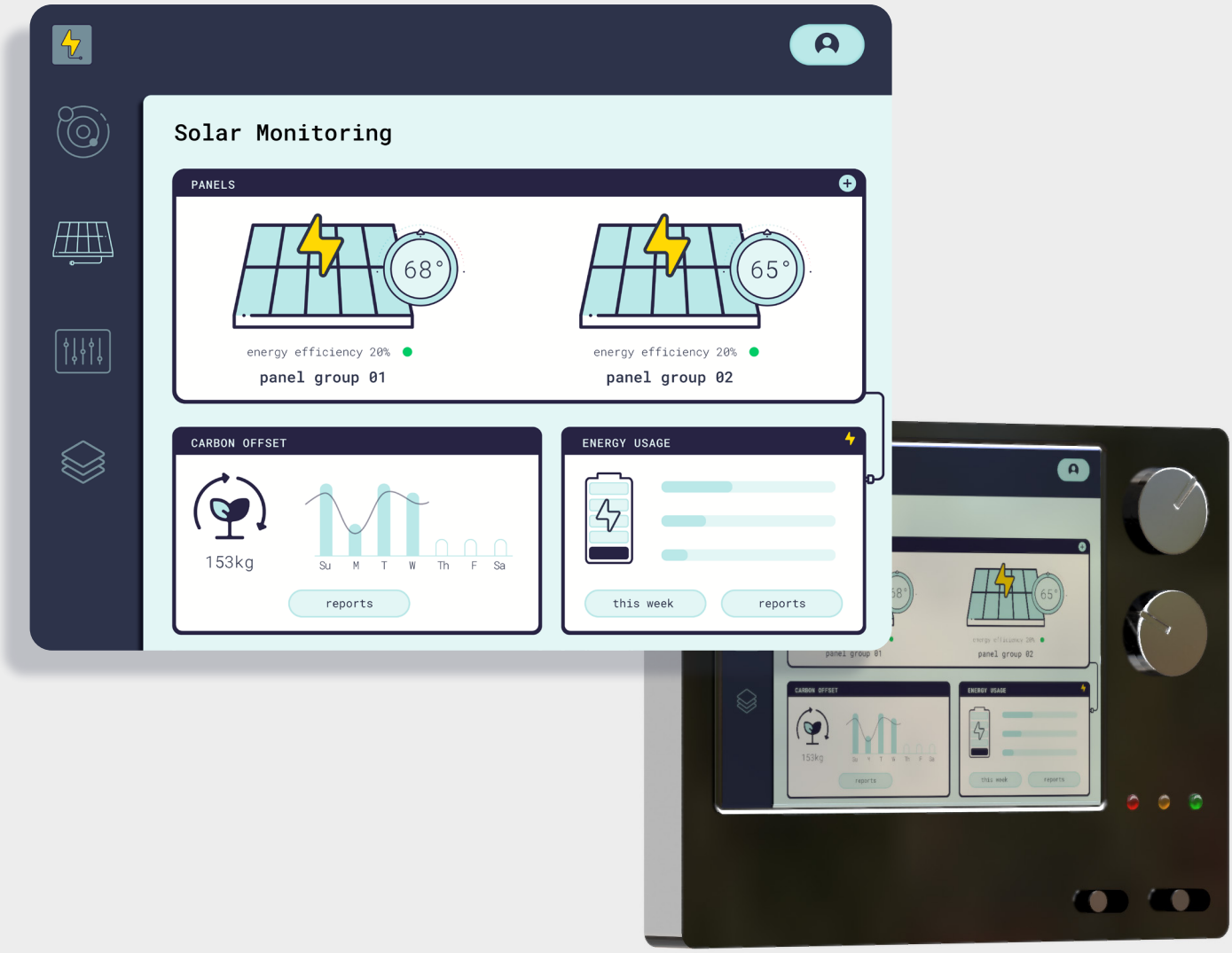

Solar Monitoring
PANELS
68°
65°
energy efficiency 20%
panel group 01
energy efficiency 20%
panel group 02
CARBON OFFSET
153kg
Su M T W Th F Sa
reports
ENERGY USAGE
this week
reports

creative brief

|solis| solar panel interface

product details

a control and monitoring system for home solar panels, thermals, and general eco-efficiency.

target audience

owners of one or more home solar panels

objectives

provide a convenient + easily accessible system for monitoring and analysis of home solar power systems. incentivise users to improve energy efficiency through customization and goal-setting features.

proposed features

- control temperatures in ranged zones, humidity,
- set usage goals + limits,
- monitor status, energy produced, view month over month comparisons for usage and production + home vs grid production logs,
- adaptive zones + AI learning for rooms that trend warmer or cooler than house average & adjust power/heat draw for those rooms accordingly,
- efficiency+production monitor for both individual and panel groups,
- view CO2 reduction/savings over time,
- set work/vacation schedules,
- set goal-based checkpoints to reduce eco impact/ improve energy efficiency

client

LG Solar Division; Subdivision of LG, a lifestyle electronics company that creates consumer electronics, appliances and mobile devices designed to help customers connect with those who matter most. Product will b e compatible with any home solar panels, but will cater to LG's NeON® R and NeON® R Prime product lines.

competitors

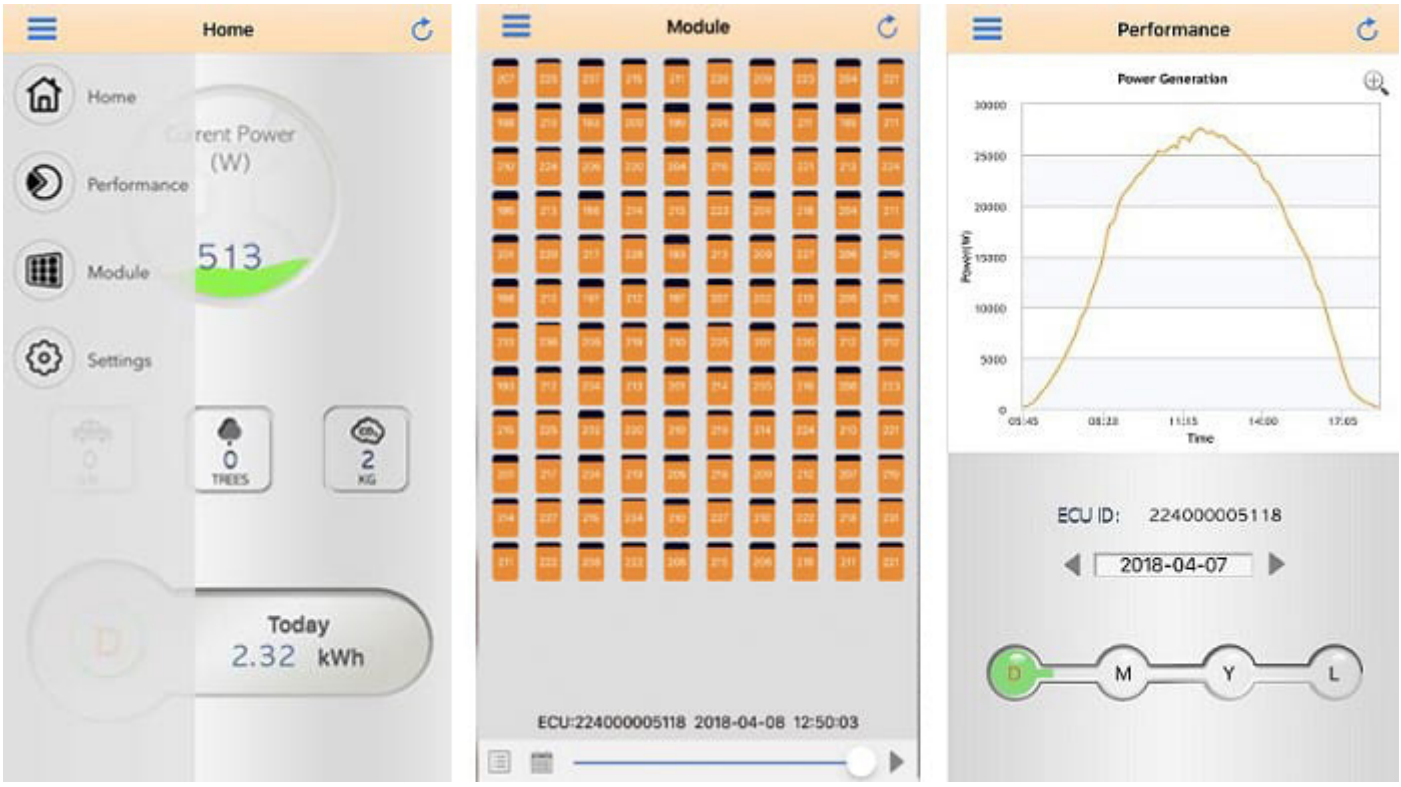
EMA
MySolarEdge
Enlighten
Fronius
SMA Sunny Portal

deliverables

static prototype of digital interface
mock up + design of physical device

competitor research

Energy Monitoring & Analysis (EMA)

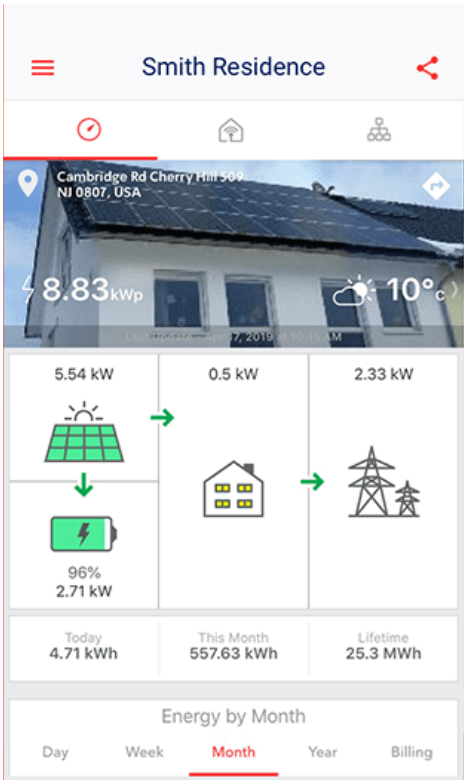


The Energy Monitoring & Analysis (EMA) App is one that many of our KC Solar customers love. It's great for tracking their solar array performance in real time through their mobile devices.

