

THE BATTERY

A RENEWABLE ENERGY PARK FOR SAN JOSE

The greatest challenge California faces in deriving 50% electricity from renewable resources by 2030 is energy storage. California produces significantly more renewable energy than it is able to store, resulting in wasted energy and ongoing reliance on fossil fuels.

The Battery—A Renewable Energy Park for San Jose celebrates Silicon Valley's innovative advances in renewable energy and offers a practical solution to California's energy storage deficiencies. Within the park, the world's first grid-scale Organic Flow Battery will supply 35,000 households in San Jose with renewable energy from sun-down to sun-up.

OBSERVATION TOWER

A 200' tall spiral stair invites visitors to climb and engage the battery's central engine, granting views of the Guadalupe River system and Silicon Valley beyond.

RESERVOIRS

Storing charged electrolyte, the reservoirs create a visual buffer between SAP Center and the park.

ELEVATED WALKWAYS

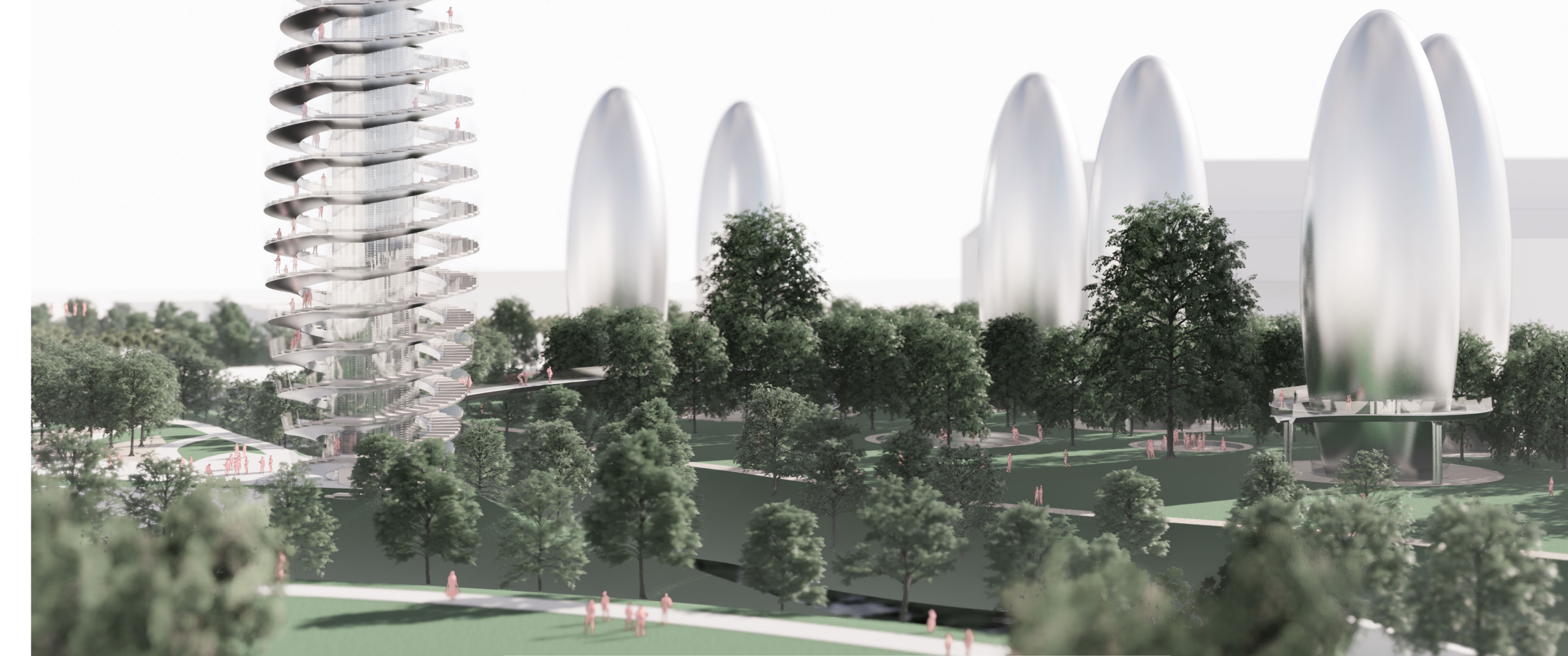
Stroll through the park's tree canopy, tracing the networks between the reservoirs and tower.

GATHERING PLACES

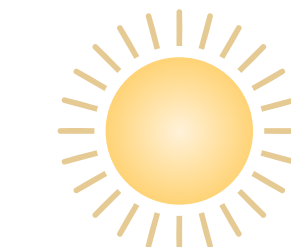
Landscape interventions, such as small amphitheaters, create places to bring people together.

A BATTERY IN THE PARK

Park visitors climb a 200' spiral stair to gain views of San Jose and the valley beyond.



THE WORLD'S FIRST GRID-SCALE ORGANIC FLOW BATTERY



A SOLUTION: RENEWABLE ENERGY STORAGE

A 500MWh organic flow-battery stores California's excess energy generated during the day to release back to the grid at night.

CELL STACKS
The flow battery's "cell stacks" transfer electrical energy to liquid organic electrolyte. The cells operate in reverse at night, converting charged electrolyte back into electricity.

POSITIVE RESERVOIR
Stores positively charged organic electrolyte.

