



ENERGY QUEST:

Sitka's Path to 2050

Sitka Community
Renewable Energy
Strategy



sustainability@cityofsitka.org



Learn more at: www.cityofsitka.com/SCRES

SET UP YOUR BOARD



Electrification Actions

Cards with the circles on them

Energy Tokens:
Yellow x 6
Red x 5

Renewable Energy Projects

Event Cards



Stash the paper behind your map for now

What are we doing today?

SCORES



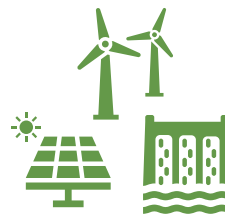
Answer 4 Questions:



What do we want to
Sitka to look like in
25 years?



How much energy
does this future
Sitka need?



How do we want
that future to be
powered?



How do we
make that
future a reality?

How do we answer those questions?



1. Create personal visions of Sitka 2050



2. Map our energy goals



3. Brainstorm actions that move us closer to our visions.

Get to Know Sitka's Electric Grid

SCORES



TRANSMISSION & DISTRIBUTION

GENERATION

Connects
Halibut
Point
Road
7 mi



Marine Street
Substation

Connects Downtown

Japonski Island &
Electrified Islands

1 mi



Jarvis Street
Substation

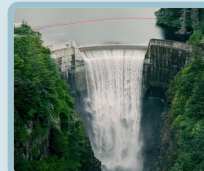
Connects Sawmill Creek
4.5 mi



Houses Backup
Diesel Generators

4 mi

Blue Lake
Dam



Powerhouse
Turbines: 3
Generation
Capacity: 16 MW



8 mi

Green Lake
Dam



Powerhouse
Turbines: 2
Generation
Capacity: 18 MW



Why are we doing this?



Large Regional Grid

U.S. Western Interconnection
>80 million people

Large Island Grid

Oahu, HI
1 million people

Small Island Grid

Sitka, AK
8,500 people

Microgrid

College campus or neighborhood
<2,000 people

**Off-Grid
Building**

House with solar panels and battery
1-6 people

“The world’s macro-est microgrid”

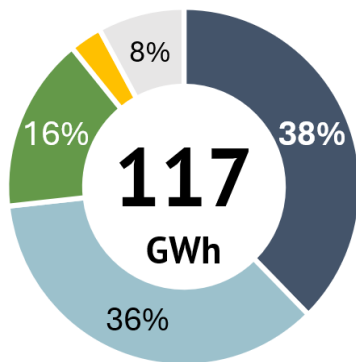
-Bri Gabel

Why are we doing this?

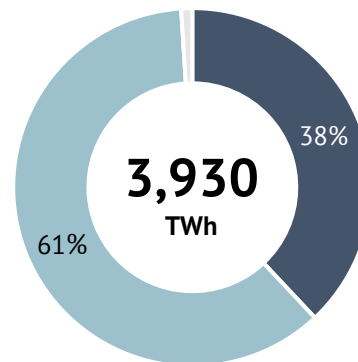


Electricity Usage in Sitka

- Residential (38%)
- Commercial (36%)
Restaurants, retail shops, grocery stores, seafood processors, industrial users
- Public Authorities (16%)
Schools, tribal government, other government buildings.
- Harbor Meters (3%)
- Other (8%)
*Interruptible loads, unmetered**



**Interruptible loads are things CBS can turn off if needed to reduce load. Things like streetlights are unmetered.*



Compared to the U.S. Average*

**Sitka's commercial and industrial sectors are about half of the U.S. Average.
The biggest electricity users in Sitka are the residents.**

Who does what?



Sitkans decide what Sitka's energy landscape looks like!
There are two roles:

You (Consumer)

1. Use electricity for what they **need and want**
2. Try to **conserve** and be **efficient**

Conservation = using less energy with behavior choices. *You **conserve** electricity by turning off the lights in a room*

Efficiency = using less energy with improved technology and materials. *By using **efficient** appliances, you use less electricity*

3. Help the utility understand what is coming up next

Utility (Supplier)

1. Provide clean, renewable power, safely and reliably, at the lowest long-term cost.
2. Design a system that can meet the demand

What should a well-functioning energy system look like?



The Energy Economics Trilemma

A three-dimensional scale

Sustainability



Affordability

Reliability

A Well-Functioning System Must Be:

Sustainable Balance the environmental, political, and social constraints

Reliable Ensure services are delivered wherever needed whenever

Affordable Deliver energy at a reasonable cost

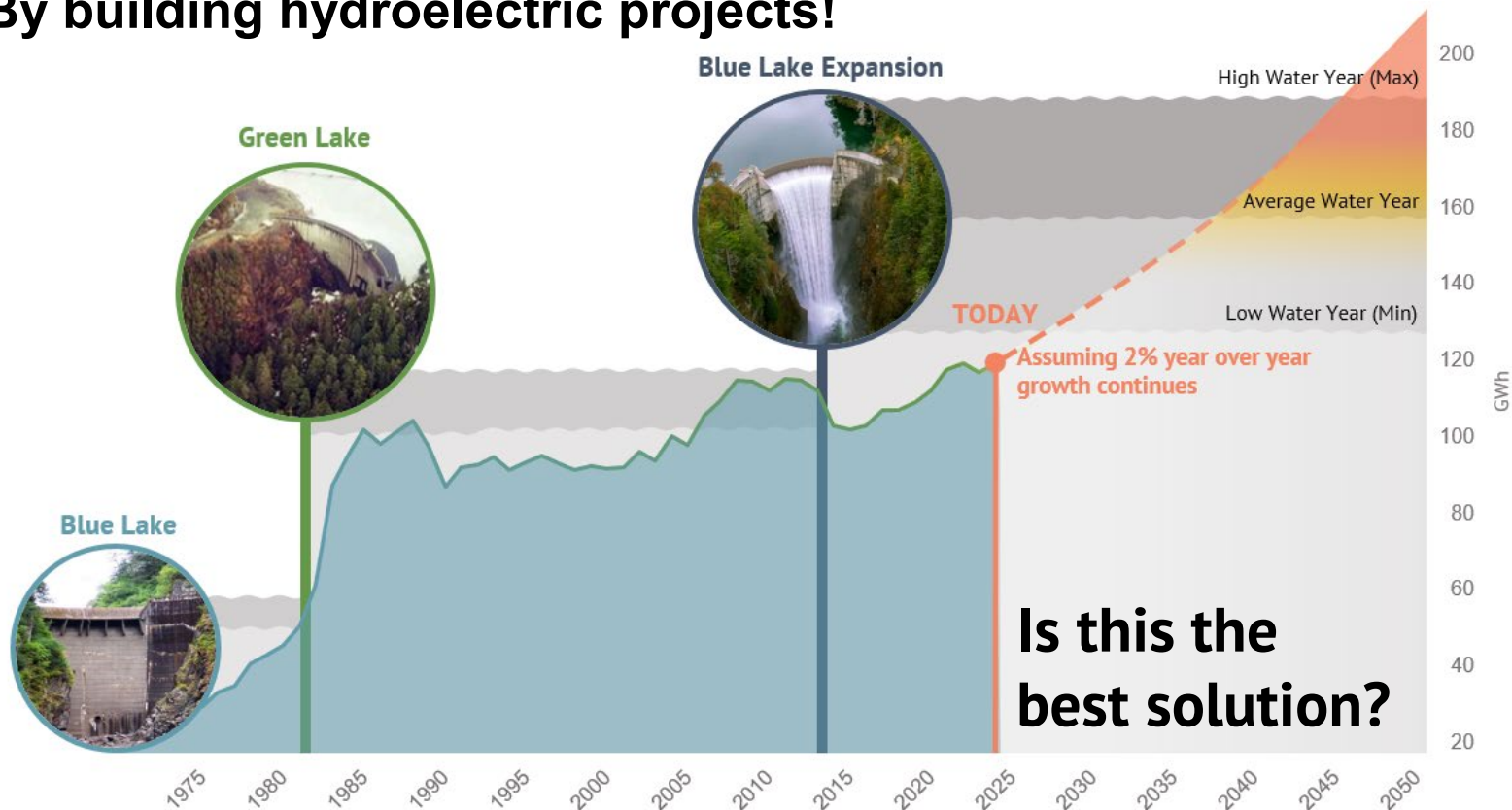
Considerations for Designing a Well-Functioning System



How has Sitka done this in the past?

By building hydroelectric projects!

SCORES

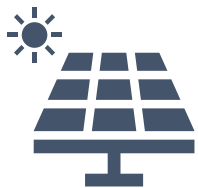


What other renewable energy options does Sitka have?

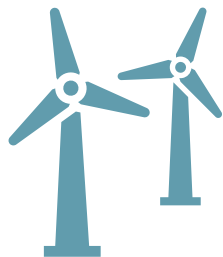
Energy Transition Initiative Partnership Project (ETIPP) 2021



Sitka has a lot of options.



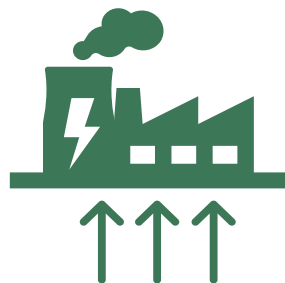
Solar



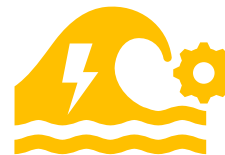
Wind



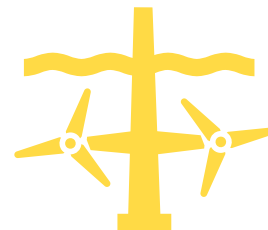
More hydro



Geothermal



Wave



Tidal

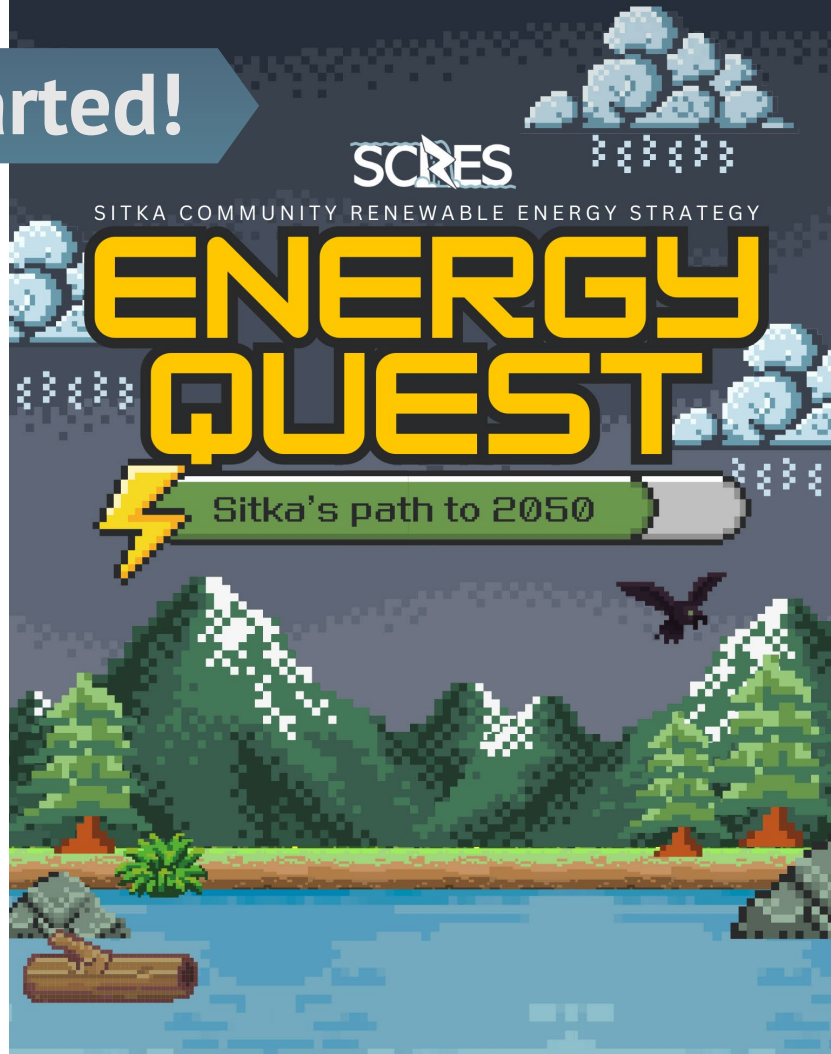
But which option is best?



