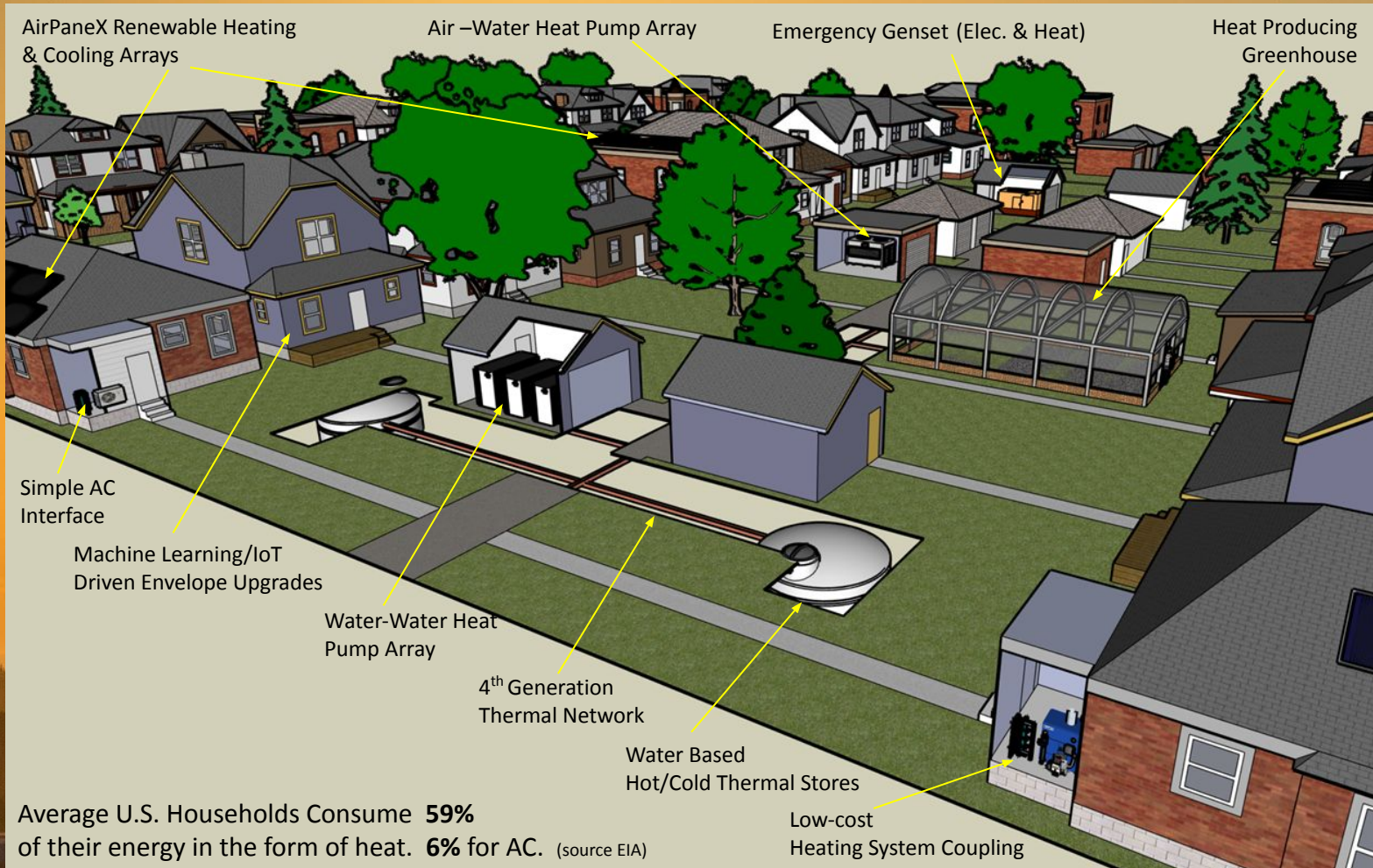


Renewable Thermal Microgrid #ThrivingCommunities

Concept Summary

Thermal Microgrids are an alternative upgrade strategy particularly beneficial for underserved communities. A thermal loop delivers heating & cooling from resources distributed throughout the block. Homes couple to the loop via heat exchangers (HXs) providing energy to augment building WH & HVAC hardware. First costs and energy costs are lower due to the simplicity of new building hardware, the economies of scale for the network and energy resources, and supplemental renewable heating & cooling.



Average U.S. Households Consume **59%** of their energy in the form of heat. **6%** for AC. (source EIA)

Emissions Free
Thermal Energy

Lower Total
First Costs

Simplified
Building Upgrades

Thermal Storage

Alternative
Financing &
Ownership Models

Water/Air Sourced
Heat Pumps

Multi-skilled
Workforce Training

Job Generation