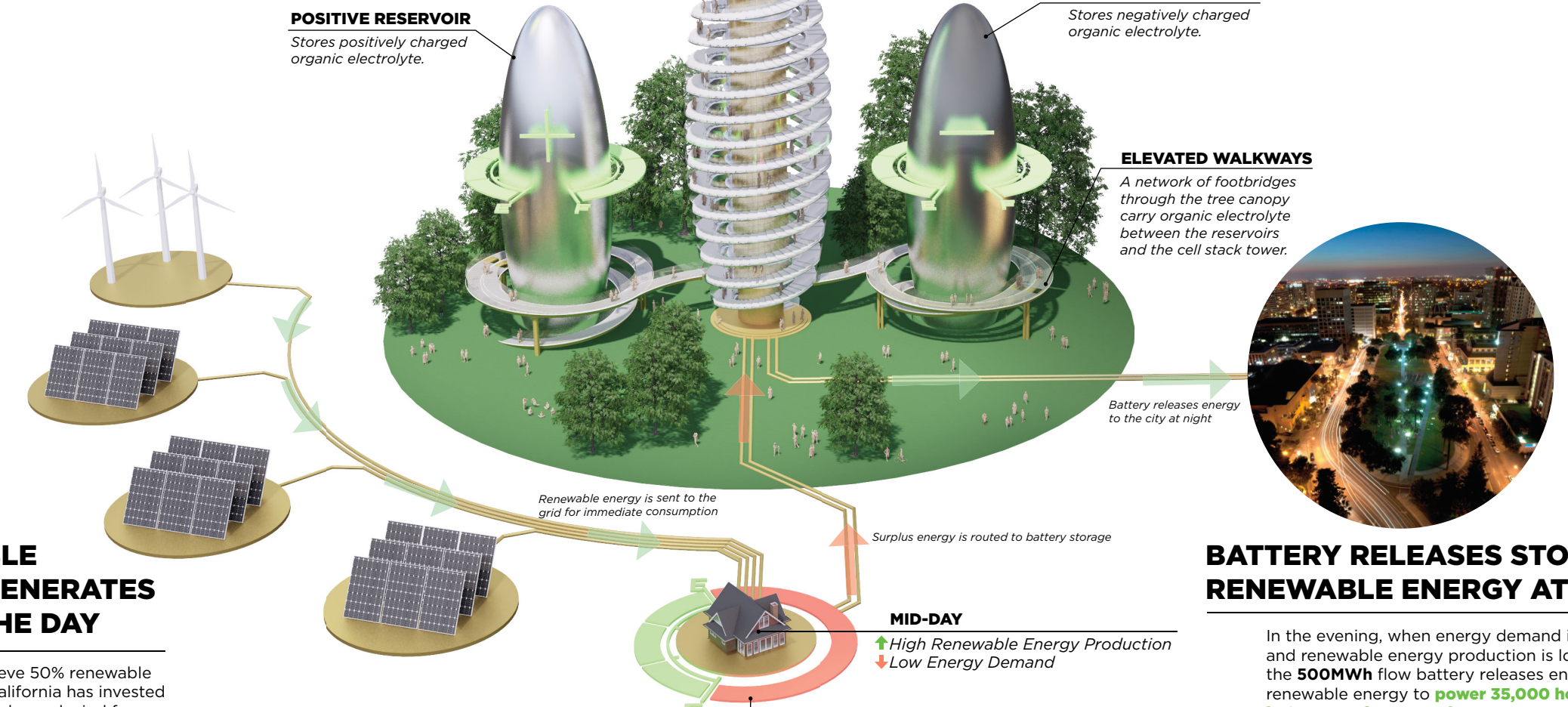
OBSERVATION TOWER
A 200' tall stair wraps the tower's core of "cell stacks", encouraging visitors to interact with the battery's components and gain views of San Jose and Silicon Valley.

NEGATIVE RESERVOIR
Stores negatively charged organic electrolyte.

ELEVATED WALKWAYS
A network of footbridges through the tree canopy carry organic electrolyte between the reservoirs and the cell stack tower.

RENEWABLE ENERGY GENERATES DURING THE DAY

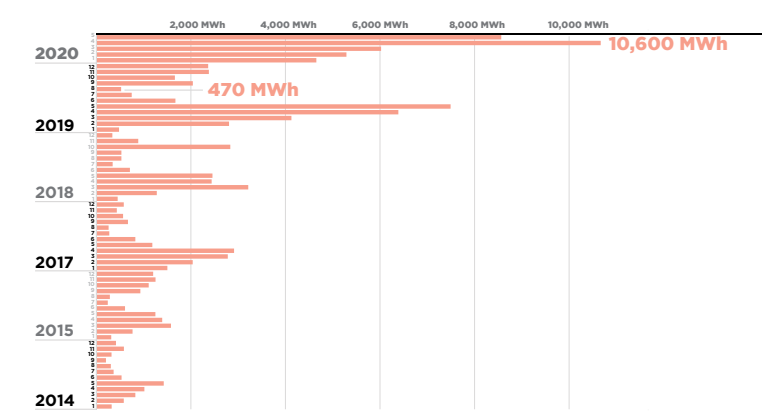
In an effort to achieve 50% renewable energy by 2030, California has invested in a large fleet of solar and wind farms. With the sun overhead, renewable energy production peaks at mid-day.



BATTERY RELEASES STORED RENEWABLE ENERGY AT NIGHT

In the evening, when energy demand is high and renewable energy production is low, the 500MWh flow battery releases enough renewable energy to power 35,000 households in San Jose from sun-down to sun-up.

A PROBLEM: RENEWABLE ENERGY OVERLOAD



CALIFORNIA DAILY ENERGY LOSSES
California frequently creates more renewable energy than it can use on demand. At mid-day, when demand is at its lowest, California is increasingly forced to shut down solar and wind farms to avoid overloading its grid. Energy losses fluctuate across the seasons, but over the past 12 months California on average lost no less than 470 MWh a day (August of 2019). California set a record in May of 2020 with a daily average loss of 10,600 MWh. As more renewable energy come online, energy losses will continue to increase in the future.

