Project plan

Cad Design and modelling

Initial modelling of the heat exchanger and back of the envelope calculations so validate its potential

Simulation

Simulating the thermal conduction of the heat exchanger

Testing of heaters and heat exchanger concept

Real world testing of the cartridge heater concept with the basic heat exchanger design

Prototype Electronics Design

Initial control boards to manage the battery and heaters and show results such as current draw and temperature for each heater

Battery and heat exchanger testing

Testing the batter with the heat exchanger to see what the maximum power draw we can expect from the final product is

Prototype software development

Basic Software development to use PID to control the heaters and bring online battery charging and management for testing

Test electronics with heat exchanger design

Combine electronics with heaters, battery, heat exchanger and software for initial prototype demonstration

Analysis of feasibility

Analysis of results to compare to industry standards, our expected results and verify the feasibility of the project

Software Development

Development of a GUI to interface with the user, the IOT network and the safety controls built in to control the boiler

Final heat exchanger design iterative prototyping

Refine the heat exchanger design to be as efficient as possible whist being allowing ease of manufacture. Use 3D printing to rapidly prototype the main boiler and the distributed water heaters.

Electronics and safety prototyping

Final electronics with a lot of the expensive monitoring the prototype had, stripped out. Final consumer PCB

CE testing electronics

Send Electronics and batteries to CE test house to be certified

Heat exchange manufacture

Manufacture the final heat exchanger design to ensure it can be manufactured using conventional methods in a cost effective manner

Integration of heat exchanger and electronics to form final boiler

Joining all components in a final package that will be sold to the user

Boiler CE testing and Certification

Complete all necessary regulation and CE testing

Supply line sourcing

Source the components from each supplier to be assembled at our factory

Alpha testing and technical analysis of final product

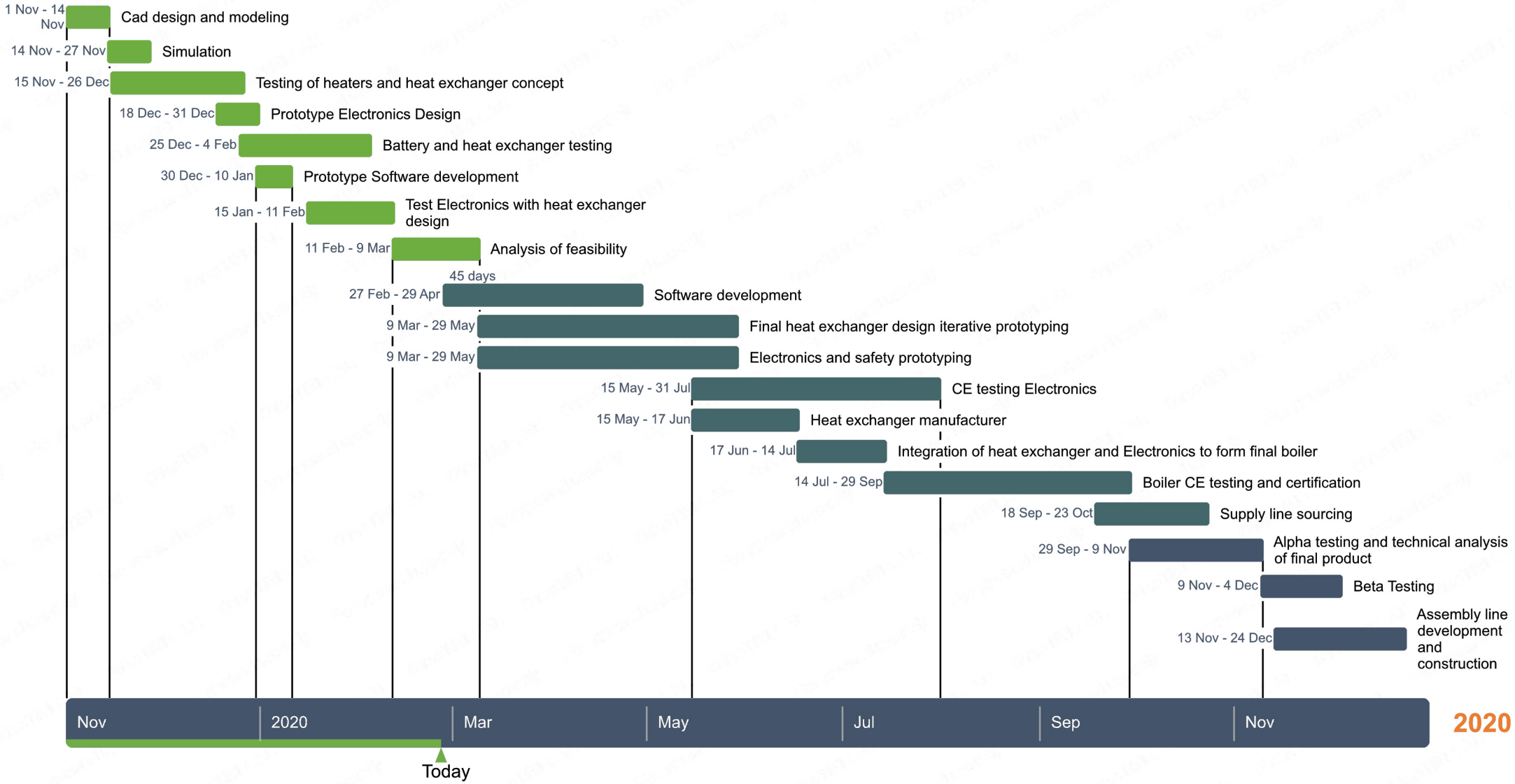
Initial test of first boilers produced

Beta testing

Field testing to ensure the boilers a functional and work out any bugs

Assembly line development and construction

Construction and development of the final assembly line including hiring labour to construct the boiler


1 Nov - 14 Nov
Cad design and modeling
14 Nov - 27 Nov
Simulation
15 Nov - 26 Dec
Testing of heaters and heat exchanger concept
18 Dec - 31 Dec
Prototype Electronics Design
25 Dec - 4 Feb
Battery and heat exchanger testing
30 Dec - 10 Jan
Prototype Software development
15 Jan - 11 Feb
Test Electronics with heat exchanger design
11 Feb - 9 Mar
Analysis of feasibility
45 days
27 Feb - 29 Apr
Software development
9 Mar - 29 May
Final heat exchanger design iterative prototyping
9 Mar - 29 May
Electronics and safety prototyping
15 May - 31 Jul
CE testing Electronics
15 May - 17 Jun
Heat exchanger manufacturer
17 Jun - 14 Jul
Integration of heat exchanger and Electronics to form final boiler
14 Jul - 29 Sep
Boiler CE testing and certification
18 Sep - 23 Oct
Supply line sourcing
29 Sep - 9 Nov
Alpha testing and technical analysis of final product
9 Nov - 4 Dec
Beta Testing
13 Nov - 24 Dec
Assembly line development and construction
Nov
2020
Mar
May
Jul
Sep
Nov
2020
Today