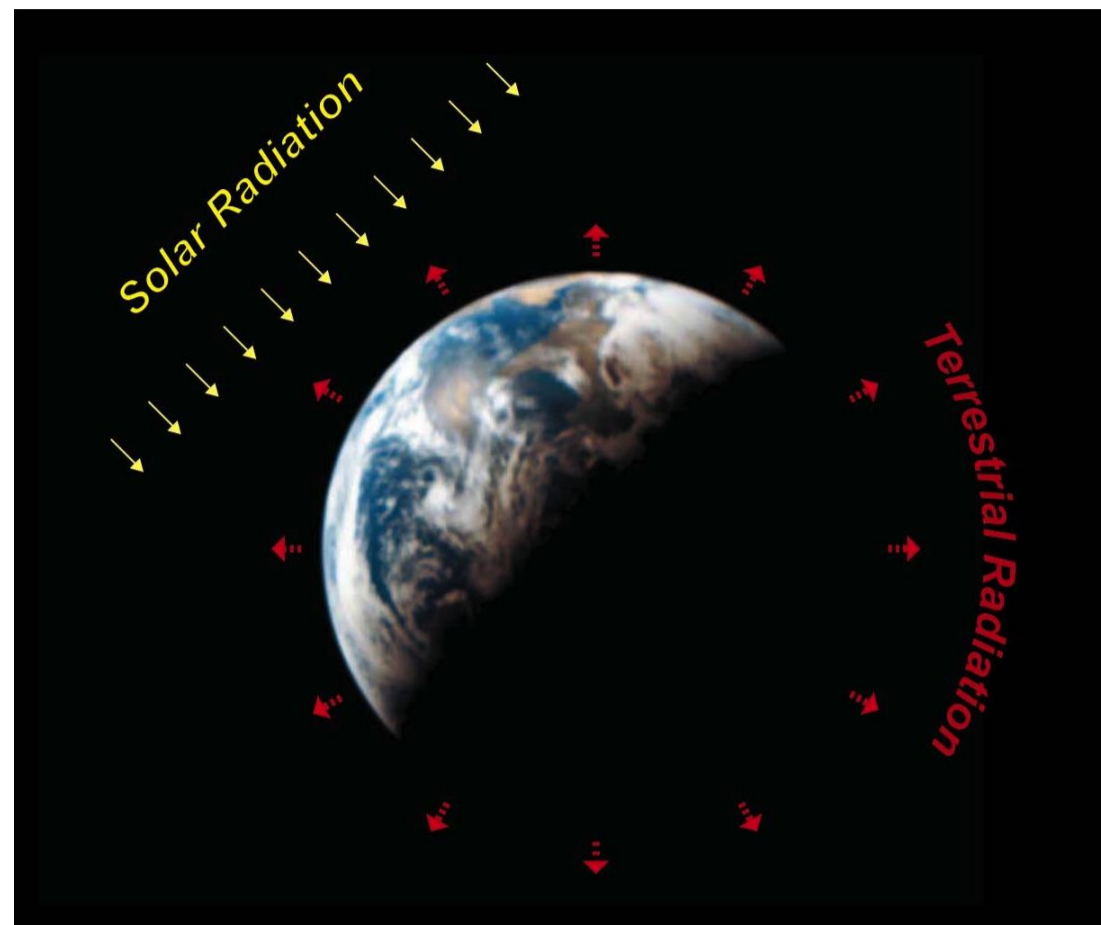
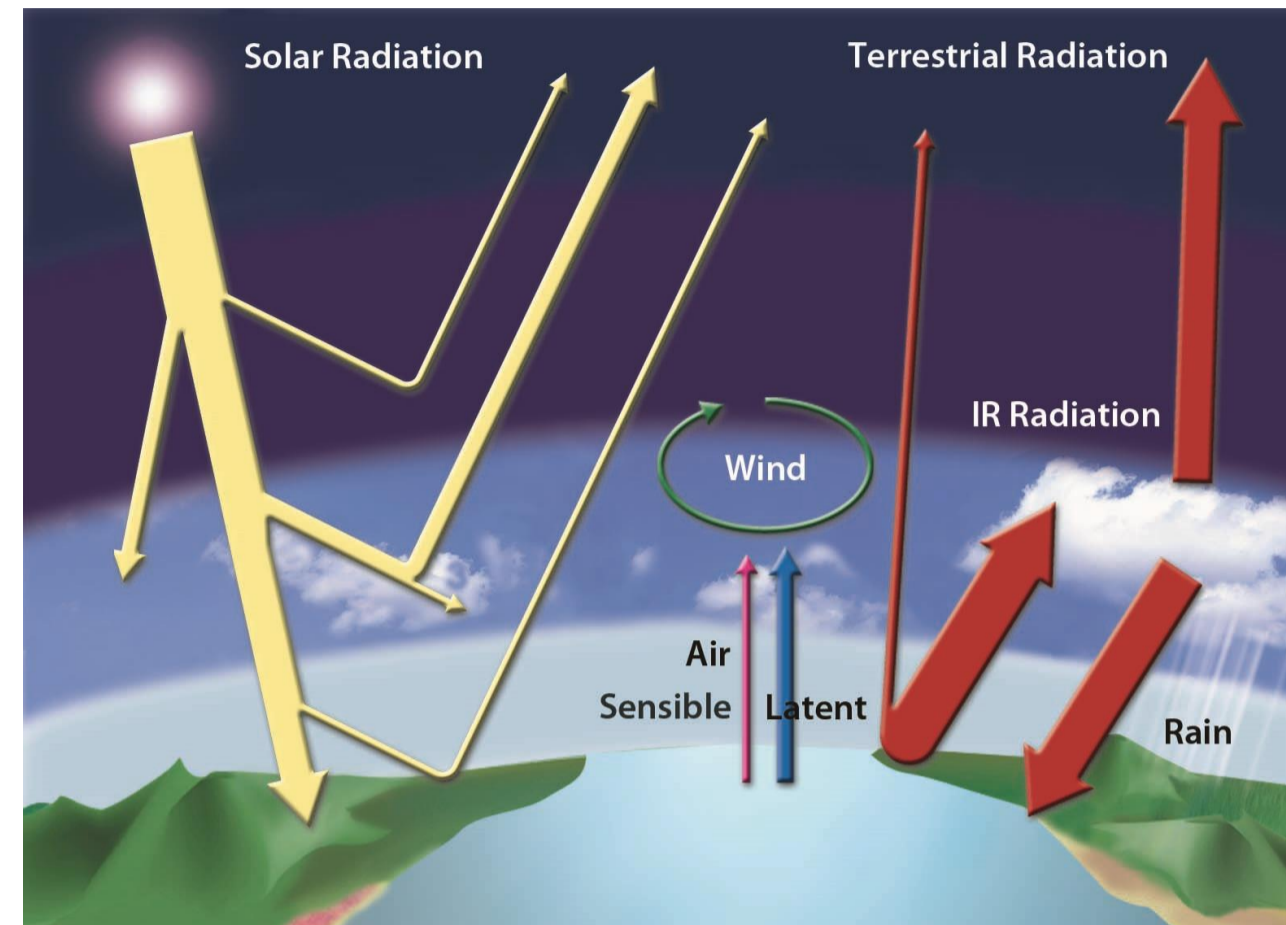