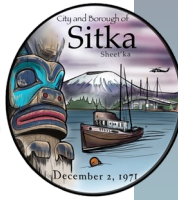
That depends:



Let's get started!



SCRES



Your Job:



Pick what you want to see powered by Sitka's grid

Decide how many goals you want to meet and how

Pick as many or as few as you want

Balance the demand *and* the supply!

Why this is cool:

- The tokens represent a realistic amount of electricity generation for Sitka
- The goals electricity requirements are also based on current levels of technology and the most recent assessment of Sitka's energy needs
- Your final map will be used to create a community-wide vision of Sitka in 2050 because:
Sitka's get to decide what Sitka's energy future looks like.

The Rules:



**This is about creating the Sitka you want to see!
Accomplish the goals most important to you**

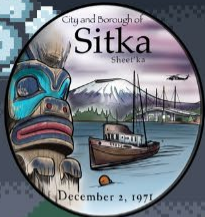
Don't try to predict the future

**This is about creating your
vision of Sitka in 2050**



Ready?

SCRES



SCRES

SITKA COMMUNITY RENEWABLE ENERGY STRATEGY >>>>

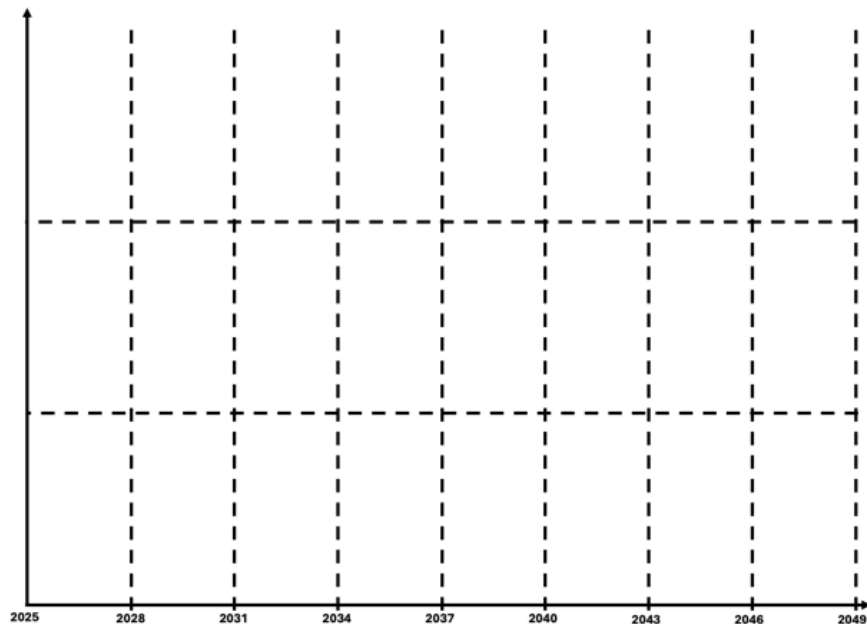
ENERGY QUEST

⚡ Sitka's path to 2050

START

What you have:

SCORES



Roadmap

Electrify 20%
of Personal
Vehicle Fleet

Spend 1 Token



Goal Cards

You can make
custom goals!

Build Renewables

Generate
3
Tokens

Generation Cards

Power Tokens



Available
Hydro



Diesel



Renewable

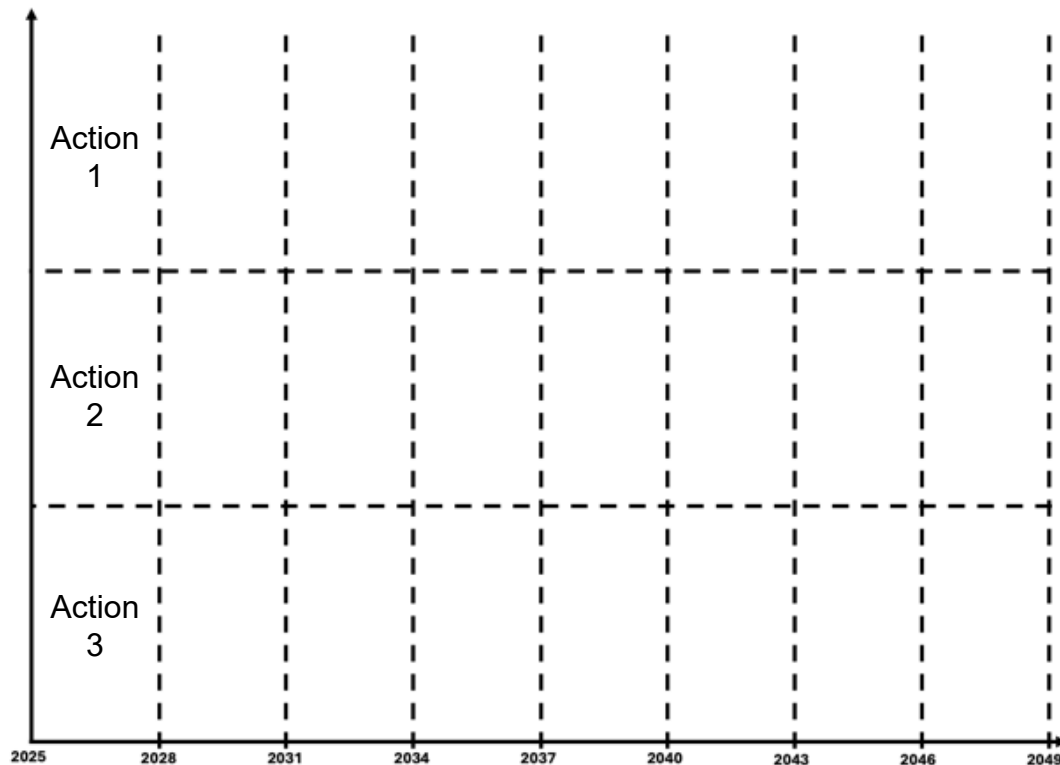
EVENT
CARD

Event Cards to Unlock

How to Play:



- Your roadmap is divided into 3-year time blocks
- Each round you can do up to 3 actions
The order does not matter
- There will be 8 rounds up to 2049!