Not only can you see a graphic representation of your solar panels and their individual performances. But you can also track your system's output at a daily, weekly, monthly, yearly or even lifetime level.

It also helps calculate energy savings and environmental savings — broken down in terms of gasoline gallons, trees, and CO2 emissions.

MySolarEdge



The SolarEdge monitoring application is another popular app when it comes to tracking your solar system's output and energy production. It's also easy to access from any internet-enabled devices, including computers or tablets.

Key benefits of MySolarEdge include the robust reporting and analysis tools, which even gives users the option to schedule automatic reports. Plus, you can set up automatic alerts on any system issues.

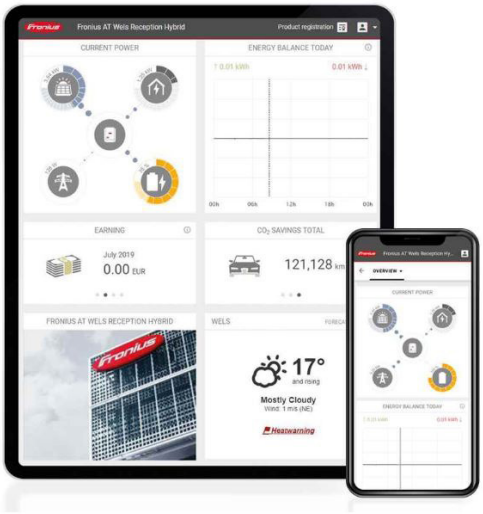
In addition to having full visibility to your solar system's performance — from a technical and financial perspective — MySolarEdge can even help customers detect excessive energy usage. Which can help you get in front of a bigger electric bill.

Enlighten

Enphase's main solar monitoring application is web-based. Meaning it's meant to be viewed from a desktop or laptop computer. But they recently launched a mobile app which is able to do many of the same actions. And help customers monitor their solar system from the palm of their hand.

See how much energy you're consuming and storing, and check out each panel's individual production. With a real-time, in-depth view of your solar system, it's easy for system owners to make informed choices about energy use.

Fronius Solar.web

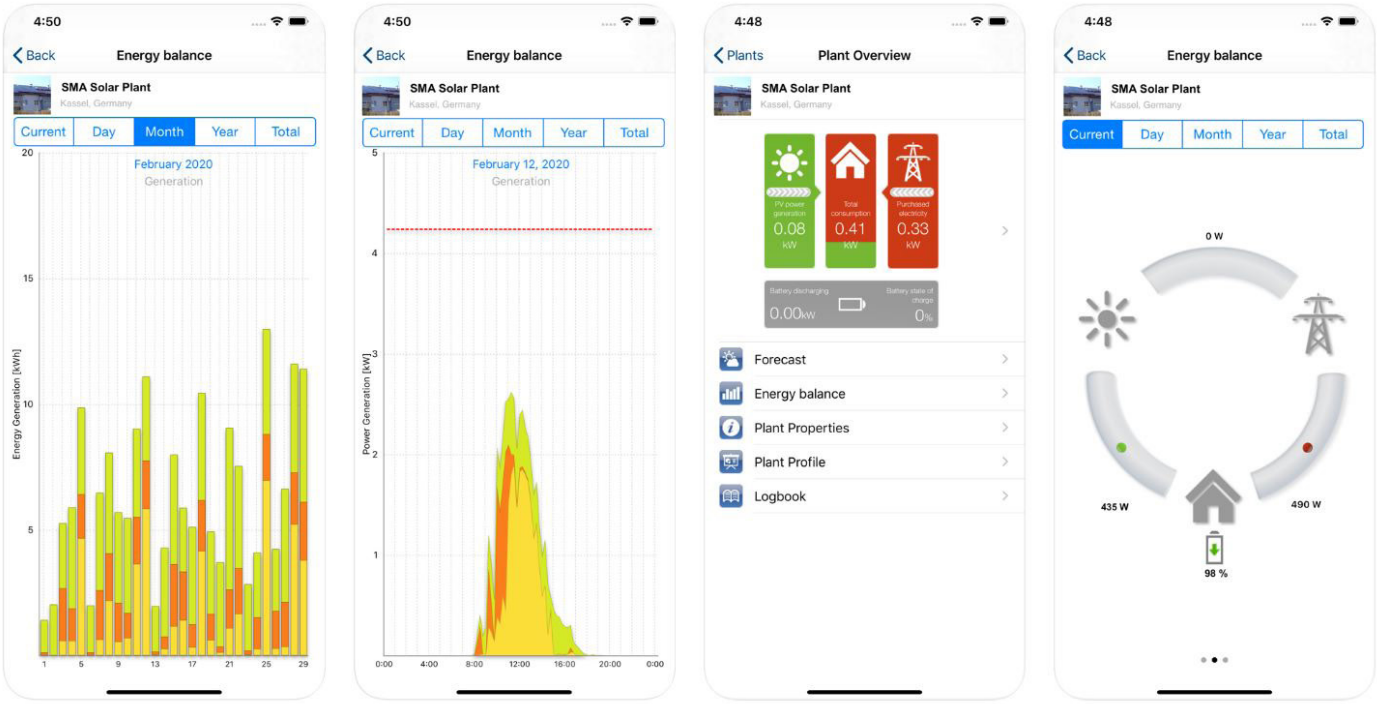


Fronius is a web-platform-turned-mobile-app. Similar to many of the other monitoring apps, you'll find a snapshot of energy yield over certain timeframes. And even sustainability metrics — like CO2 saved, trees planted, and money saved.

But the Fronius app has one additional special feature. It's now compatible with Apple Watches.

Even if you don't have your iPhone on you, the Fronius Watch App can provide information about your solar system from your wrist. See your system's current output, current consumption rate, and even the current state of charge. Not too bad for a watch screen!

SMA Sunny Portal

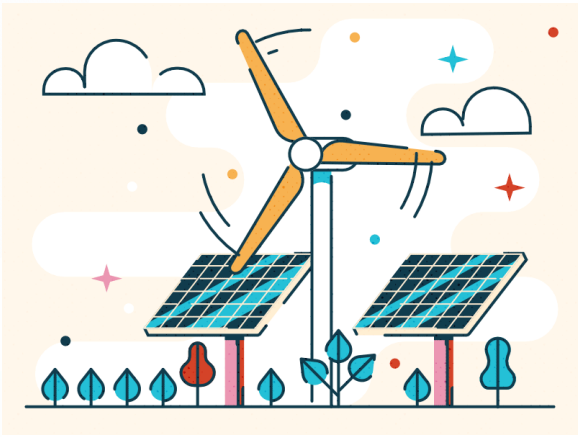


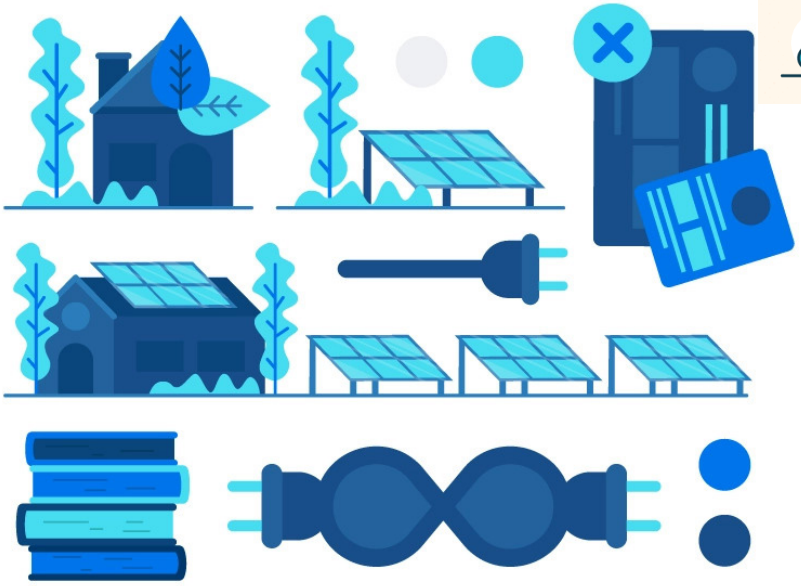
The SMA Sunny Portal app prides itself on being a user-friendly option for solar system owners. With easy-to-understand reporting and desktop access as well as the app. Customers are able to find all the information they need about their solar panels.

