Dear supporters!

Thank you for your kind patience in waiting for this update!

After 5 months of intense development, we are proud to present to you the improved version of our Airo bottle.
This design is now being prepared for production.

We have managed to reduce its size around 40% for compact transportation and implemented a flexible energy input concept, which will allow you to use the bottle more efficiently in a broader scope of scenarios!

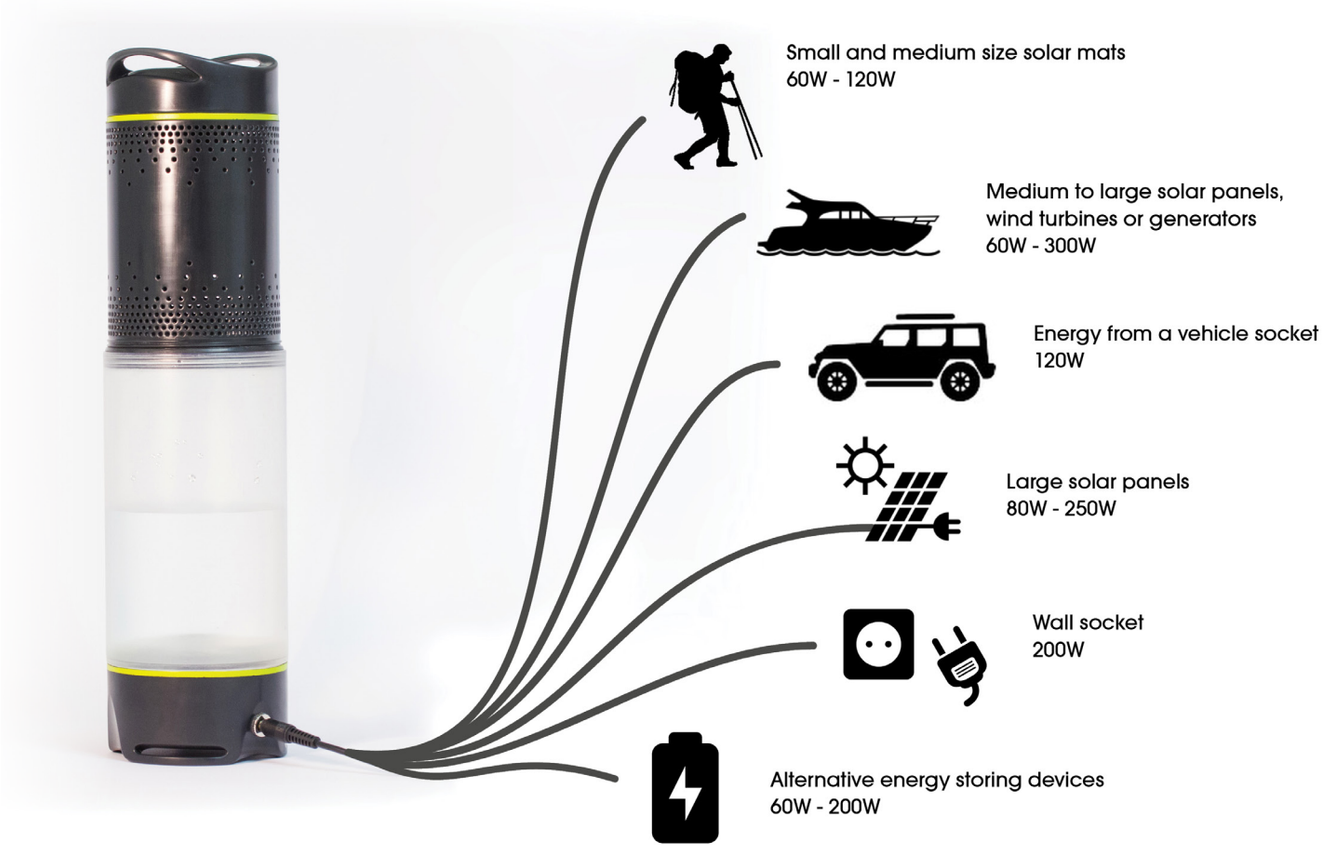
We have researched and tested all relevant methods for extracting water from the air and have finalized defining the technology implemented in our Airo bottle.

Flexible energy input

Responding to your feedback regarding the large range of application situations of the Airo bottle, we decided not to limit the efficiency of our bottle by binding it to a pre-determined solar mat size.