SYSTEM CONCEPT



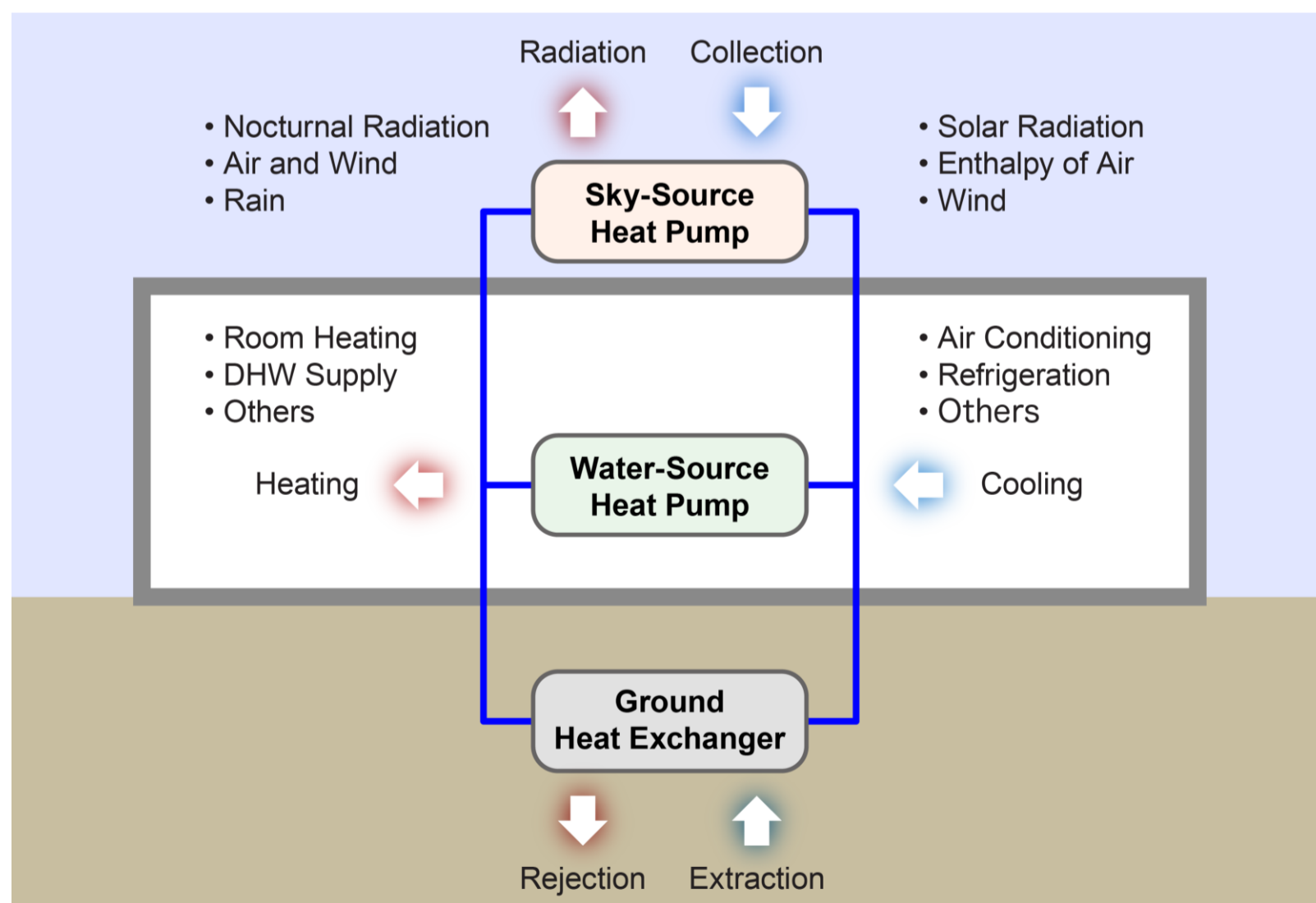
Solar Radiation and Terrestrial Radiation are sole Input and Output of the Earth.