From the “Plant Profile” page, customers can track and monitor their power, annual production, saved CO2, and more details about their solar systems. Functionality and data are prioritized in the user experience.

moodboard

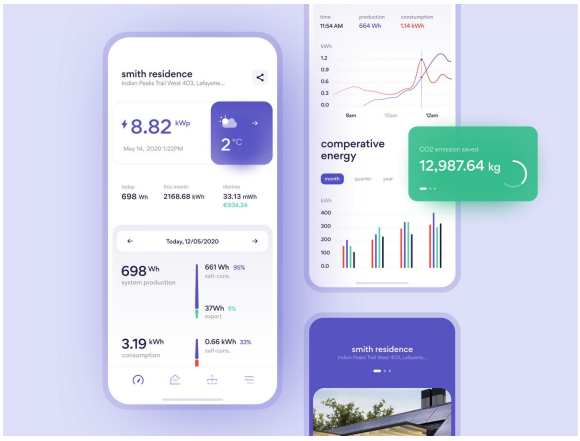
illustration styles

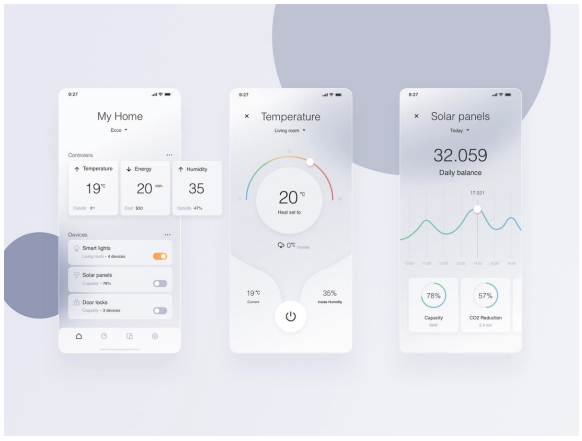


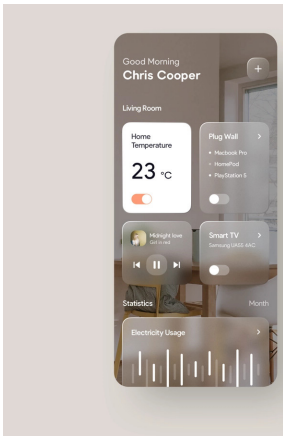


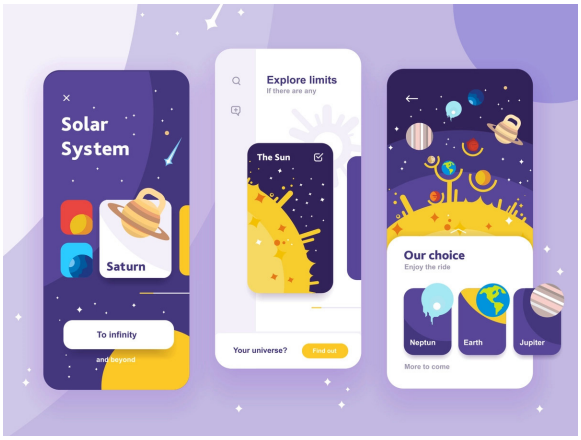
moodboard

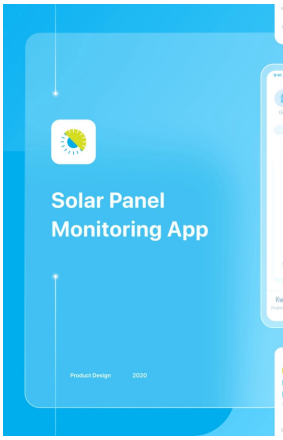
solar monitor + smart thermo ui

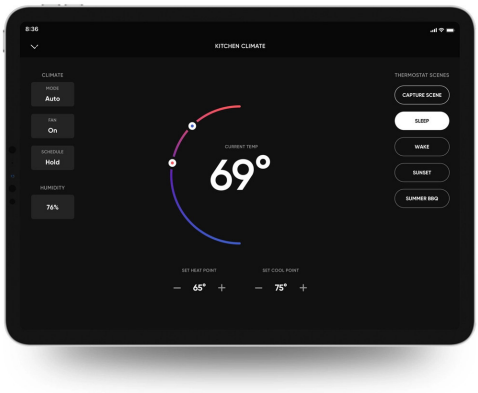


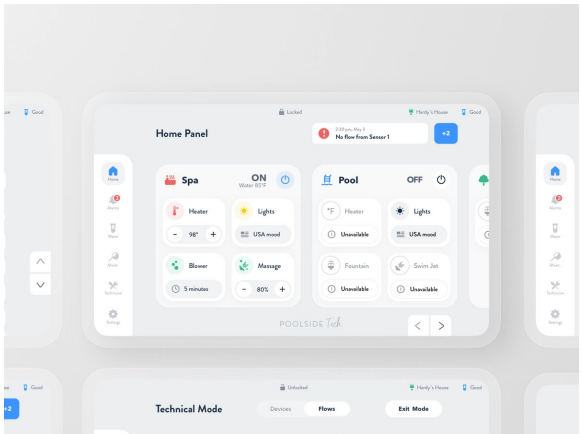


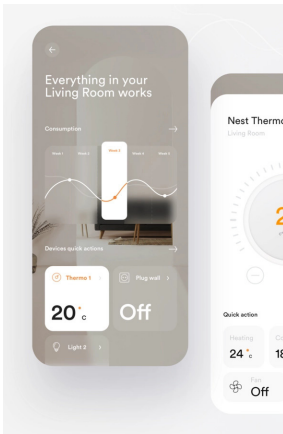


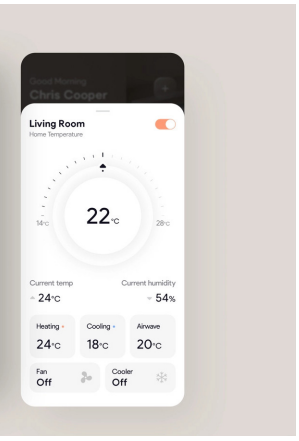


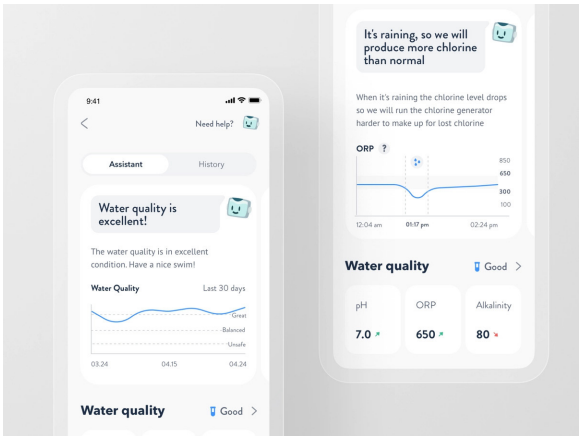


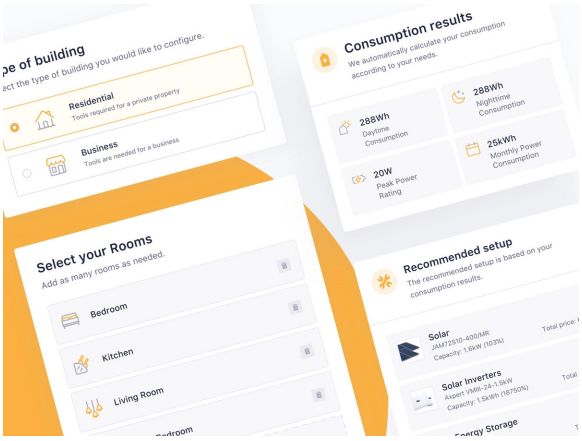


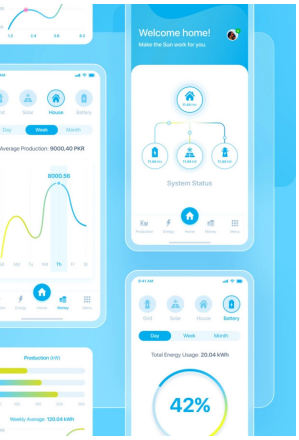


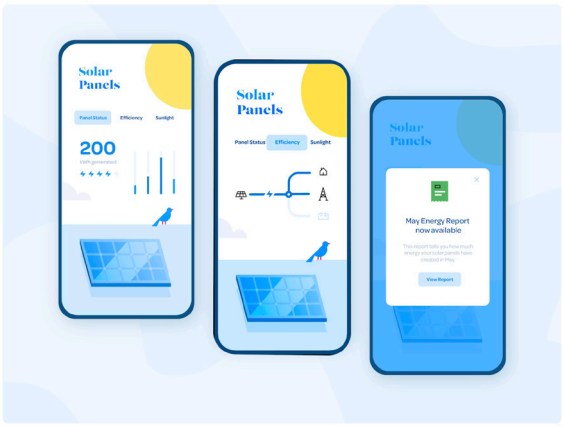



Living Room
22
Current temp
24
Current humidity
54
Heating
24
Cooling
18
Airwave
20
Fan
Off
Cooler
Off

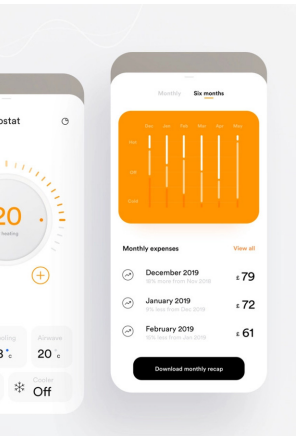

Need help?
Assistant
History
Water quality is excellent!
Water Quality
Last 30 days
Water quality
Good
It's raining, so we will produce more chlorine than normal
When it's raining the chlorine level drops so we will run the chlorine generator harder to make up for lost chlorine
ORP
Water quality
Good
pH
7.0
ORP
650
Alkalinity
80

