

Hackathon 2023 Team 1

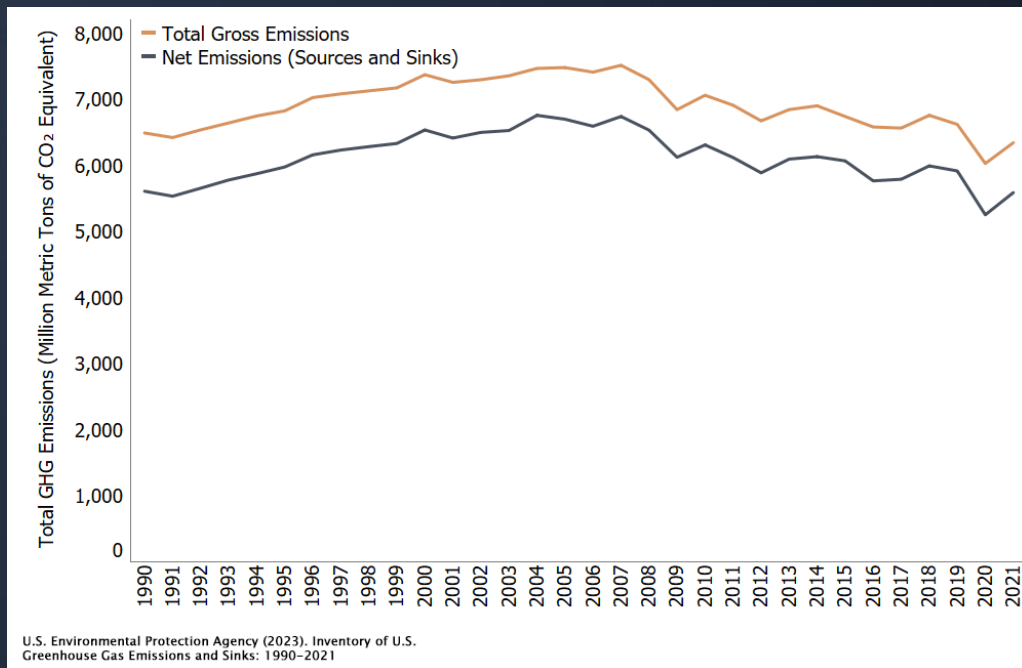
Tell our Story/Inspiration

- On average, homes in the U.S. use almost 50% of the energy usage specific for heating and cooling
- Some Americans are not home when energy is running → leaking of unused energy



What's the Problem?

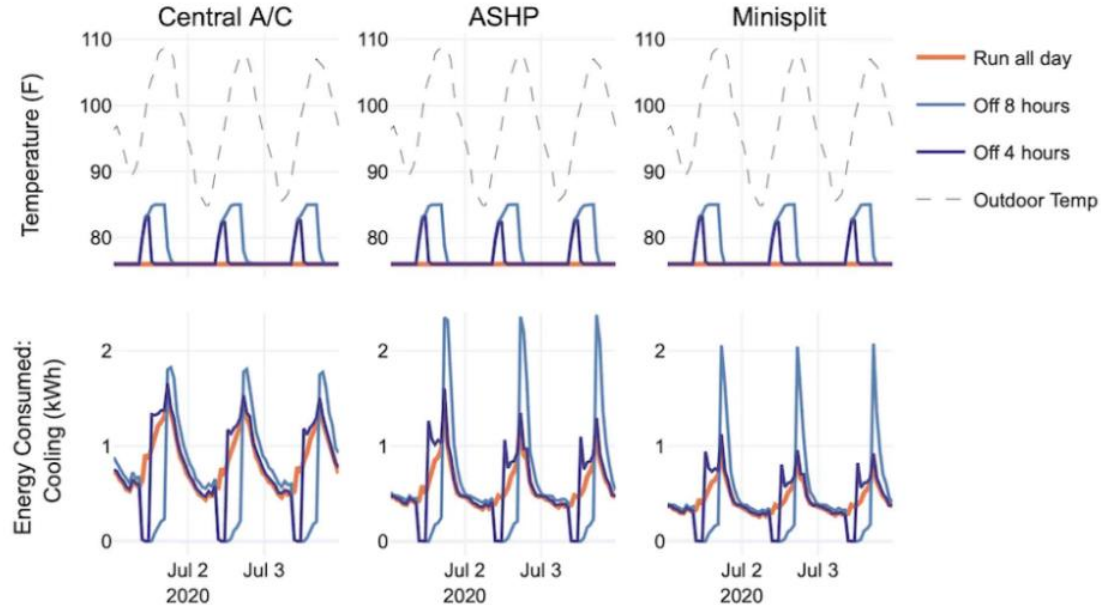
- Constant use of electrical energy emits greenhouse gases and wasted energy causing pollution and climate change.