In this way, depending on the usage and the situation, you may power your Airo with the best energy source available, enabling a higher water output.

You may use it for independent water generation at home, in your car or camper when travelling, on your boat, at your camp site and many other situations.



Watch the video here https://youtu.be/H8TILTFOZmg

Fontus for HOME

Our Airo bottle generates close to distilled water which has a great deal of advantages you probably were unaware of!

Benefits:

Independent water source

Be sure that no matter what happens, you will always have your own way of producing water. Be it a catastrophe scenario, autark living or just don´t want to depend on tap water.

Personalized mineralization

Add the specific minerals and supplements you personally need. It is more clever to add in the vitamins and minerals you need into a clean water supply, rather than to worry about unknown potential chemicals and harmful agents that could be in you tap water. Mineralizing your Fontus water is important. Drinking distilled water for longer periods of time is not recommended.

Clean water

In most countries, municipal water is unsafe to drink and contains fluoride and chlorine. Water from the air is considered soft water and usually very clean unless generated in highly polluted areas. It does not contain fluoride nor chlorine and is normally ph neutral.

No plastic waste

Keep our planet safe by reducing your bottle waste and drinking water from the air.

Body care - skin, hair

Washing your face using distilled water can improve your skin condition. The chlorine in tap water can strip moisture out of your skin, making your skin lose its elasticity. Distilled water is better than normal tap water at dissolving impurities on our skin, even soap residue from facial cleanser. Use it as the final rinse after shampooing for your hair.

Lime free water - cleaning

Water from the air does not contain lime. Use this water for cleaning efficiently without leaving white traces and for neat ironing!

Neutral taste - cooking, tea

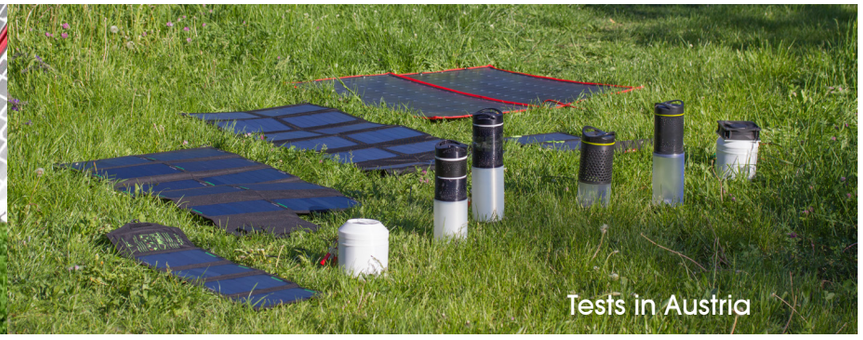
Water from the air is water in its purest form. Thus, it is neutral in taste and will serve as the perfect basis for any added ingredients. Great for cooking, preparing tea, soup, etc.

Water for your plants

Research shows that watering plants with distilled water is beneficial.