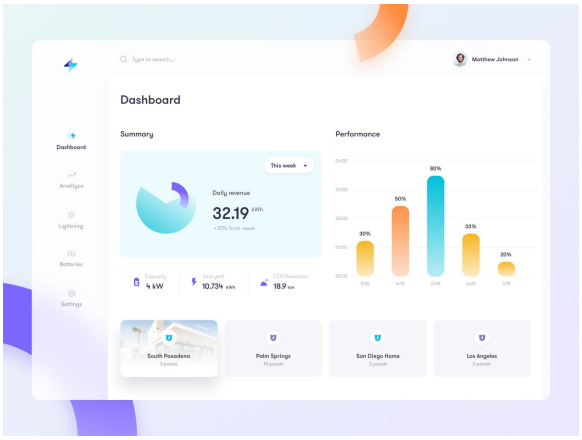

Consumption results
We automatically calculate your consumption according to your needs.
288Wh
Daytime Consumption
288Wh
Nighttime Consumption
20W
Peak Power Rating
25kWh
Monthly Power Consumption
Select your Rooms
Add as many rooms as needed.
Bedroom
Kitchen
Living Room
Recommended setup
The recommended setup is based on your consumption results.
Solar
Solar Inverters

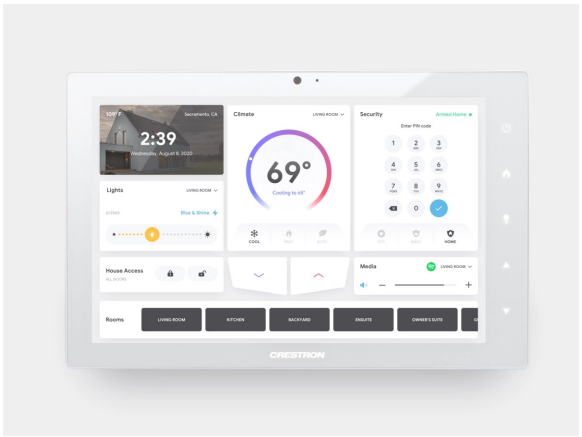

Welcome home!
System Status
Total Energy Usage: 20.04 kWh
42%


Solar Panels
200
Solar Panels
Solar Panels
May Energy Report now available

Summary
18.0387
Palm Springs
18.0387
58,470
28,059
Palo Alto
Today
9:00-14:00
4Solar
Manage your power easily


Six months
Monthly expenses
December 2019
79
January 2019
72
February 2019
61
Download monthly recap
Off


Dashboard
Summary
Performance
Daily revenue
32.19
Matthew Johnson

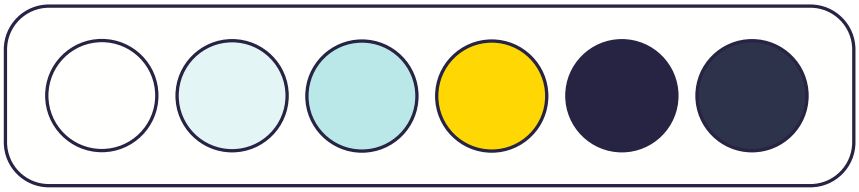

2:39
69°
Climate
Security
Lights
House Access
Media
Rooms
CRESTRON

interface identity

"SolOS"

logomark

color palette



typefaces

Roboto Mono Light
ABCDEFGHIJKLMNOPQRSTUVXYZ
abcdefghijklmnopqrstuvxyz

Roboto Mono Regular
ABCDEFGHIJKLMNOPQRSTUVXYZ
abcdefghijklmnopqrstuvxyz

Roboto Mono Bold
ABCDEFGHIJKLMNOPQRSTUVXYZ
abcdefghijklmnopqrstuvxyz

user research

google forms survey

Do you live or work in a building that uses solar energy?

- Yes, home
- Yes, workplace
- Yes, both
- No
- No, but have interest in potentially installing home or commercial solar in the future

Please select the description that best describes the solar energy system at your work space

- Solar energy system produces more power than is used
- Solar energy system produces more than 75% of power used
- Solar energy system produces more than 50% of power used
- Solar energy system produces less than 50% of power used
- Solar energy system produces less than 25% of power used
- Solar vs. Grid usage not monitored
- Solar vs. Grid usage unknown
- Other

Have you noticed any reoccurring issues with the solar installed at your workplace? If so, please list

Is solar power also used in your home/living space?

- Yes
- No

Please select the description that best describes the solar energy system for your living space

- Solar energy system produces more power than is used
- Solar energy system produces more than 75% of power used
- Solar energy system produces more than 50% of power used
- Solar energy system produces less than 50% of power used
- Solar energy system produces less than 25% of power used
- Solar vs. Grid usage not monitored
- Solar vs. Grid usage unknown
- Other

How many people is your solar installation supporting/how many people live with you more than 4 days a week?

Please rank the following factors on impact for choosing to integrate solar energy to your living space:

- Environmental Concerns
- Grid independence
- Long-term economic expenses (high = positive impact)
- Short-term economic expenses (high = negative impact)
- Other

user research

google forms (cont.)

Please indicate how you MOST FREQUENTLY interact with monitoring/thermostat interface for your solar installation. If no monitoring or interface, please select 3, then Feature N/A for all rows in the next question

Home only ◦ ◦ ◦ ◦ ◦ Mobile only

How frequently do you have issues with the following interface elements?

NEVER | RARELY | SOMETIMES | OFTEN | ALWAYS | N/A

- ◦ Mobile/Remote Access Controls
- ◦ Mobile App Navigation
- ◦ In-Home Controls
- ◦ In-Home App Navigation
- ◦ Scheduled Controls
- ◦ Interface Aesthetics
- ◦ Monitoring Tools
- ◦ General Settings

If any elements in the previous question were marked as often or always, please list which is most detrimental to your user experience

What in particular makes these element(s) detrimental to your interaction with the system?

Are there any other elements you find negatively impact your experience? If so, please describe

How many people is your solar installation supporting/how many people live with you more than 4 days a week?

Please rank the following factors on how they would impact a future decision to integrate solar energy to your living space from no impact to determining factor:

- ◦ Environmental Concerns
- ◦ Grid independence
- ◦ Long-term economic expenses (high = positive impact)
- ◦ Short-term economic expenses (high = negative impact)
- ◦ Other

If there are other factors you would like to include please list them here in order from least to most important

Do you use a smart thermostat system at home?

- ◦ Yes
- ◦ No

What manufacturer is your home thermostat?

- ◦ Google (Nest)
- ◦ Amazon / Echo
- ◦ EcoBee
- ◦ Honeywell
- ◦ Other

Please indicate how you MOST FREQUENTLY interact with the smart thermostat system

Home only ◦ ◦ ◦ ◦ ◦ Mobile only

How frequently do you have issues with the following interface elements?

NEVER | RARELY | SOMETIMES | OFTEN | ALWAYS | N/A

- Mobile/Remote Access Controls
- Mobile App Navigation
- In-Home Controls
- In-Home App Navigation
- Scheduled Controls
- Interface Aesthetics
- Monitoring Tools
- General Settings

If any elements in the previous question were marked as often or always, please list which is most detrimental to your user experience

What in particular makes these element(s) detrimental to your interaction with the system?

Are there any other elements you find negatively impact your experience? If so, please describe

Do you use a home assistant integration with your smart thermostat?

- Yes
- No
- No AI/Home Assistant integrations available for my system

If there are any additional items/issues you'd like to mention or anything you'd like to elaborate on, feel free to use the spaces below (3)

Optional Demographic questions

How old are you?

What is your profession?

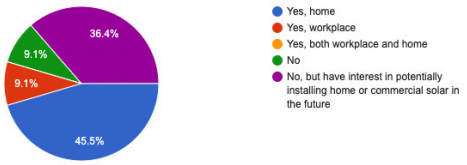
What region do you live in?

user research

response data

Do you live or work in a building that uses solar energy?

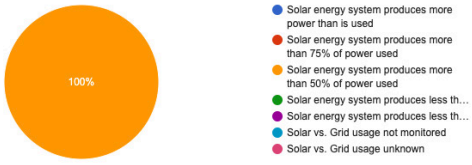
11 responses



Questions Regarding Workplace Solar Power

Please select the description that best describes the solar energy system at your work space

1 response



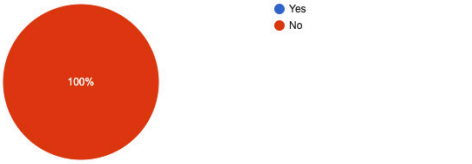
Have you noticed any reoccurring issues with the solar installed at your workplace? If so, please list

0 responses

No responses yet for this question.

Is solar power also used in your home/living space?

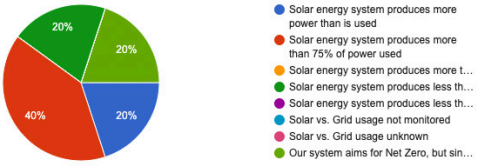
1 response



Questions Regarding Home Solar Power

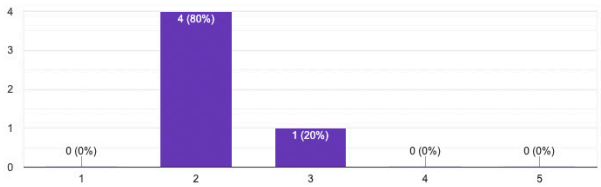
Please select the description that best describes the solar energy system for your living space.

5 responses

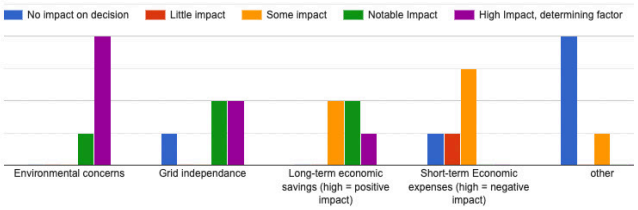


How many people is your solar installation supporting/how many people live with you more than 4 days a week?