Why can't we just turn the AC off?

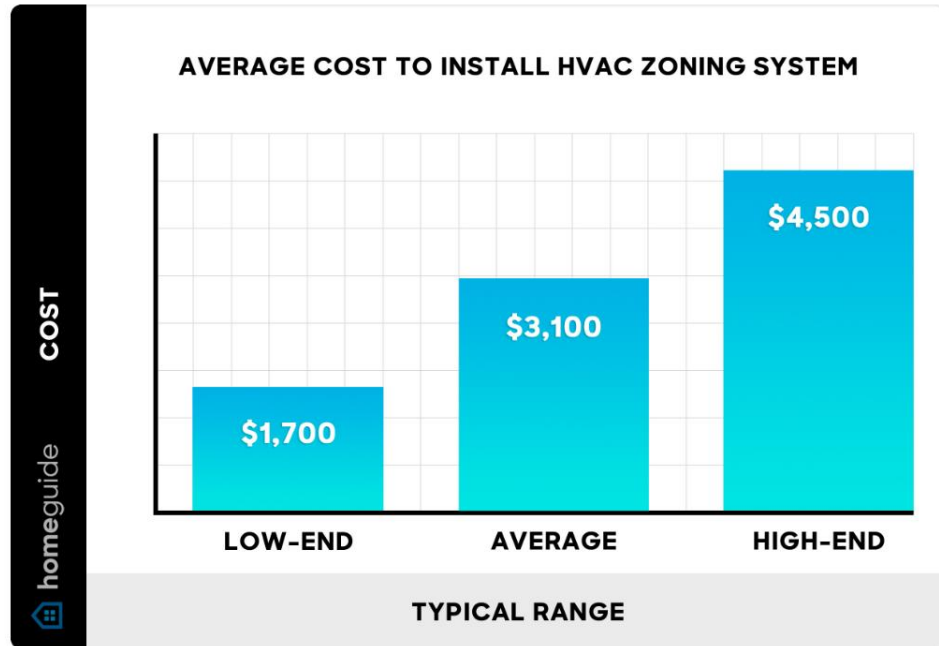
- Humidity increases -> bad for home furnishings and the house itself.
- Takes longer to reach the comfortable temperature.
- Hurts the A/C system.

Energy consumption and temperature profiles based on A/C strategy, Arizona



What products are already on the market?

- There are other available products like HVAC Zone Dampers.
- A high-cost solution by adding onto your Air Duct System a series of Plates that can be opened or closed to regulate air flow for heating and cooling for each room.





What's the Solution?



IntelliVent





How it works

- Proximity sensor to see if a room is occupied
- Humidity and temperature as a check for unoccupied room
- Address security concern



Benefits

- New homeowners with variable speed HVAC looking for a cheap solution
- Our aim is a very low-cost alternative to even the vent systems.
- Doesn't connect to a separate thermostat, ease of install
- Projected 10% energy savings on fan in HVAC system

Profit Margins

After considering the cost of materials and the installation cost when setting up IntelliVent into the average American home, the projected price per vent for production is 40\$