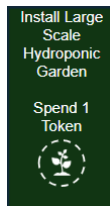
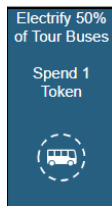
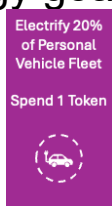


Phase 1: Goal Setting

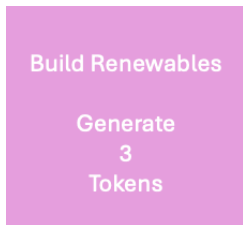


With each action you can:

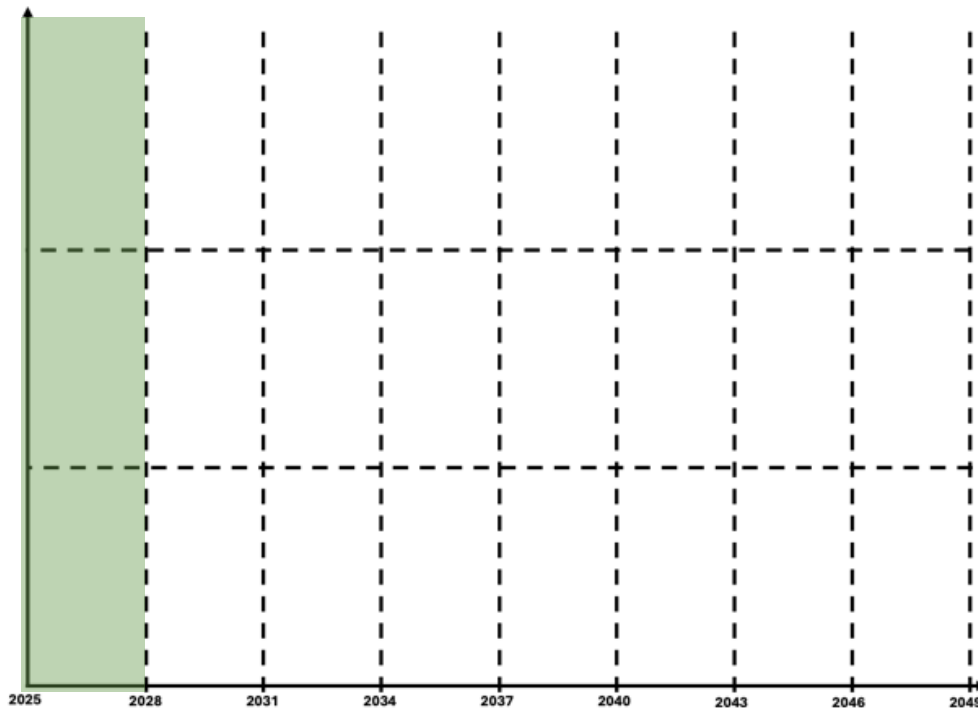
Start an energy goal



Or start building new generation



Some goals require more than one turn, they will block action spaces in future turns.

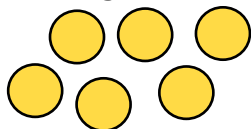


Phase 2: Generating Power

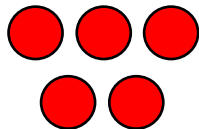


Once your goals are set, if you have any projects to bring online to generate more power, add the tokens!

To start you have:



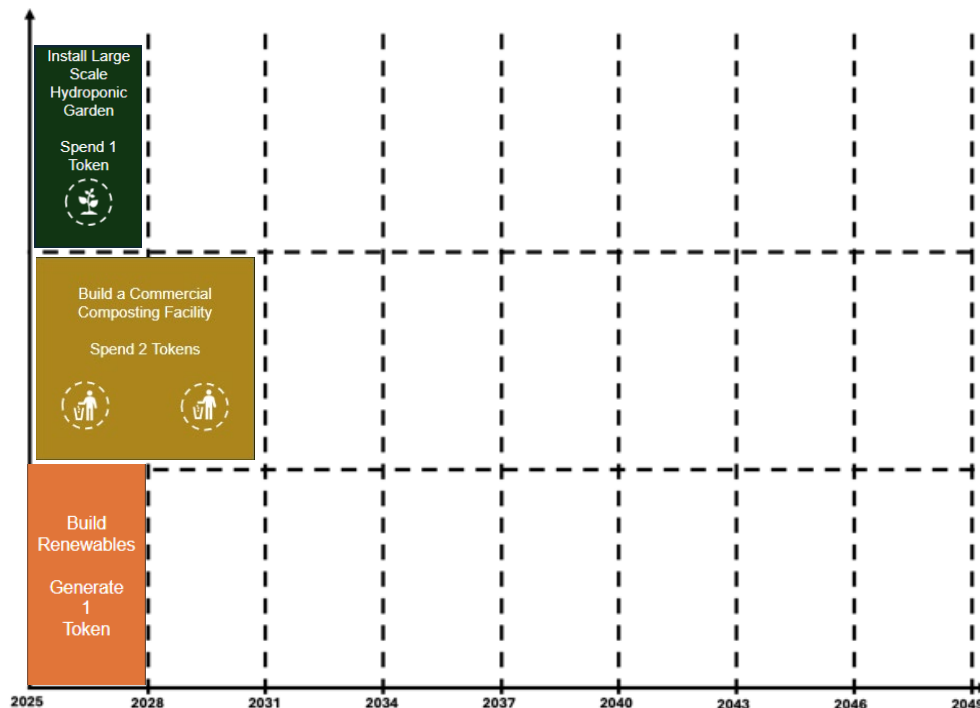
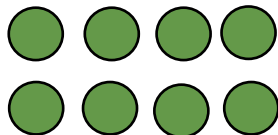
6 existing
hydro tokens



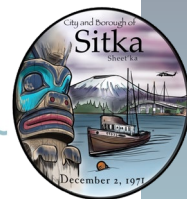
5 diesel
tokens

As you play you will generate:

As many renewable
tokens as you need

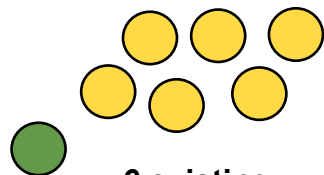


Phase 3: Power Your Goals

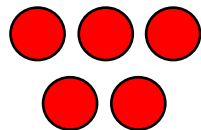


Once you've decided your actions,
you need to power your goals!