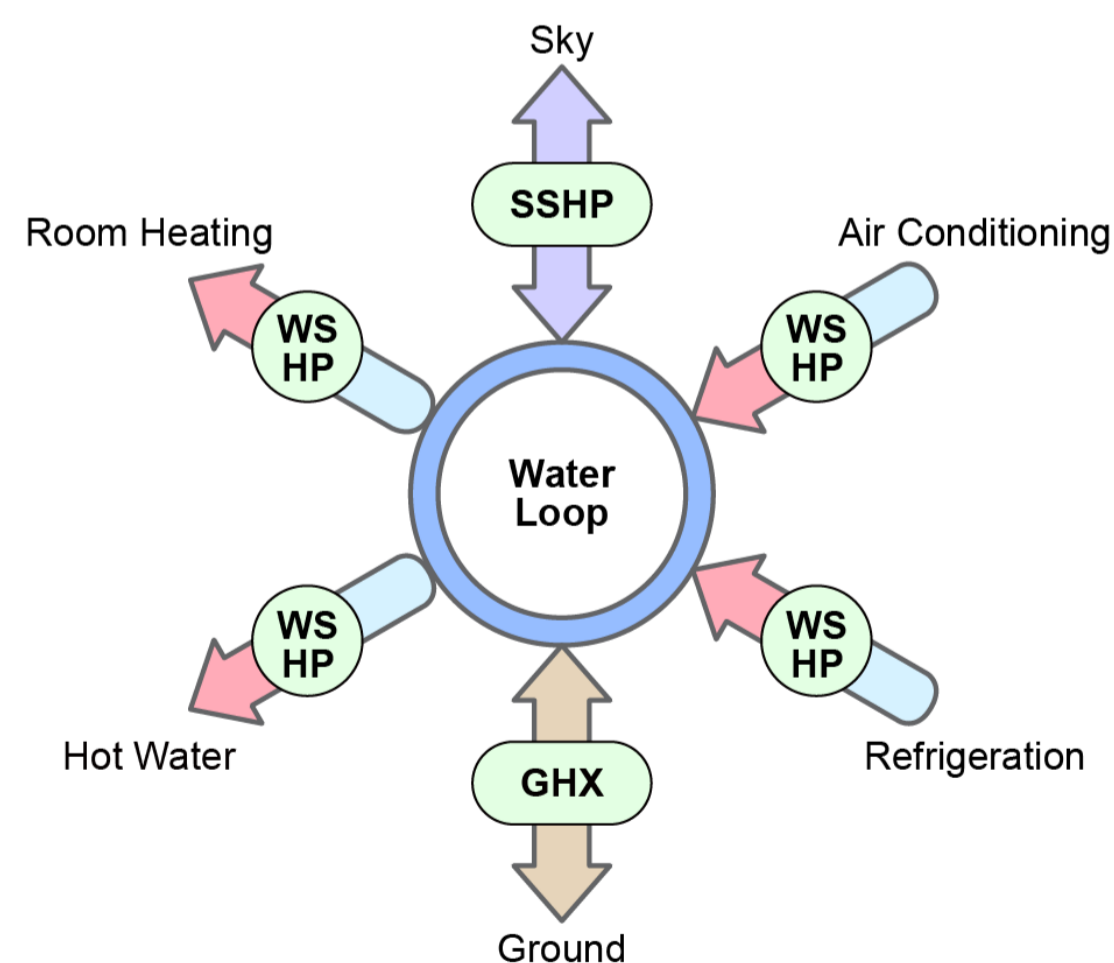
Both Radiations cause Energy Flows in the Atmosphere and Generate Various Kinds of Renewable Energy.