We would then do market analysis to see what profit margins we could take

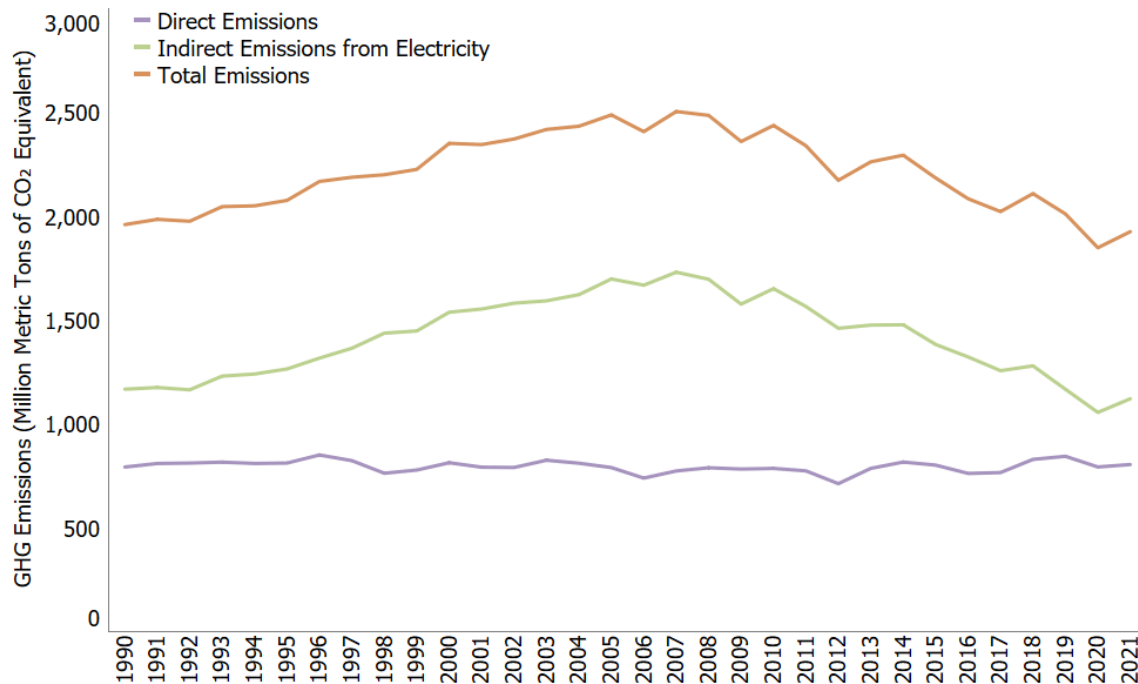
Projecting 264,200 newly completed homes as the targeted core customer base (out of the total given by census.gov)

Look to expand to existing houses, and new houses as they are completed

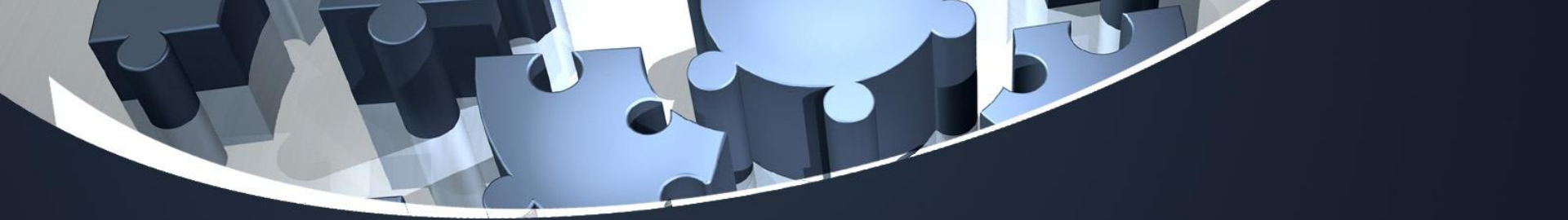
Variable speed HVAC systems projected to grow from 2.69B to 3.99B over 7 years.

Trends/Future

- Launch: expected to be 6 months-1 year (including testing and research)
- Partnerships with larger buildings: hotels and apartments



U.S. Environmental Protection Agency (2023). Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2021



A Greener World, One Vent at a Time