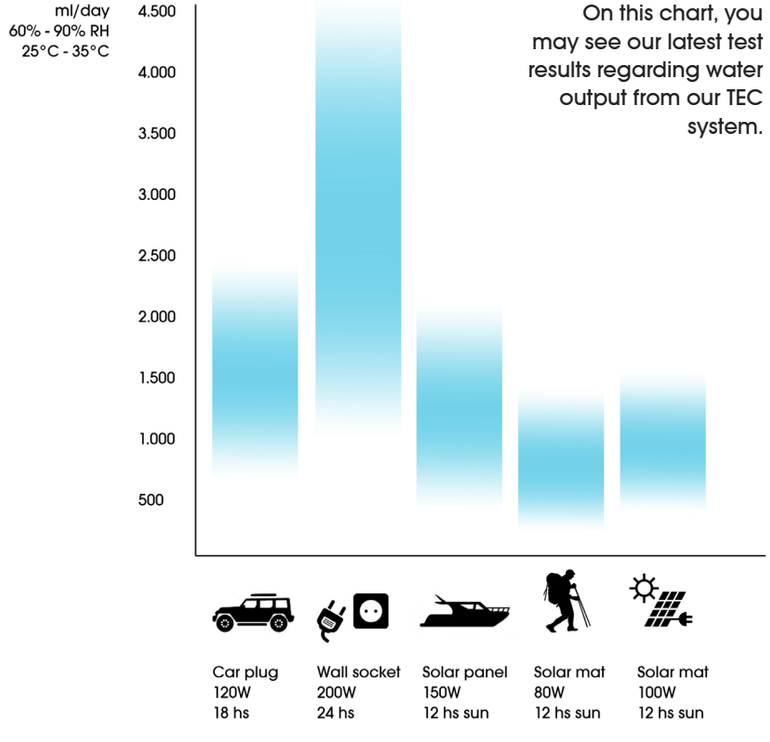
Testing

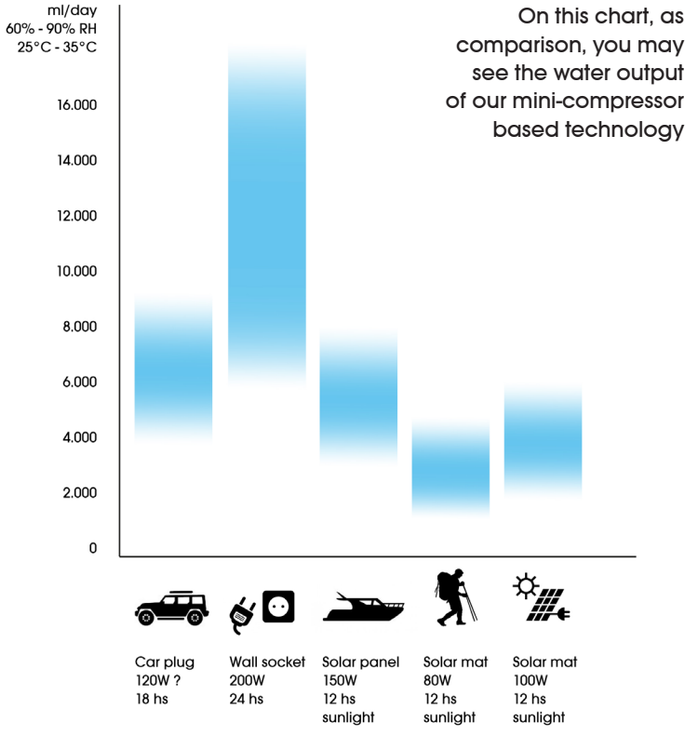
In the past months we have been testing our prototypes in different parts of the world, making improvements while learning by experience. We have already tested our prototypes in the US, Thailand, Hong Kong, Austria and Hungary.



During this last year, we have researched, developed and tested all relevant types of atmospheric water generation. Although other technologies guaranteed a larger water output, we have decided to stick to a TEC based one due to its minimal weight, durability and compactness, which are essential in an outdoor application. (Find more detailed information in the last part of this update)

Nevertheless, we have managed to refine our TEC based technology to an extent where the system is as energy efficient as technically possible.





* Values are based on prototype testing. Values may change in final product and are always dependent on energy input, humidity, climatic conditions, proper usage and others.

* Values are based on prototype testing and theoretical calculation.

Schedule

We are preparing our Airo bottle for production and will start producing in approximately 3 - 5 months from now. Bottles will be shipped to you in approximately 5 - 8 months from now.
We apologize for our delay and are very thankful for your understanding.

Never forget, innovation takes time, but it is worth waiting!

Fontus Ryde

Due to our regrettable delay in this development phase, we have decided to postpone the implementation of our technology in the Ryde system and not move into production at this point.

Every Ryde supporter will be automatically upgraded to a Fontus Airo without further charge. Supporters that are not happy with an upgrade may request a refund until the 30 of June 2017 by sending us an email with their product information to:

fontuscampaign@gmail.com

We apologize for this inconvenience and thank you for your understanding!

Refunds

We are aware that after our development phase, our product changed and that we will need more time to deliver it to you. So if you are displeased by our work, you may request a refund until the 30 of June 2017 by sending us an email to:

fontuscampaign@gmail.com

Requests will be collected until the 30 of June and processed afterwards.

On the next pages, for those that have a bigger interest in our activities, we made a more detailed summary of everything that has been going on at Fontus during this last year. Enjoy!

What have we been doing all this time?

Detailed description of our technical development and other activities

During this last year, we have mainly researched, developed, tested and compared with each other all relevant types of atmospheric water generation. Based on this knowledge, we have refined our own technology and adapted it to fit into the smallest case possible, our Airo.

