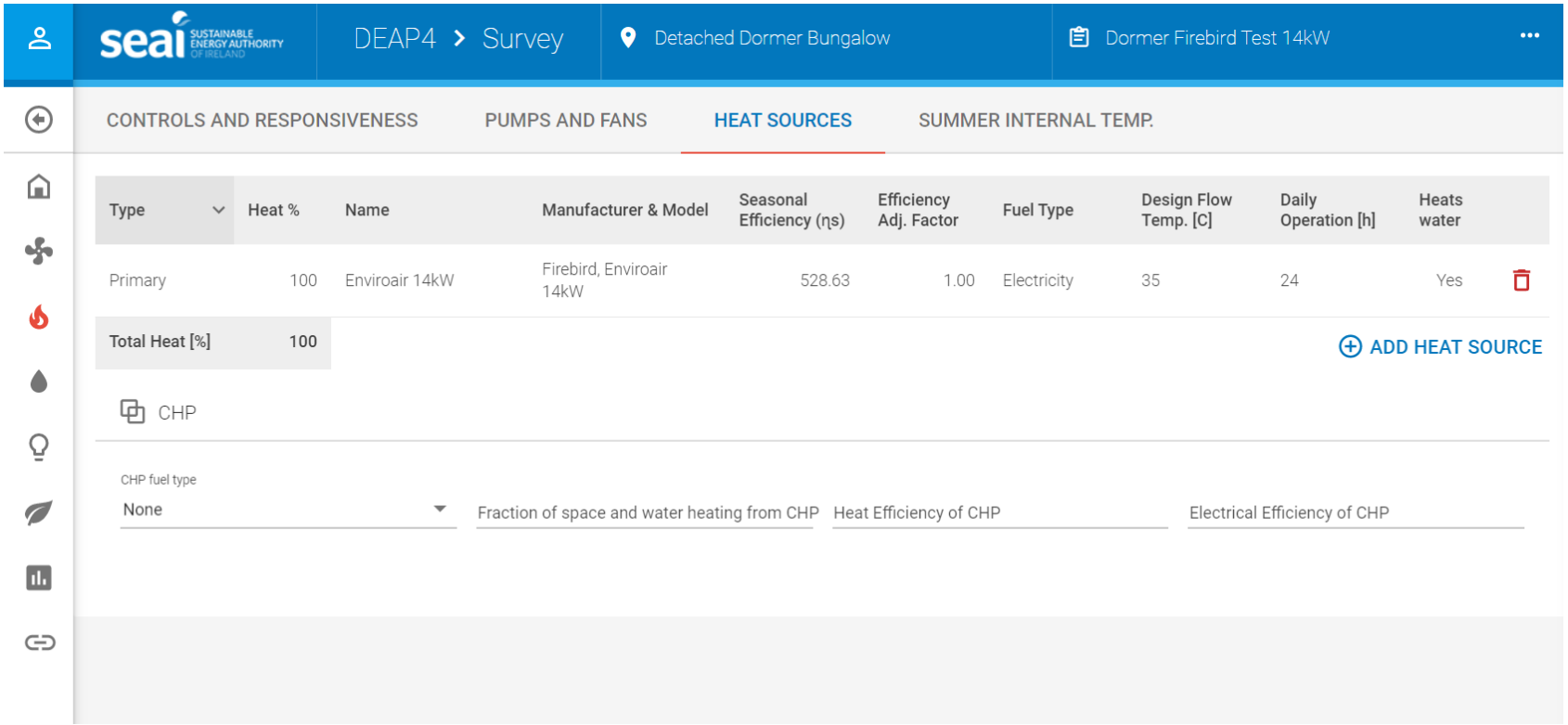
Both Design Flow Temperature and Daily Operation Hours from Designer Installer Sign-Off Form (commonly 35°C and 24 hrs respectively for underfloor heating.



Errors caused by incomplete information on Water Heating tab – “Heat Pump Type of DHW” – go to Water Heating



Select type of DHW storage.



Errors now corrected and warnings gone from Space Heat Sources.