5 responses

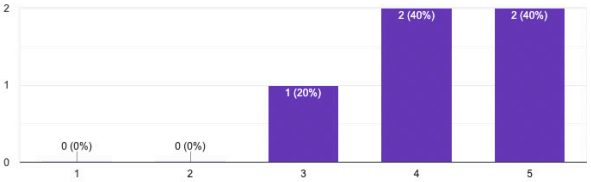


Please rank the following factors on impact for choosing to integrate solar energy to your living space

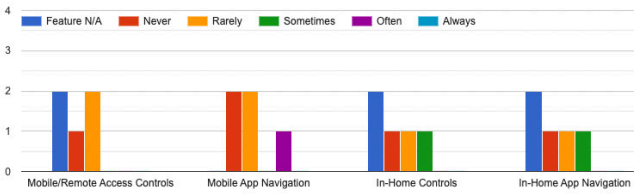


Please indicate how you MOST FREQUENTLY interact with monitoring/thermostat interface for your solar installation. If no monitoring or interface, please select 3, then Feature N/A for all rows in the next question

5 responses

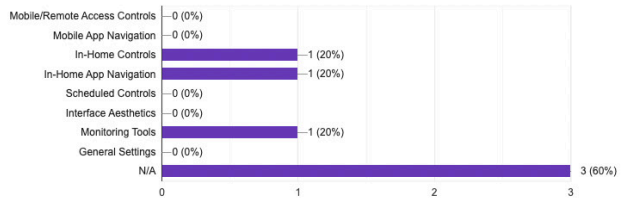


How frequently do you have issues with the following interface elements?



If interface element(s) were marked as often or always on the previous question, which are the most detrimental to your user experience?

5 responses



What in particular makes these element(s) detrimental to your interaction with the system?

4 responses

In-Home Controls are less user friendly than the Mobile App Controls

I have difficulty remembering which panels are where so often unsure where to look for problems

it isn't very flexible, no use defined reports, just what the company decides you need

NA

Are there any other elements you find negatively impact your experience? If so, please describe

2 responses

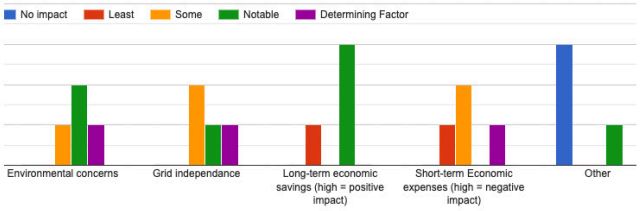
My system is Web based, so I don't have a mobile OR a Home device to interface with it. I can just log into the monitoring website and view production data/history there.

No

Questions Regarding Future/Potential Interest in Solar Integrations

Please rank the following factors on how they would impact a future decision to integrate solar energy to your living space from no impact to determining factor

Copy



If there are other factors you would like to include please list them here in order from least to most important

0 responses

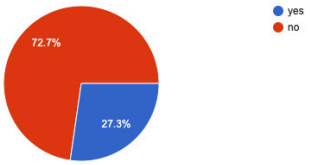
No responses yet for this question.

Smart Thermostats

Do you use a smart thermostat system at home?

Copy

11 responses

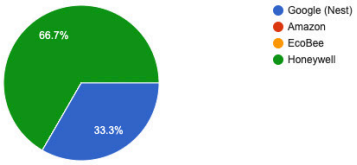


Questions Regarding Smart Thermostats

What manufacturer is your home thermostat?

Copy

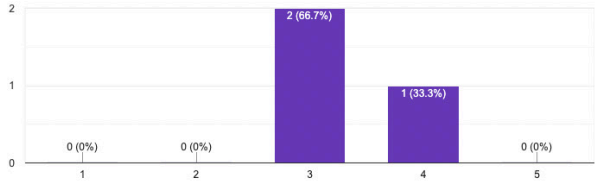
3 responses



Please indicate how you MOST FREQUENTLY interact with the smart thermostat system

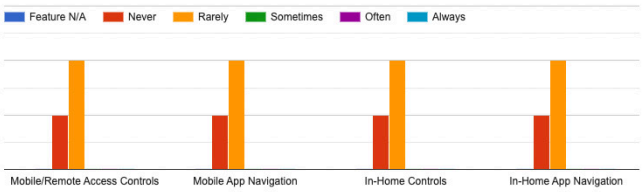
Copy

3 responses



How frequently do you have issues with the following interface elements?

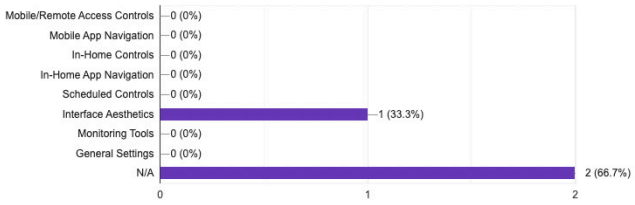
Copy



If interface element(s) were marked as often or always on the previous question, which are the most detrimental to your user experience?

Copy

3 responses



Are there any other elements you find negatively impact your experience? If so, please describe

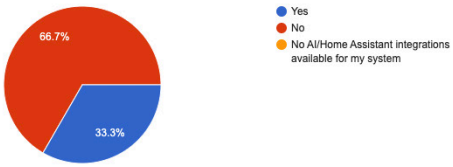
1 response

No

Do you use a home assistant integration with your smart thermostat?

Copy

3 responses



user research

response data (cont.)

Other

Other 01

4 responses

There are occasional integration issues with the home wi-fi. Solar Monitoring and Smart Thermostat sometimes do not "see" the wi-fi and a reset is required.

We used to have a smart thermostat but it doesn't integrate completely with our variable speed heat pump

Advice from doing a project involving design of a similar idea (but more from the technical side): keep all iterations and designs, sometimes an idea or method used earlier in the project seems impractical or just feels wrong, but as tasks are completed and the design tweaked, don't forget to look back on these tall orders to see if they will benefit the overall process somehow

We don't have a smart thermostat because we've got a heatpump driving our Heat/AC and it's happier with a constant temperature.

Other 02

1 response

I just thought of what your UI is missing: battery stats or energy storage stats. I'm not grid-independent because I don't have a battery.

Other 03

0 responses

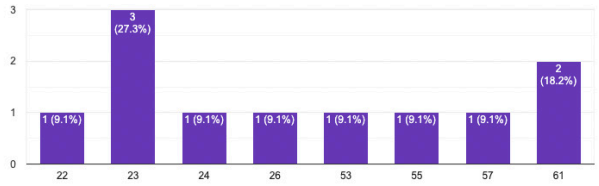
No responses yet for this question.

Demographics

How old are you?

Copy

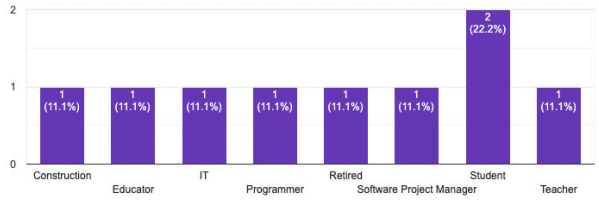
11 responses



What is your profession?

Copy

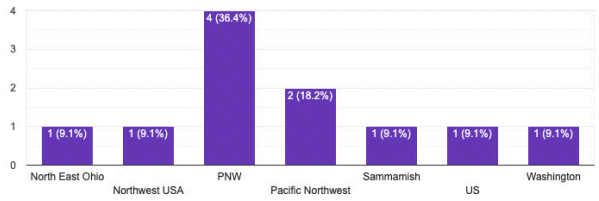
9 responses



What region do you live in?

