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Zeoloop

Closed-loop, energy-optimized, renewable system for cold deliveries, storage and easy retrieval.

Observation

More and more 2025 urban/semi-urban dwellers rent housing and vehicles, instead of owning. They prefer fresh foods, but they don't want the hassle of travel to stores or supermarkets, or of modifying their schedules to meet a delivery person, or of paying more for valet-style delivery into their kitchen. They are health-conscious as well as Earth-conscious, and are willing to walk a bit if that's good for the planet and for their wallets. Price, efficiency and sustainability matter to them.

Conclusion

By 2025, street/curbside congestion, delivery/safety issues (time from curb to each apartment door, building access, packages posing a trip hazard left in corridors, etc.) and environmental and economic costs will lead many food delivery services and their predominantly value-conscious customers to embrace a new type of delivery. To a secure, temperature-controlled pickup-friendly location that's on the customer's route and by the customer's choice.









Solution

Zeoloop containers cool themselves down rapidly to as low as -18 C using water+zeolite reversible adsorption* (or, at Miele's discretion, similar eco-friendly natural reactants). Inbuilt sensors, predictive algorithms, IoT app/cloud links, and self-adjusting smart valves to dynamically maintain temperature for up to 24 hours or more. Stationed at accessible locations citywide, where their surplus heat gets reused for other services. *A validated clean, regenerable technology superior to others.

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 <p>Universal location: Zeoloop capsules can be located anywhere because they have no need for external source of power during cooling process.</p>	 <p>Cooling: Rapidly achieves cooling temperatures as low as -18 C! Smart valves regulate temperatures to within 1 C accuracy, and for 24 hours or more.</p>	 <p>Storage: When not in use Zeoloop capsules can be stored indefinitely until they are needed again.</p>
 <p>Efficiency: Shared space means the same system serves multiple users, lowering the costs, energy consumption, and increasing recovery of waste heat.</p>	 <p>No additional parts: Zeoloop stations provide users with reusable bags for carrying their food. User can also reuse their own trolleys to bring their food home. This way the users do not have to make a return just to put the car, fridge or other devices back.</p>	 <p>Opportunity: During the Zeoloop cooling process, the surplus heat will be transformed into additional energy or made useful for partner businesses.</p>
 <p>On-demand flexibility: Different temperatures are possible within the same capsule. Portable enough to be rented/purchased and carried, e.g. on a camping trip, and returned to any Zeoloop station.</p>	 <p>Environment: While the zeolite regeneration step needs energy, the system is overall cleaner and ecologically safer than current cooling methods.</p>	 <p>Accessibility: Delivery services find it easier and cheaper to service shared and public spaces. Avoiding building/home access issues, security barriers.</p>

Pain points solved!

Pain Point

2025 urban realities make it harder to receive cold delivery in-hand in-person, or left on doorsteps AND dynamically maintained at optimal temperatures in customer's absence. Customers shall expect energy-efficient, safe cooling solutions with flexibility in locations, user freedom and low costs.

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zeoloop
partners

Whether in a building's shared laundry room, or in a public laundromat, the surplus heat energy from Zeoloop capsules becomes hot water for washing machines, garment steamers, building heating etc. Enabling new business partnerships.

Product in its environment

Bagged orders arrive and are dropped off into Zeoloop capsules. Zeoloop stations are in public spaces, shared multipurpose spaces. Customers can keep tabs, extend their reservations up to # of cold hours predicted, get key code via phone app. OPTION to rent capsules and take them away on trolleys.

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A cleaner way



zeoloop capsule

For further information about this system please refer to the link in the description.

1. Absorption (Process of cooling the interior down)



50 C. to 75 C. heat

Cool items 5 C. to 8C.

Frozen 0 C. to -18C.

Zeolite

water

IoT module & Smart valve (regulates temperature).

Insulator

2 Smart valve for extra cooling.

2. Desorption (process of capsule regeneration)



(No food inside during this step)