If you are installing the Firebird HP210ERP cylinder in the dwelling, the DEAP entries in the Water Heating tab are:

OPTIONS & STORAGE

- **Distribution Losses**: ☑ *(most likely - confirm)*
- **Storage Losses**: ☑
- **Is hot water storage indoors or in group heating scheme**: ☑ *(most likely - confirm)*
- **Storage Type:** Cylinder, indirect
- **Storage Volume [l]**: 250
- **Heat Pump Type of DHW**: Separate Hot Water Storage
- **Is manufacturers declared loss available**: ☑
- **Make and Model:** Firebird HP250ERP

If you are installing the Firebird HP180ERP cylinder in the dwelling, the DEAP entries in the Water Heating tab are:

OPTIONS & STORAGE

- **Declared Loss [kWh/day]:** 2.19 *(equal to 91W)*
- **Primary Circuit Loss Type**: Boiler with uninsulated primary pipework and with cylinder thermostat *(unless you can prove every mm of the primary pipework is actually insulated, also assuming there actually is a cylinder thermostat.)*
- **Cylinder Thermostat**: ☑
- **Cylinder Heated by Boiler System having separate time control of DHW**: ☑ *(assuming this is actually the case)*

(In the HEAT SOURCE sub-tab, the Enviroair 14kW heat pump should already be entered as you selected the "Heats Water" option in the Space Heating tab.)

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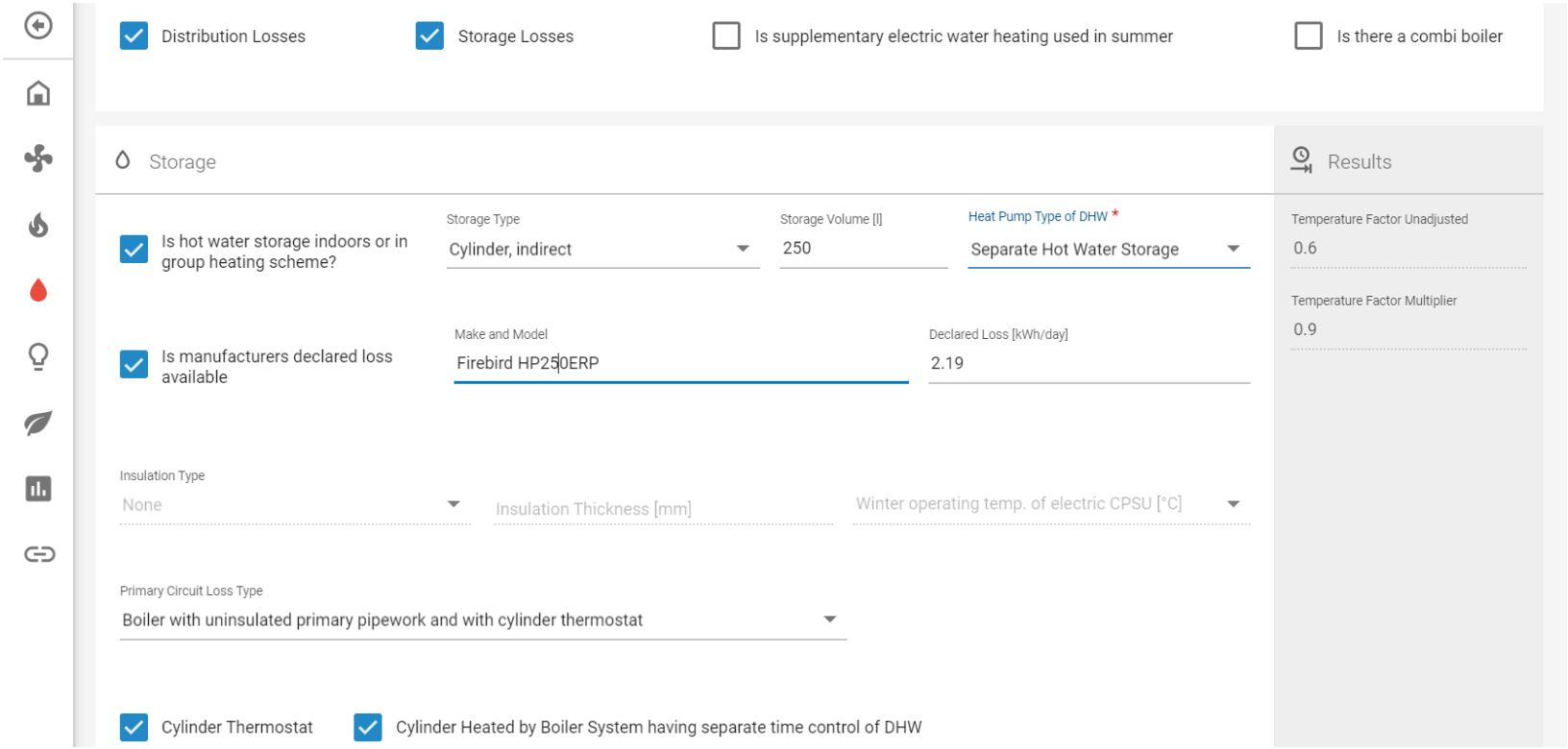

Should you have any queries, please contact us at Firebird: info@firebird.ie.