But parallel, we have also founded a company, administered its well-functioning, administered the admission of new strategic partners, built up a network of cooperation partners, developed research themes, researched and designed water purification technologies, researched key materials and coatings, refined the design and usability of our bottle, developed alternative designs and functions, developed adjacent products for a more expanded target group, redesigned our Airo for manufacturability, moved our premises from one continent to another and now found several mass production partners we will continue our work with.

Here you may get an overview of all technical development topics we have been working on, be it in a practical manner through prototyping or in a theoretical approach:

Development at Fontus

Energy supply

off the grid
- solar panel
- wind energy
- thermoelectric unit power

on the grid
- plug
- car battery
- fuel generator

energy storage
- battery

energy recovery methods

Cooling system

- compressor
- Thermoelectric coolers
- Turbocompressor
- Pressure waves
- heat exchanger
- microwaves
- vibrational frequencies

- heat pipes
- copper foam
- water cooling

Air pre-selection

- membrane technology
- ionization
- dessicants
- electrospray ionization

Condensing unit

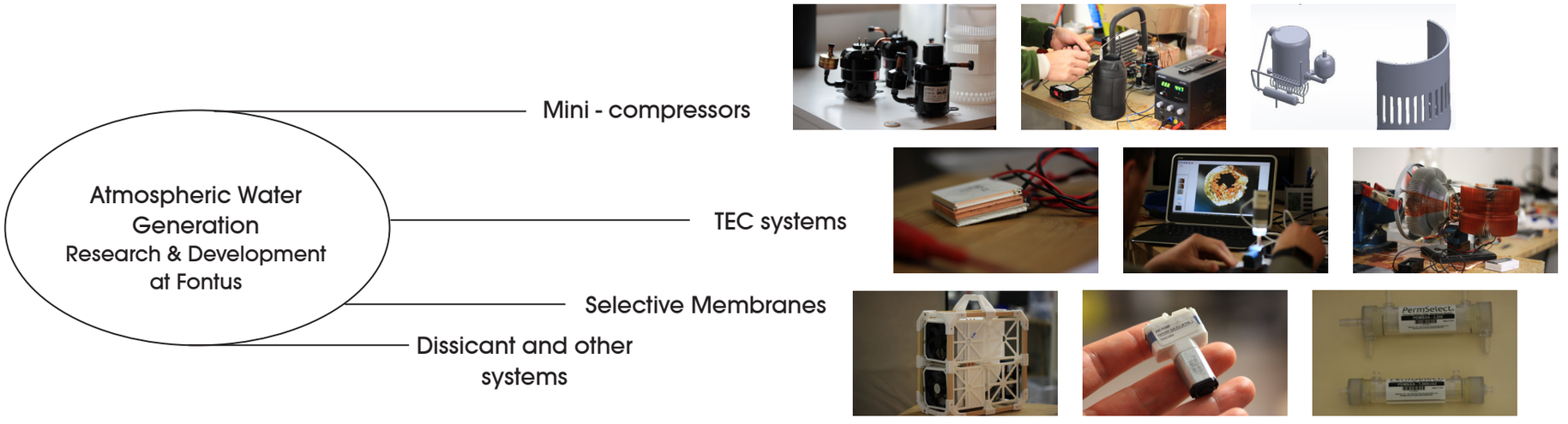
- thermoconductive materials
- shape
- patterns

- vibration induced dripping enhancement

- nanocoating
- capillary condensation

Electronics

- sensors
- power management
- energy recovery
- user interface



We worked specially intensely with selective membrane technology, the smallest compressors (mini-compressors), and TEC systems.

Both Membrane based systems and compressor based systems would guarantee a higher water output and are more energy efficient than TEC systems. Nevertheless, we decided to introduce a TEC based system in our Airo due to following reasons:

Size: TEC´s are extremely small. Using TEC´s guarantees a minimum size design and optimal usability.

Weight: TEC´s are extremely light.

No moving parts: Extreme compactness, high durability. Ideal for outdoor products.

Sourcing: Selective membranes still need to be better established on the market.

Complexity: Compressor based systems are complex and delicate. High risk when using in movement.

Costs: TEC´s are by far lower in costs than any other systems.

Prototyping - Testing - simulating

Research

We have researched into all methods of water harvesting from the air that are in a research phase and not commercially available. We developed new research themes that push the limits of physics in cooperation with international partners.