ELEMENTS	UTILIZATIONS	PROS & CONS
Solar Radiation	heat & power	↑ ample, ↓ intermittent
Ground Heat	heat source & sink	↑ stable, ↓ limited
Nocturnal Radiation	heat sink	↑ natural, ↓ scant
Atmospheric Air	heat source & sink	↑ ubiquitous, ↓ mediocre
Wind	enhance heat transfer	↑ easy, ↓ undependable
Rain	heat sink	↑ effective, ↓ sporadic

Each Renewable Energy has its own Advantages and Disadvantages: Intermittency of Solar Radiation, Limited Availability of Ground Heat, etc.



Renewable Ground Loop (ReGL) System is Multiple-Source and Multiple-Use.



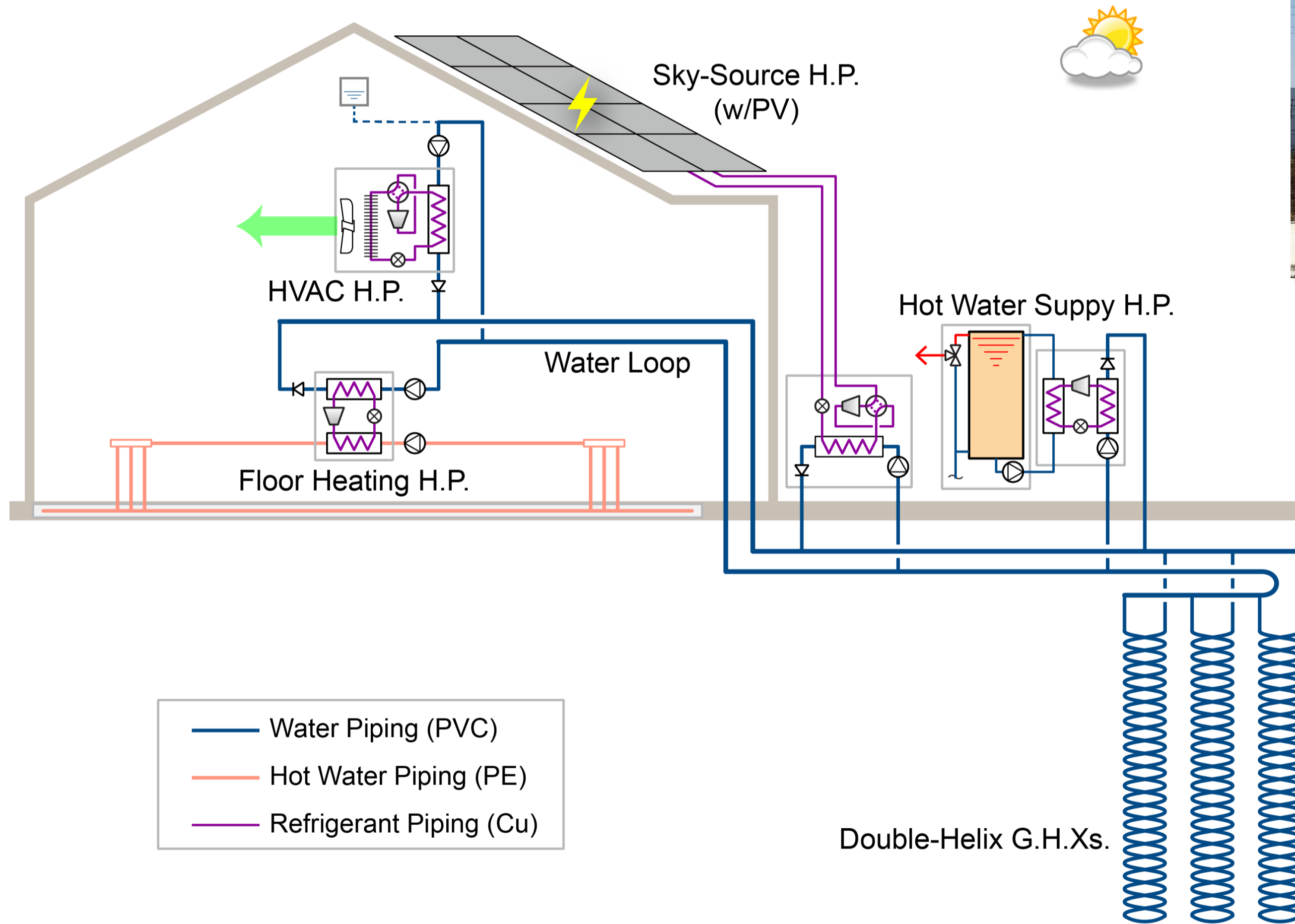
Hot or Cold rejected by Heat Pump is Recovered, Stored, and Adjusted.