Copy

11 responses

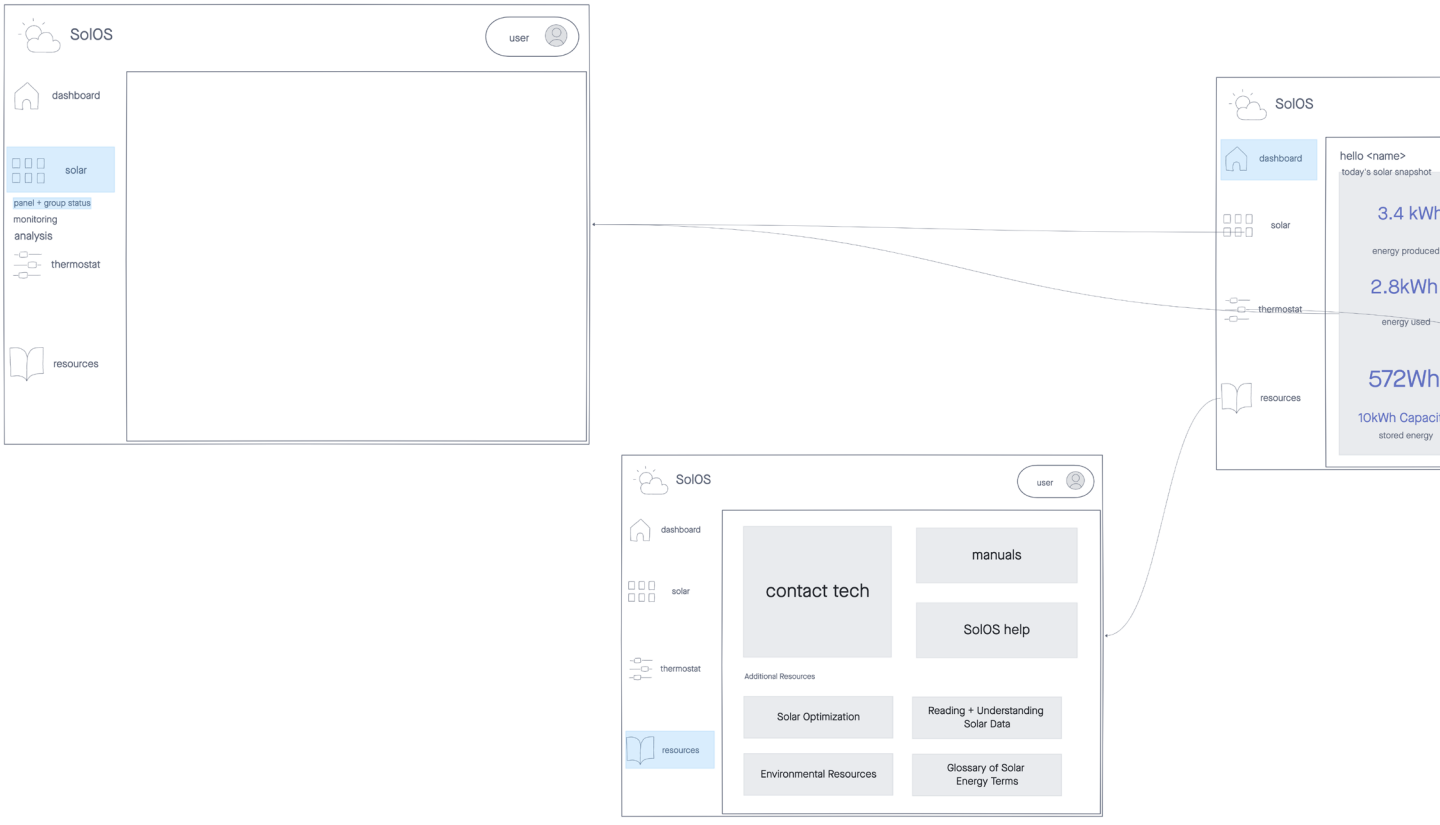


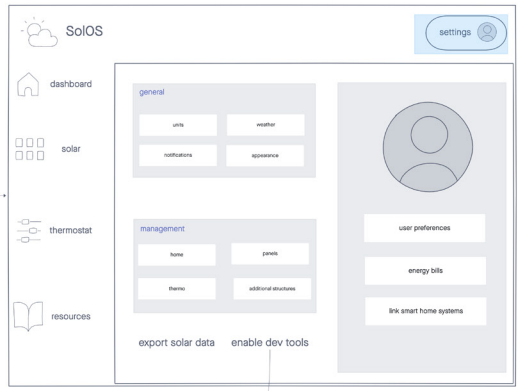
target user

profile

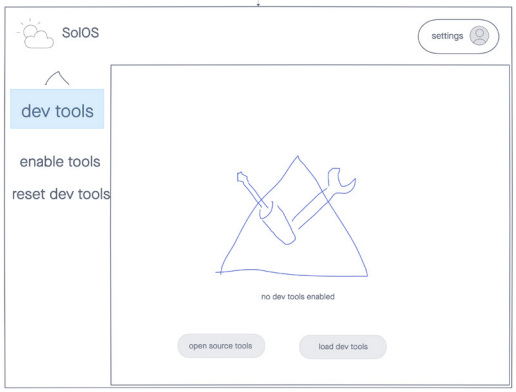
wire + flow

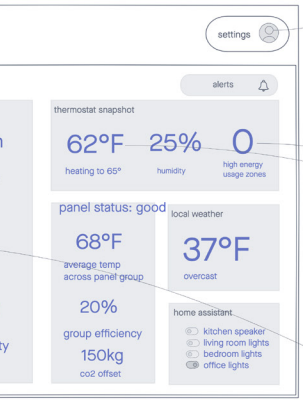
navigation // layout

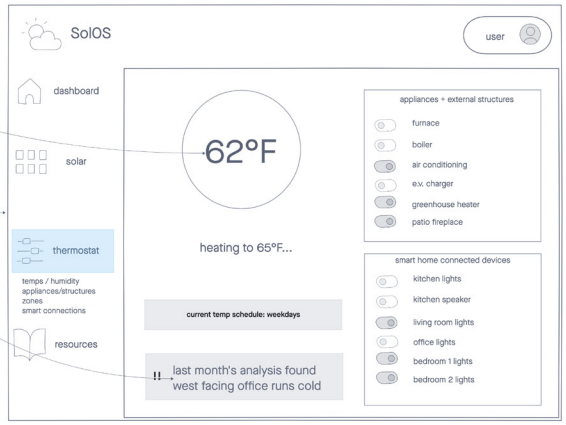




enabling dev tools also from settings also ads icon to main nav

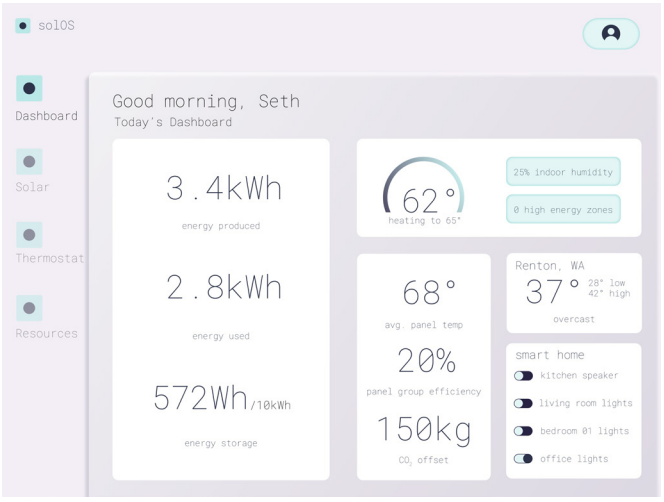


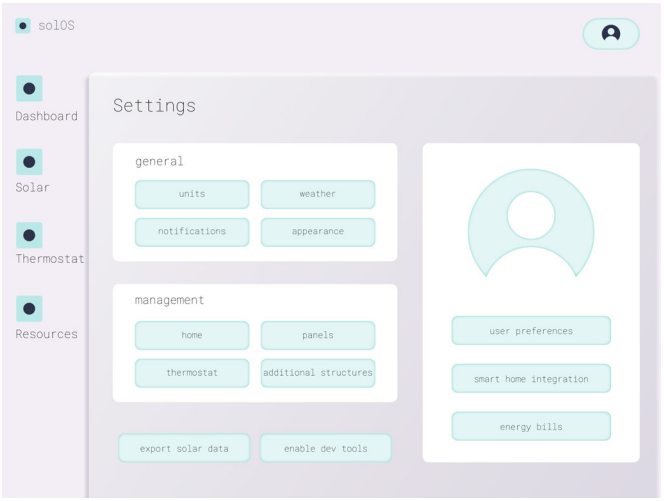


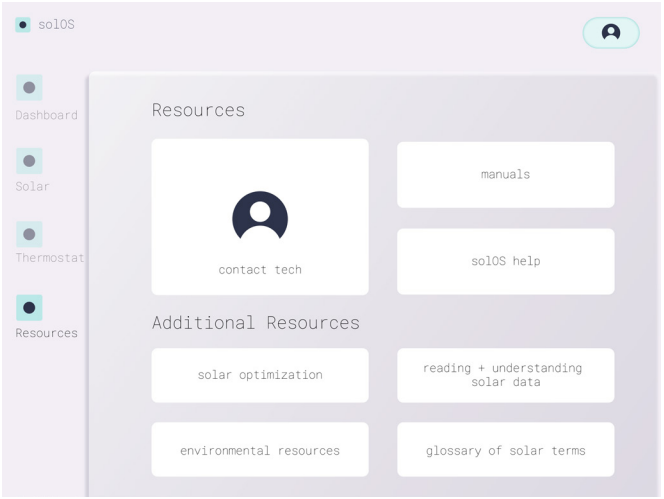


screens

design roughs

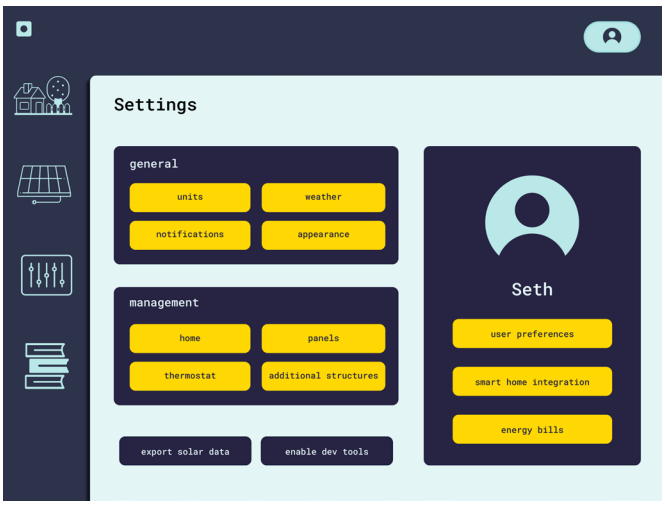