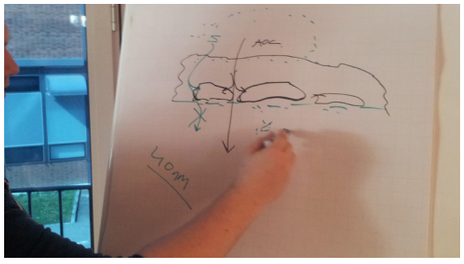
Together with Wetsus (European centre of excellence for sustainable water technology, NL) we have analysed the following research themes:

www.wetsus.nl

- Selective membranes on a small scale
- Capillary condensation
- Water as condensing surface
- Condensation above dew point
- Microwaves
- Electrically Enhanced Harvesting of Water Vapour from the Air
- Electric field as disinfection

We have also worked together with CEW (Centre of Expertise Water Technology, NL) on selective membranes.

www.cew-leeuwarden.nl



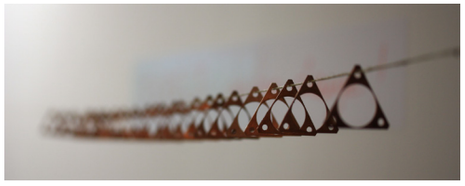
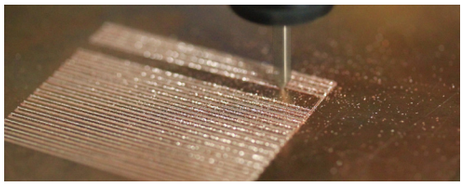
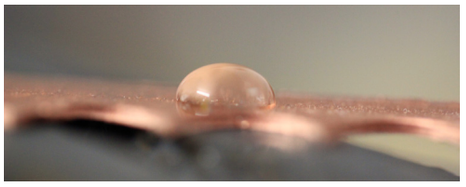
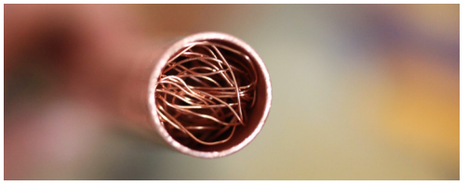
Water quality

We worked on special solutions for water purification in our Airo bottle. Highly innovative technologies have crossed our paths and we are still analysing some of them. Since they are all very new, the risk of implementing them in a final product is at this point in time too high.

Just as an example, we had a short cooperation with a member of eawag (Aquatic research, Switzerland) where we were introduced to GDM Technologies. These systems use gravity for water purification and have thus no external energy requirements. Naturally, the water flux rate is instead very low.

Surfaces and coatings

We have done extensive research, prototyping and testing of different surfaces, shapes, forms, constellations and coatings for optimal and enhanced condensation. We were able to identify optimal surfaces and coatings and implemented them into our Airo system.

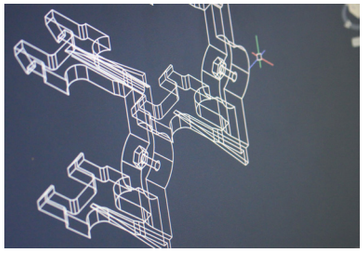
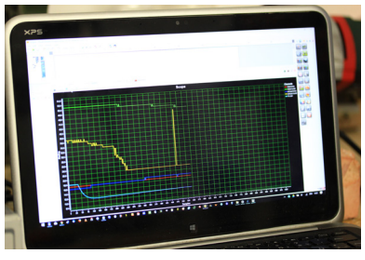
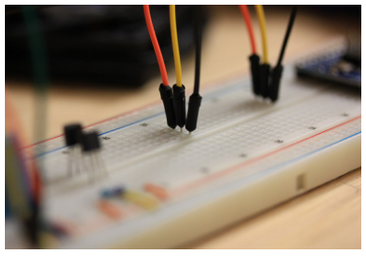
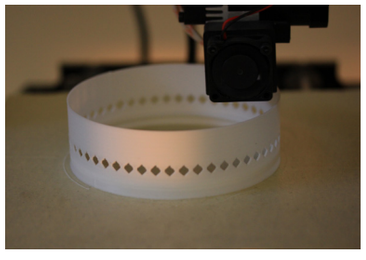





TEC

Our biggest work has been dedicated to the extensive development and optimization of a TEC based system. Our goals and challenges were to make the system as energy efficient as possible and as small in size as possible. We are proud to have achieved close to the maximum efficiency, technically possible.