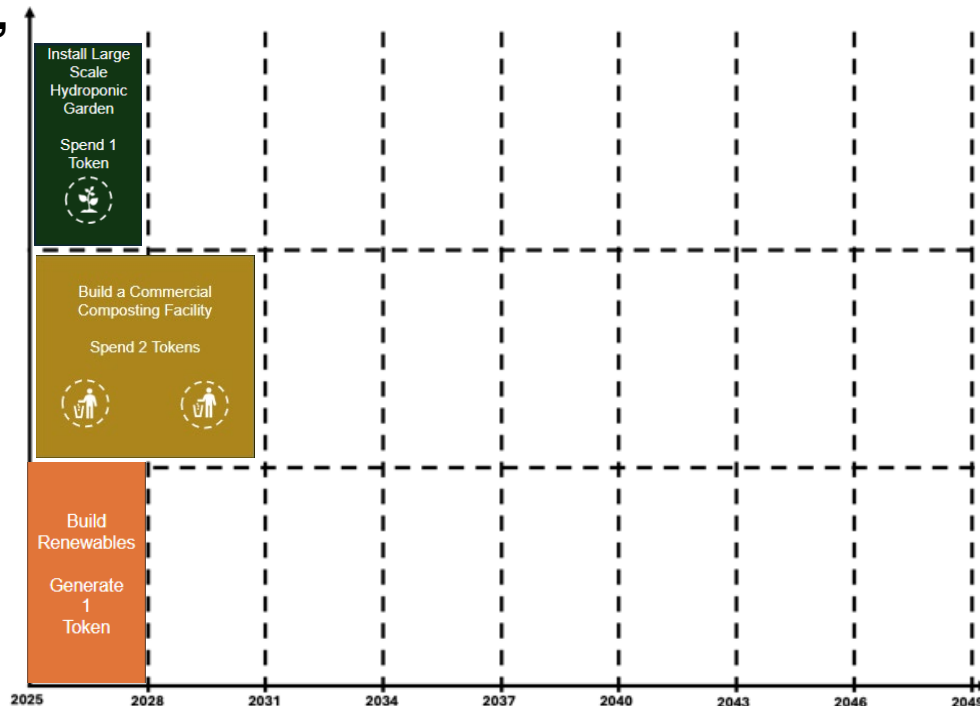
To start you have:



6 existing
hydro tokens



5 diesel
tokens



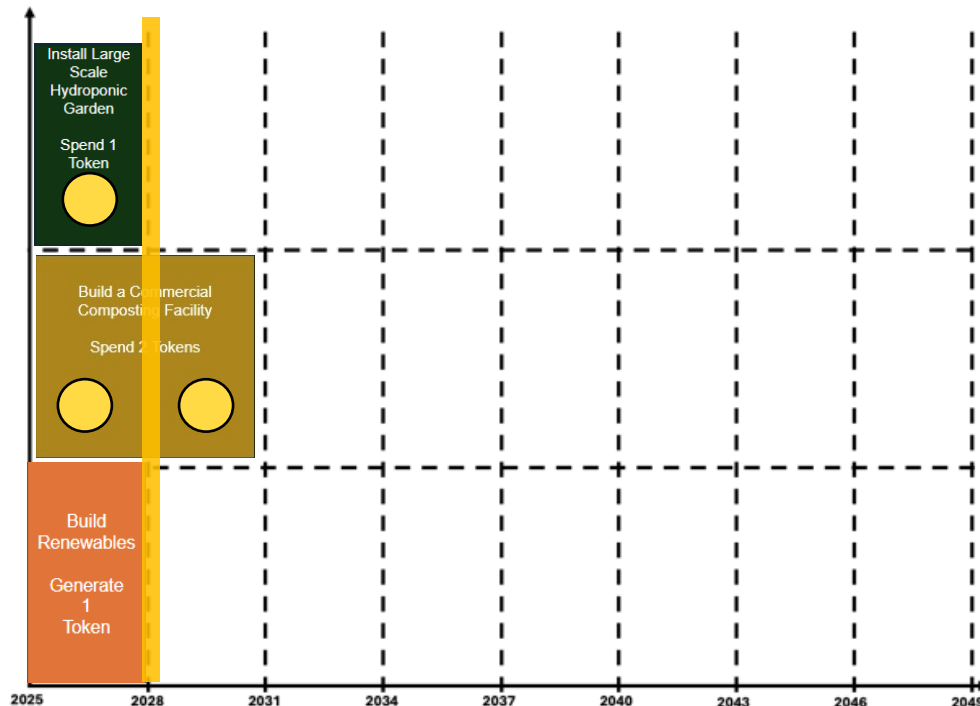
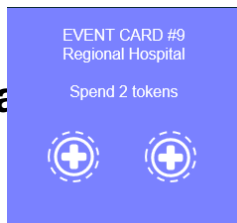
Phase 4: Event!



At the end of each turn, an event will occur.

- Some events will require you to be able to adapt to changes, and if you are able to adapt you are given bonus points.
- Other events present new technology opportunities or goals.
- You are not required to take every new opportunity presented by the Event Cards.