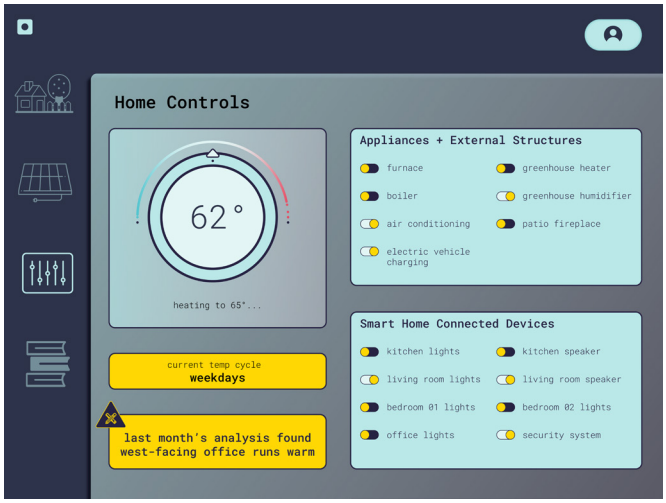


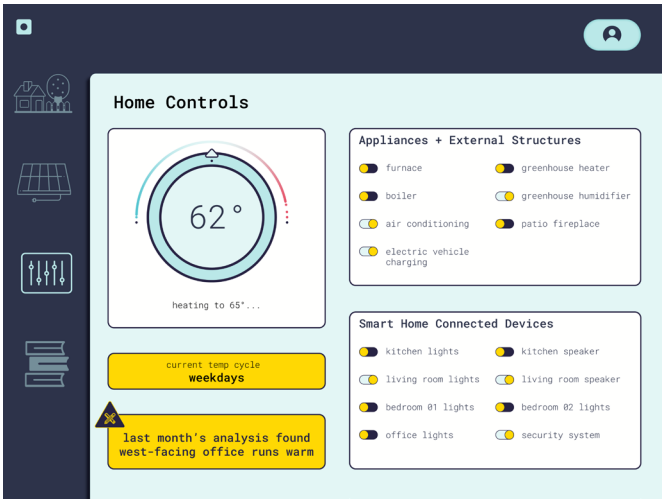


screens

design revision.01

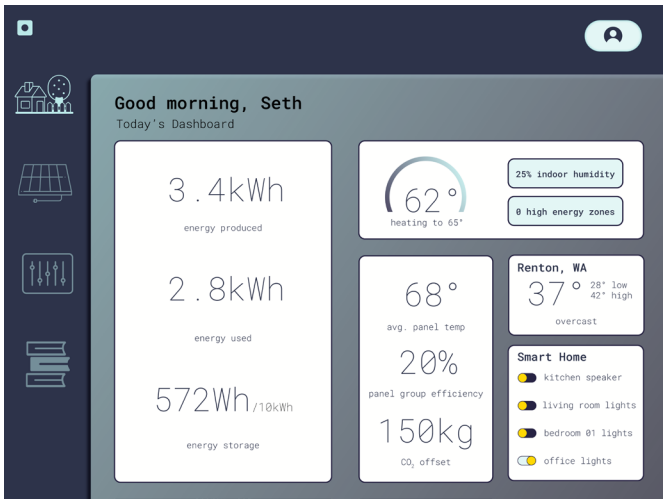


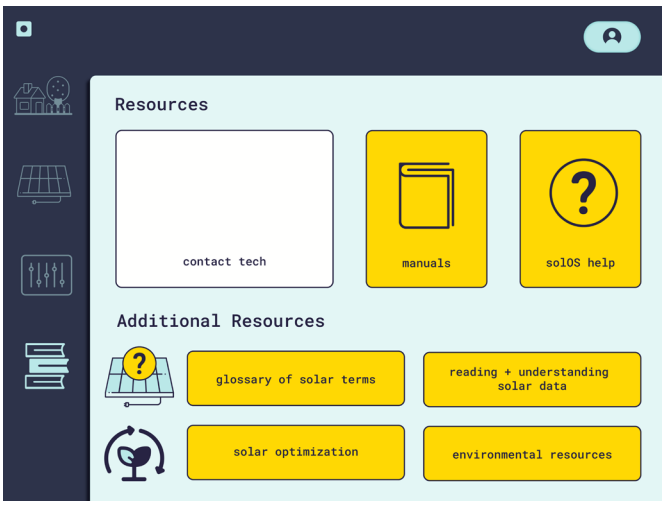




screens

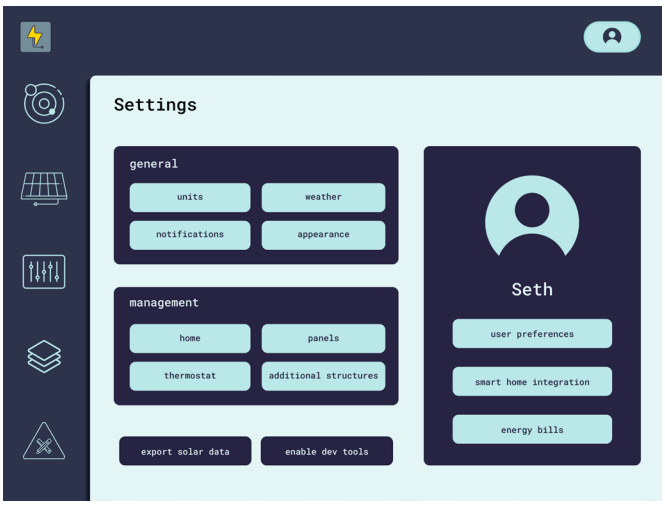
design revision.01

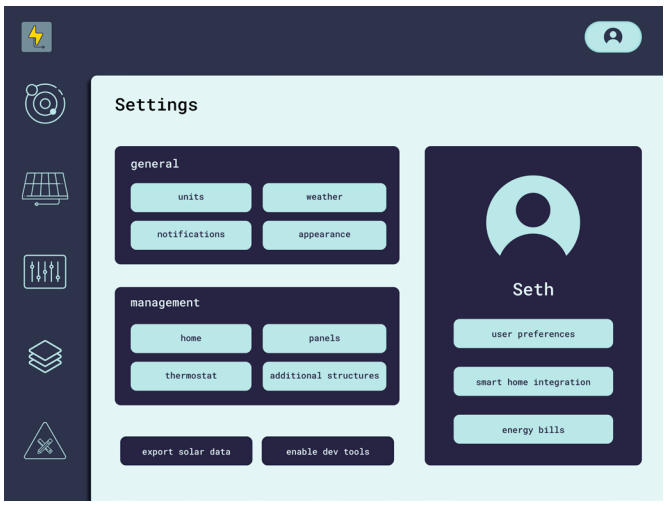




screens

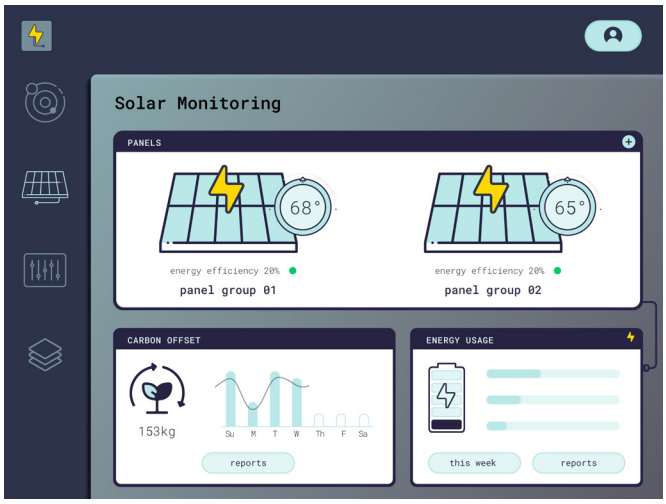
final designs

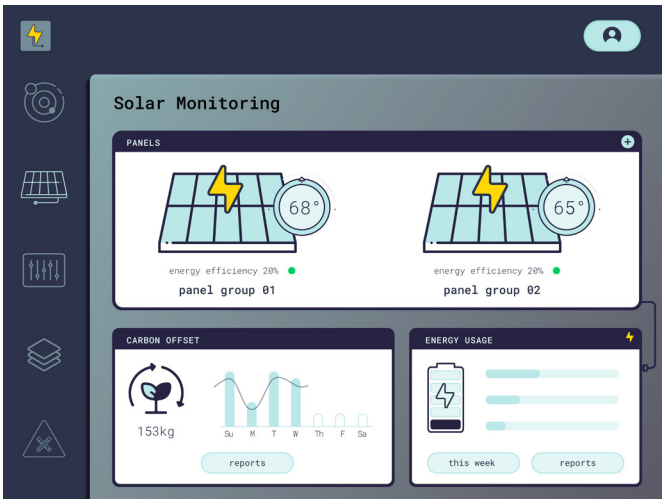


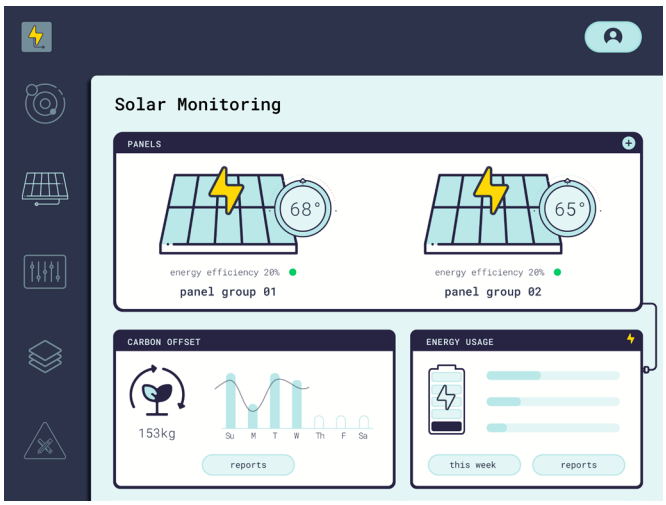


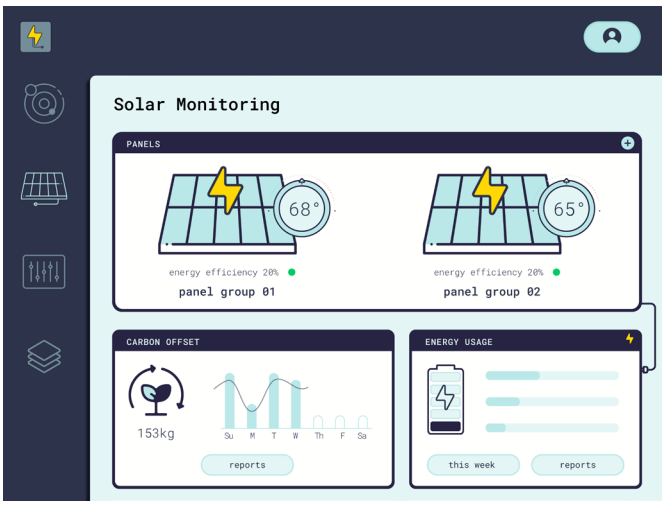
screens

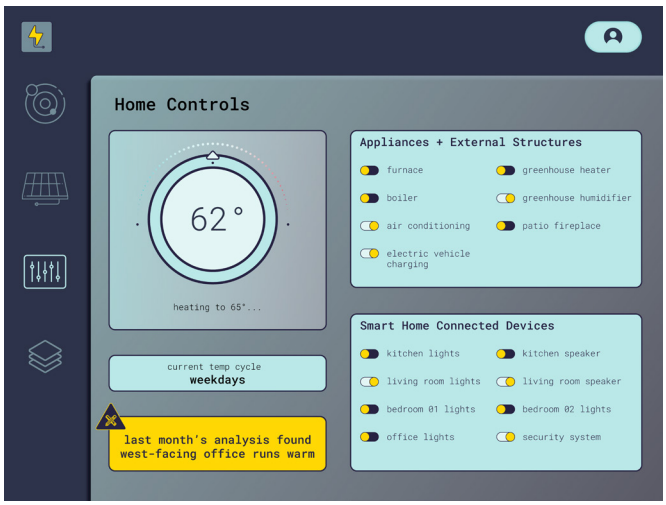
final designs