CAD

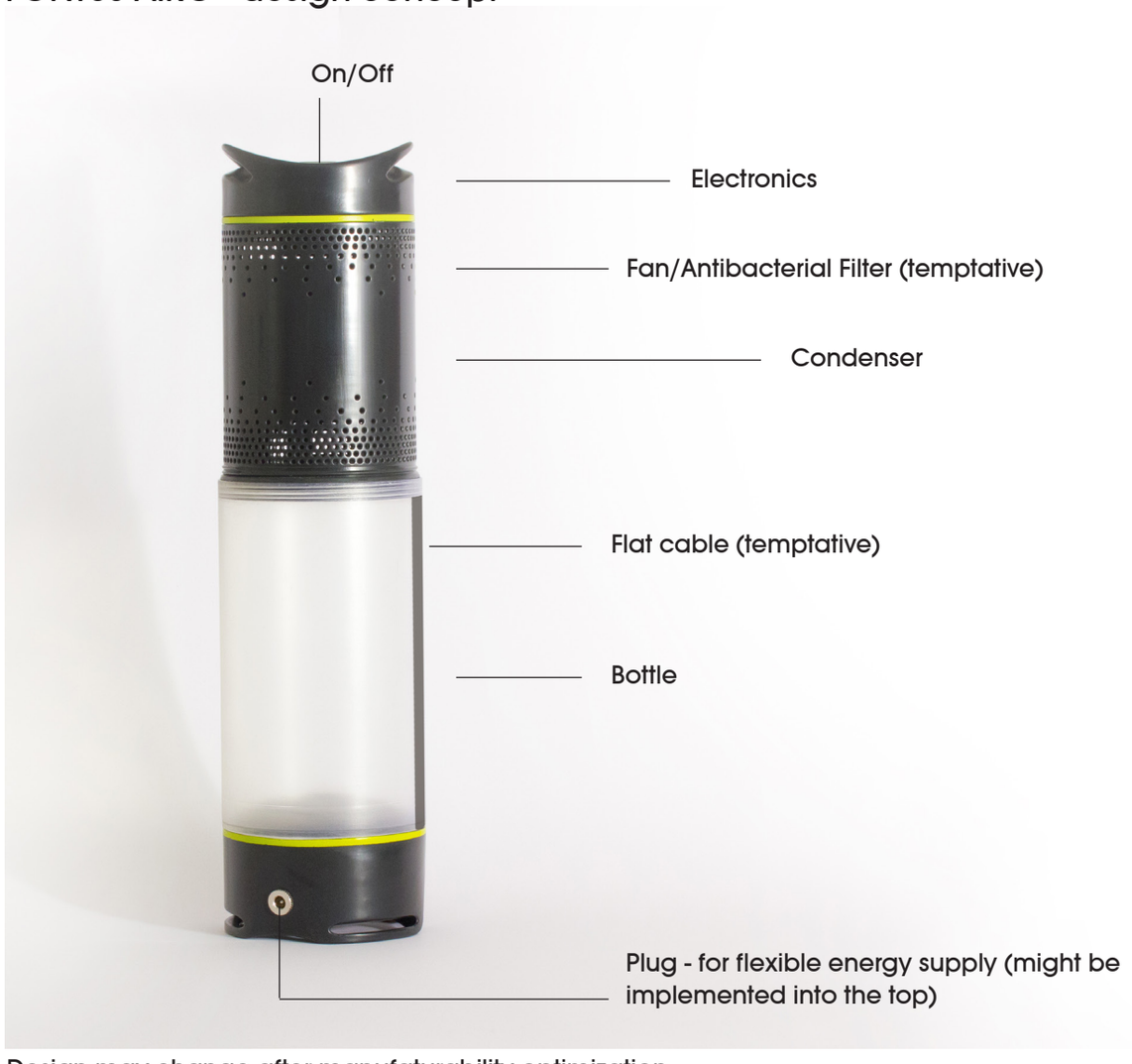
We have constructed countless models as CAD for 3D printing, analysis, simulation and manufacturability optimization.


Production

We are defining our production partners for mass manufacture. After a period of pre-production development, optimization of the model, sourcing and final material definition, we will launch production.

FONTUS AIRO - design concept



Design may change after manufaturability optimization.