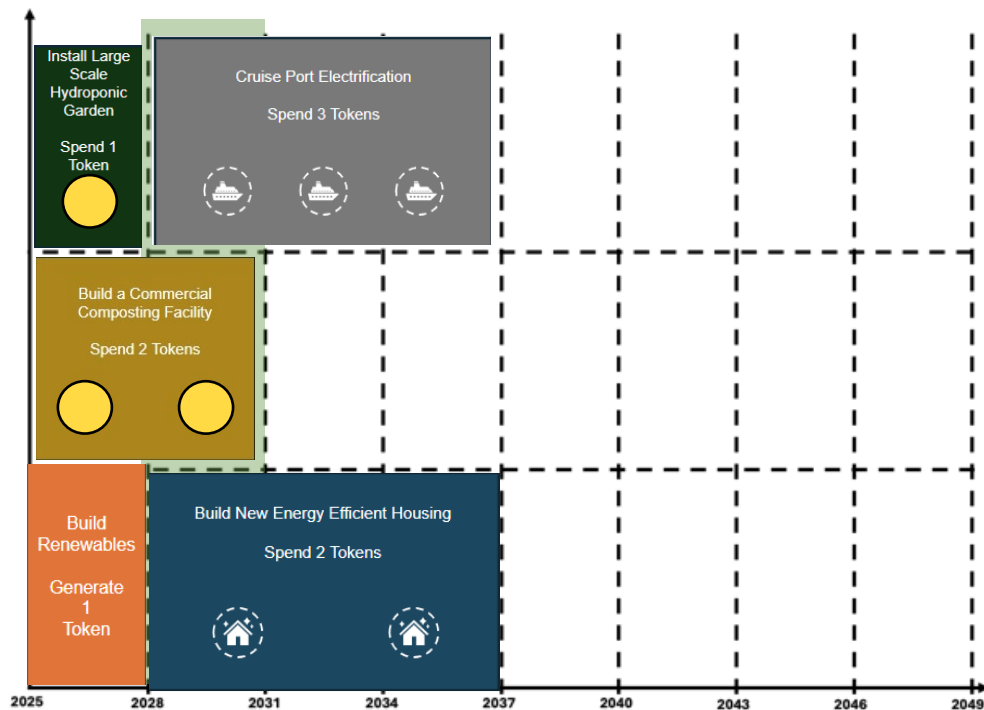
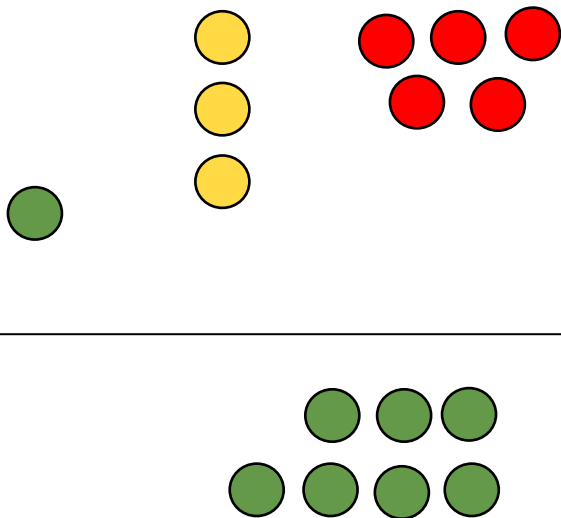
In the Year



Let's Start Planning for 2031...



If at any point you want to meet a goal but don't have enough **hydro** or **renewable** tokens, you can use **diesel tokens** at any time



End of the Game



After 8 rounds, your roadmap is complete, it's time to add up the points!

In this game there are two ways to earn points:

1. Implementing Goals and
2. Responding to Events.

You only get points for things on your roadmap

After the Game



After the game is complete, we will have a discussion and ask you to give us a little more information about how you got there.

Answering the questions on the roadmap sheet will help us understand your vision better

You can say you helped plan Sitka's energy future!

Round 3

By 2034...

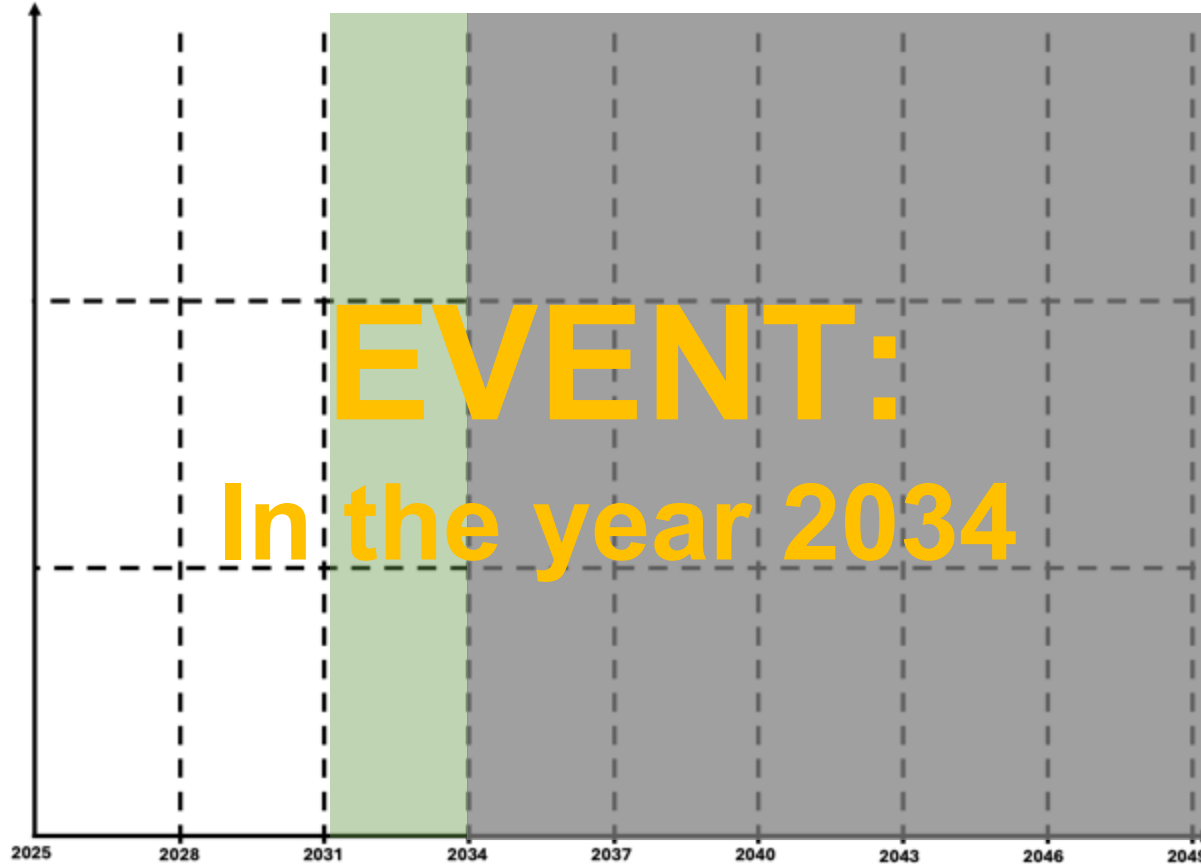


Take your
actions

Generate more
power (if any)