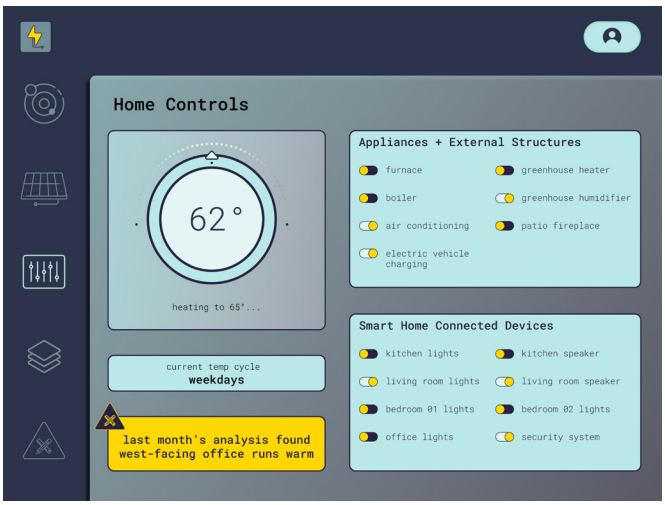






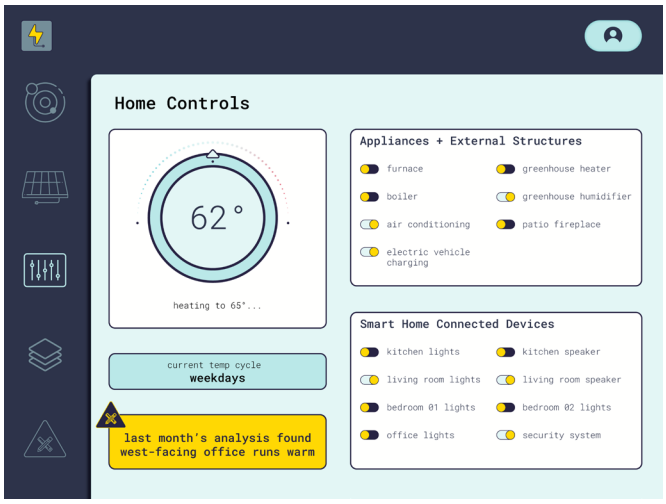


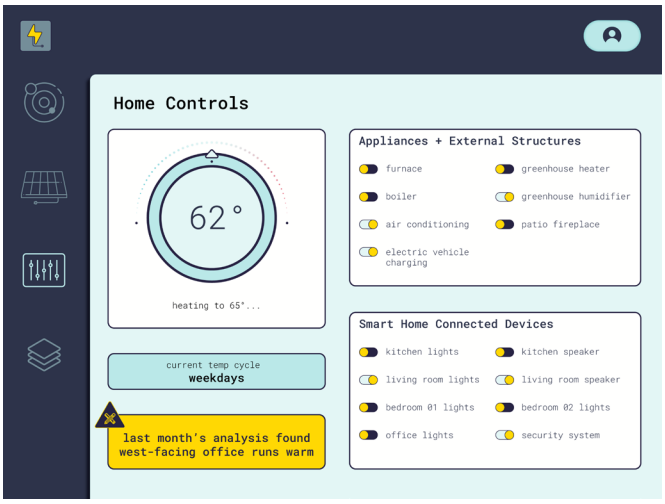


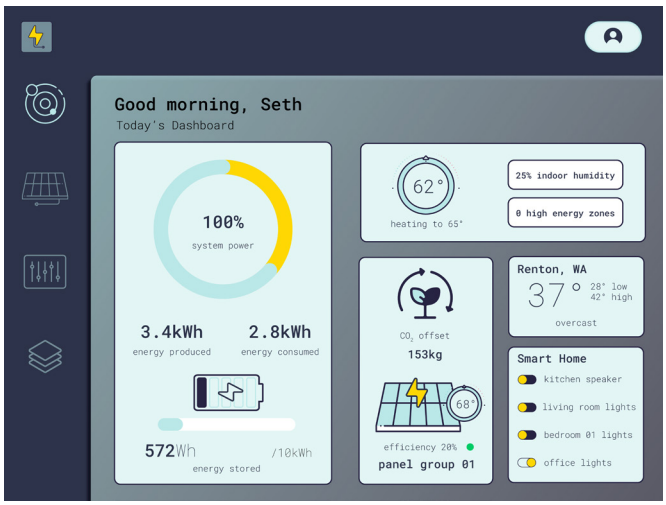


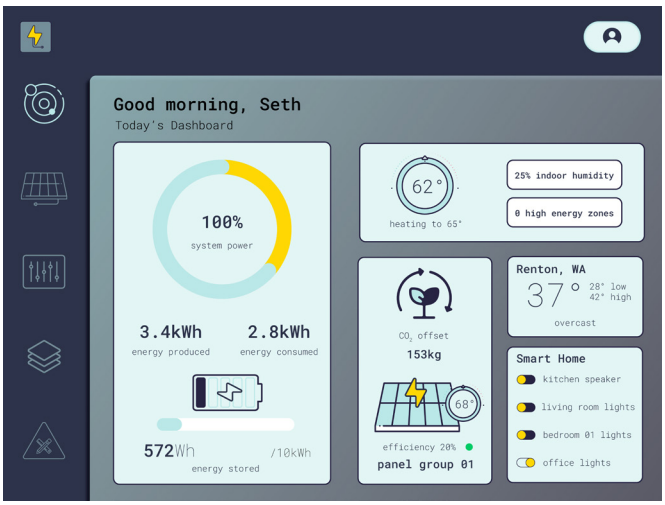
screens

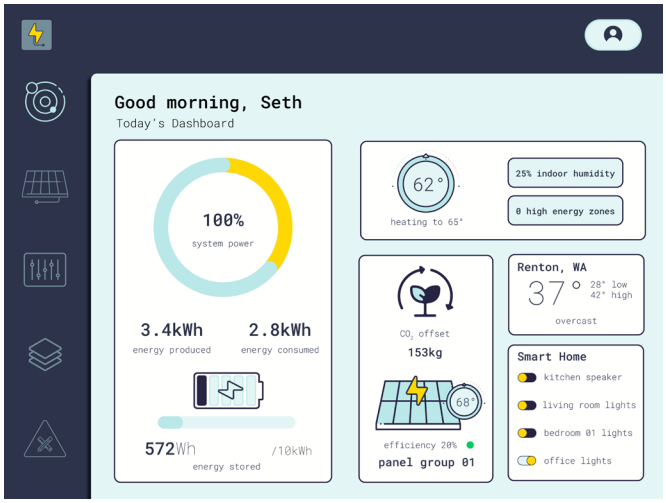
final designs

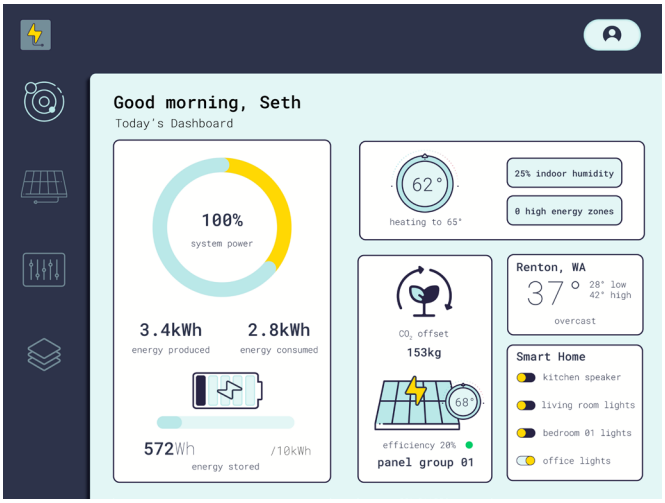












screens

final designs

mockup

62°

Solar Monitoring
PANELS
68°
65°
energy efficiency 23%
panel group 01
energy efficiency 20%
panel group 02
CARBON OFFSET
153kg
Su M T W Th F Sa
reports
ENERGY USAGE
this week
reports