The ReGL system may

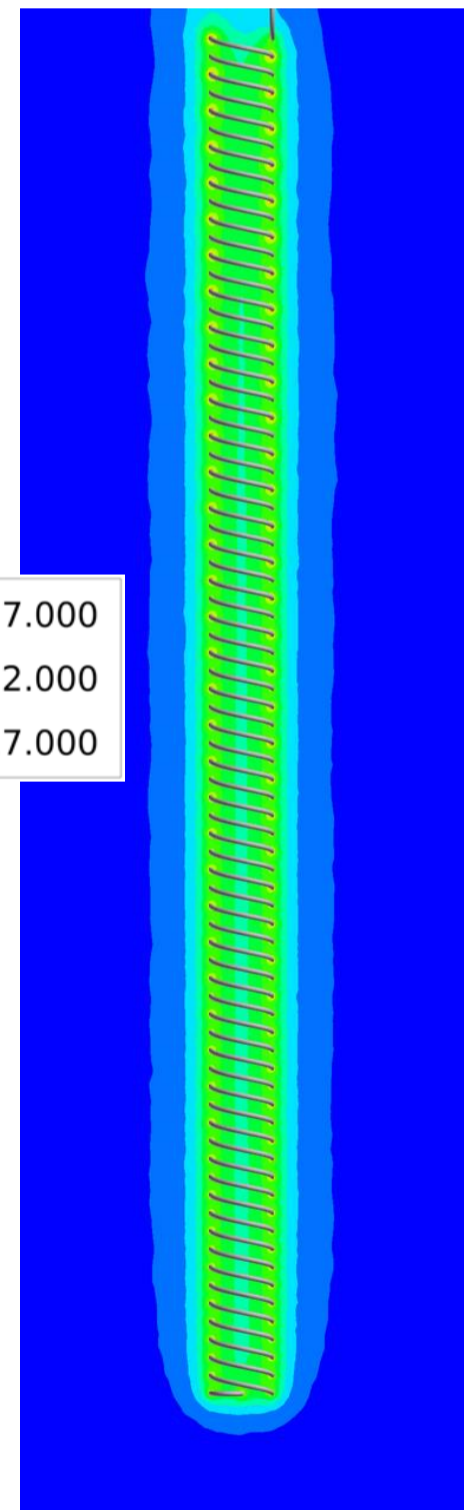
- alleviate heat island and global warming.
- save energy and assists in net ZEB.
- adapt to power supply network.
- reduce operation and maintenance cost.
- be environmental friendly.
- create new business opportunities.

The ReGL System may have Multidimensional Advantages.

TECHNOLOGY DEVELOPMENT



RE House for Technology Verification



Double Helix is Advantageous in Manufacturing (left) and Heat Exchange with Ground (right).

Test System of the RE House System is composed of a Sky-Source Heat Pump, Helical Ground Heat Exchangers, Water-Source Heat Pumps for Room Heating and Air Conditioning, Floor Heating, and Domestic Hot Water Supply.