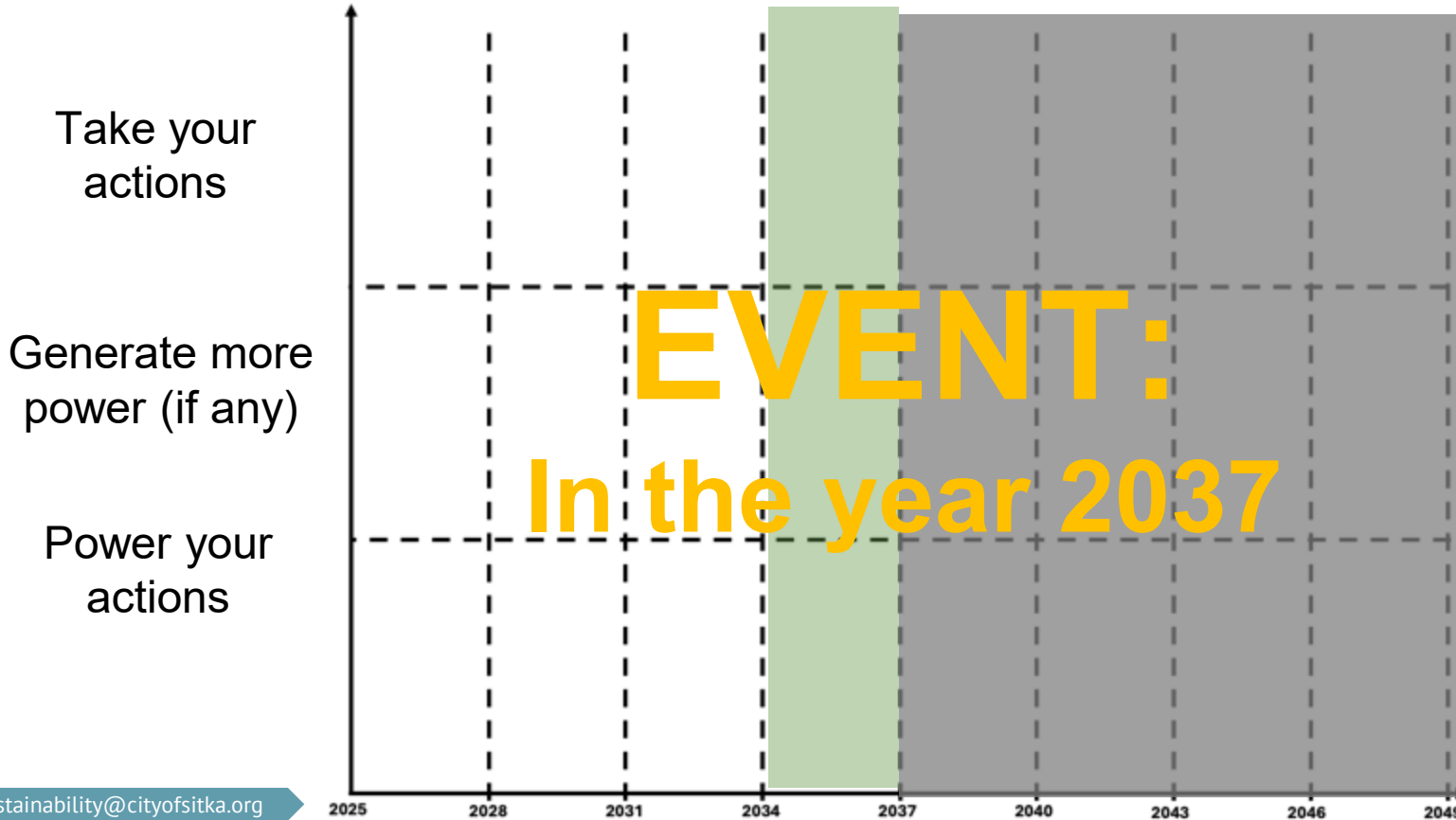
Power your
actions

EVENT:
In the year 2034



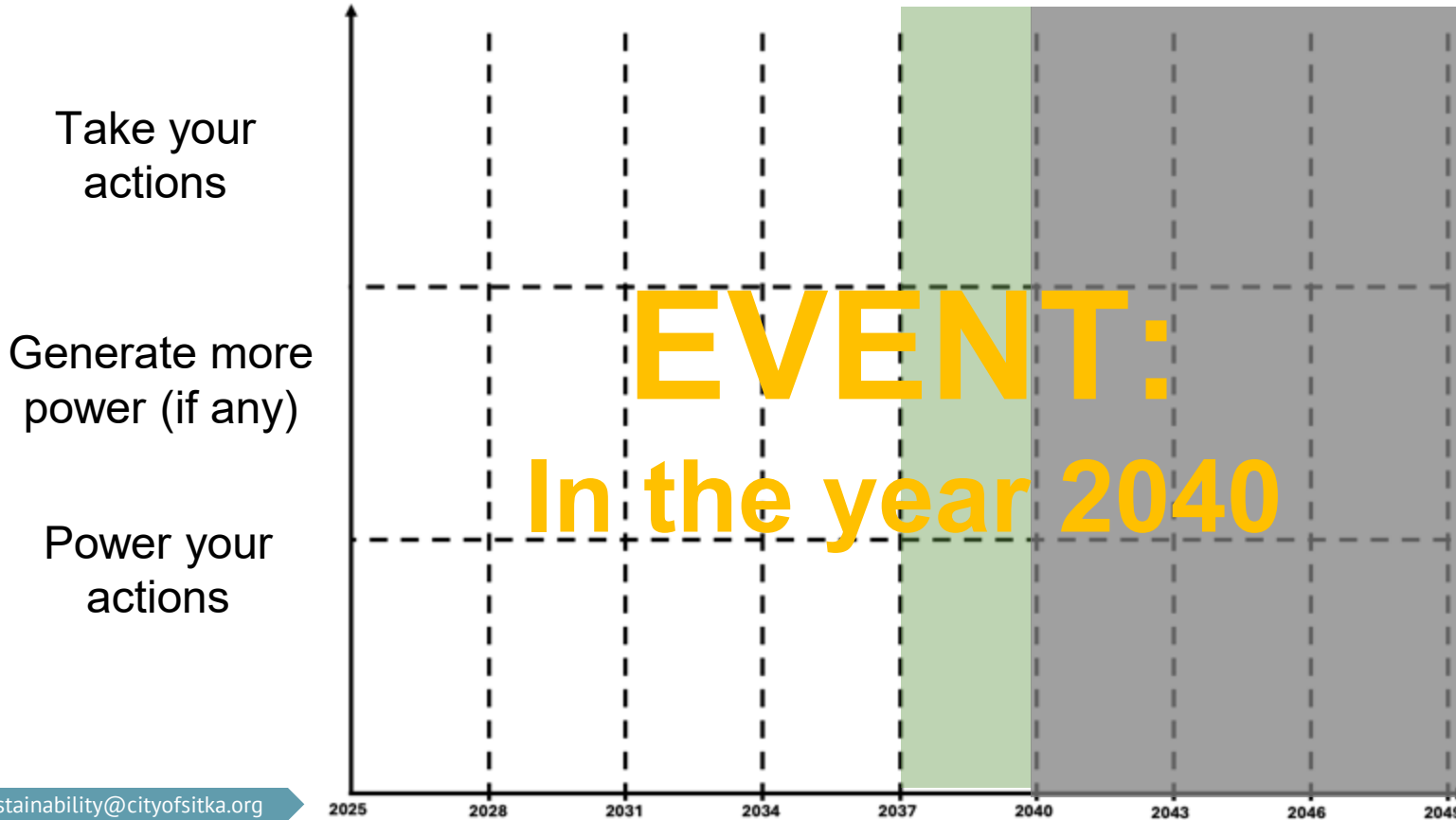
Round 4