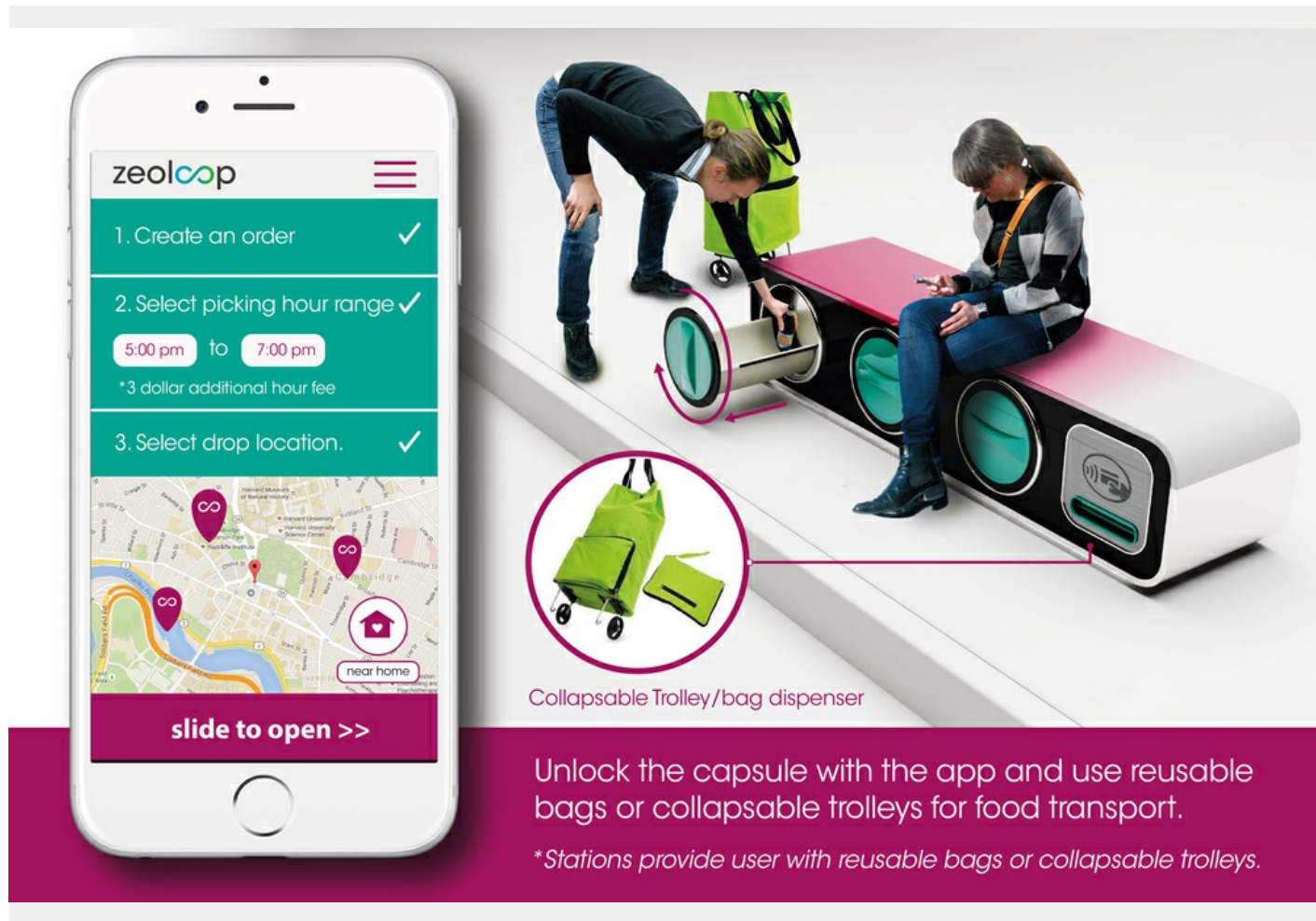
zoom

Product views

1. Valve opening lets zeolite absorb water, thus vaporizing H₂O, and cooling down the interior. Zeolite warms up too, but heat leaves via capsule's outer shell.
 2. Capsule regenerated by external heating. H₂O molecules escape from zeolite and return as condensate to water chamber.
- www.goo.gl/iDm56Q

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Collapsible Trolley/bag dispenser

Unlock the capsule with the app and use reusable bags or collapsible trolleys for food transport.

**Stations provide user with reusable bags or collapsible trolleys.*

Product in use

A customer gets to choose the Zeoloop station his order is delivered to. He can track it and the temperature on his phone. If he arrives too late, he may have to pay late fee by phone before he can retrieve his order. He can bring his shopping bag/trolley, or buy one from the station's dispenser.

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The image shows a smartphone displaying the Zeoloop app interface. The app has a teal header with the 'zeoloop' logo and a menu icon. Below the header, there are three main sections: '1. Create', '2. Set', and '3. Set'. The '2. Set' section is expanded, showing options: 'Assign a friend to pick up' (with a person icon), 'Temperature tracking' (with a snowflake icon), 'Share key' (with a lock icon), and 'Add Hours' (with a clock icon). A map is visible in the background of the '2. Set' section. To the right of the smartphone, the 'zeoloop' logo is displayed in a large, stylized font, with the tagline 'Empowering the customer' below it. Below the logo is a line graph showing temperature tracking. The x-axis represents time from 1pm to 7:00, and the y-axis represents temperature from -2 to 1. A solid teal line shows the current temperature, which starts at approximately -0.5 at 1pm and rises to about 0.5 at 5:00. A dashed teal line shows the predicted temperature, which continues to rise to about 1.0 at 7:00. A vertical dashed line at 5:00 is labeled 'now' in a teal circle.

zeoloop
Empowering the customer

*Dynamic temperature tracking, prediction engine, and user control

Additional info

Surplus heat from capsules isn't wasted. So, Zeoloop stations mean energy savings for community, for apartment complex residents, for any businesses that house the stations, etc. Customers love the flexibility, control, price-savings. One may even take capsules away on rent (e.g. for camping trip).

Keep cool with Miele

Miele

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Creative's profile



sarkar
Ideator

Third party materials used

<https://skalgubbar.se>

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Collaborators



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