By 2037...



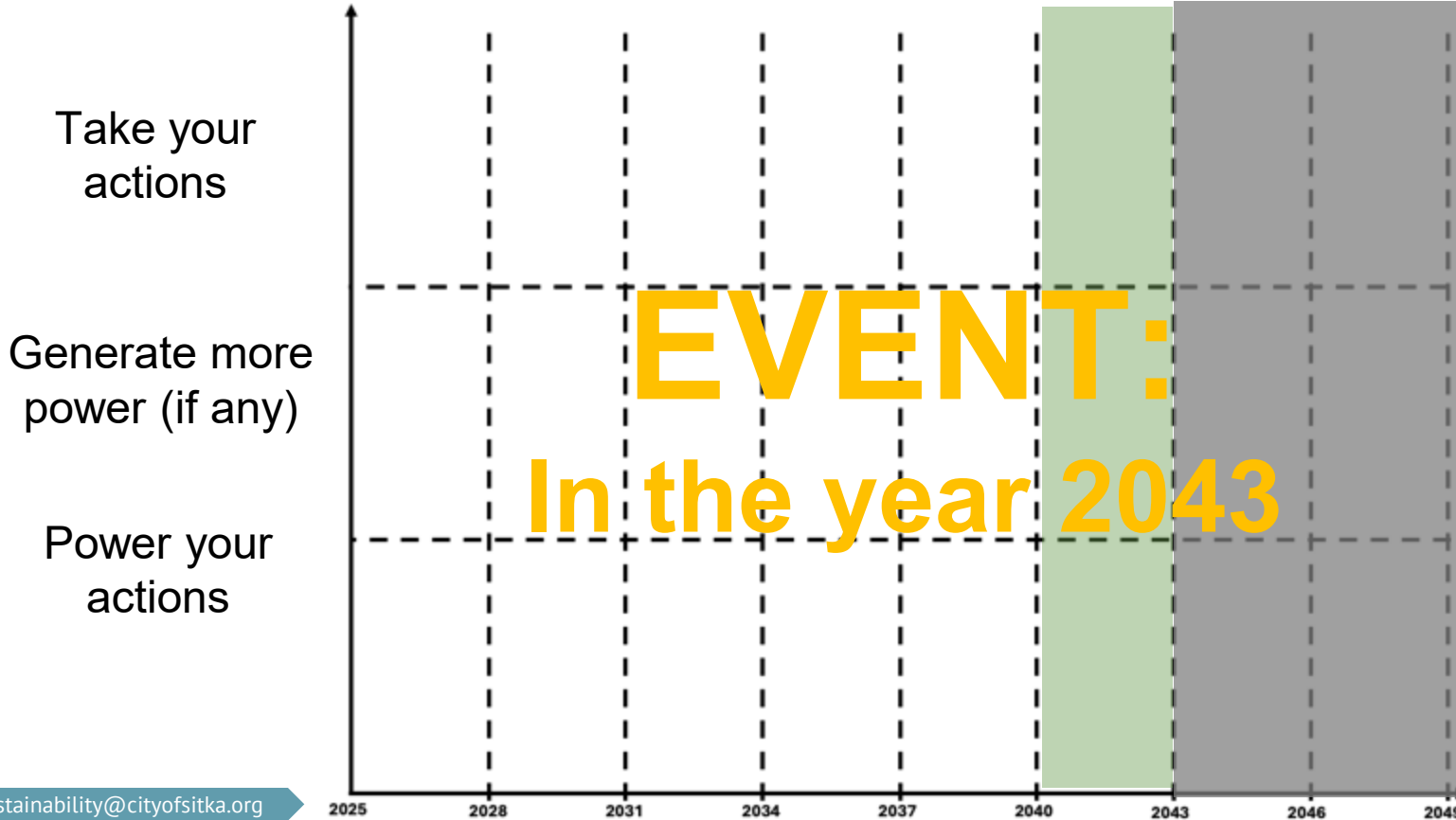
Round 5

By 2040...



Round 6

By 2043...



Round 7

By 2046...

SCORES

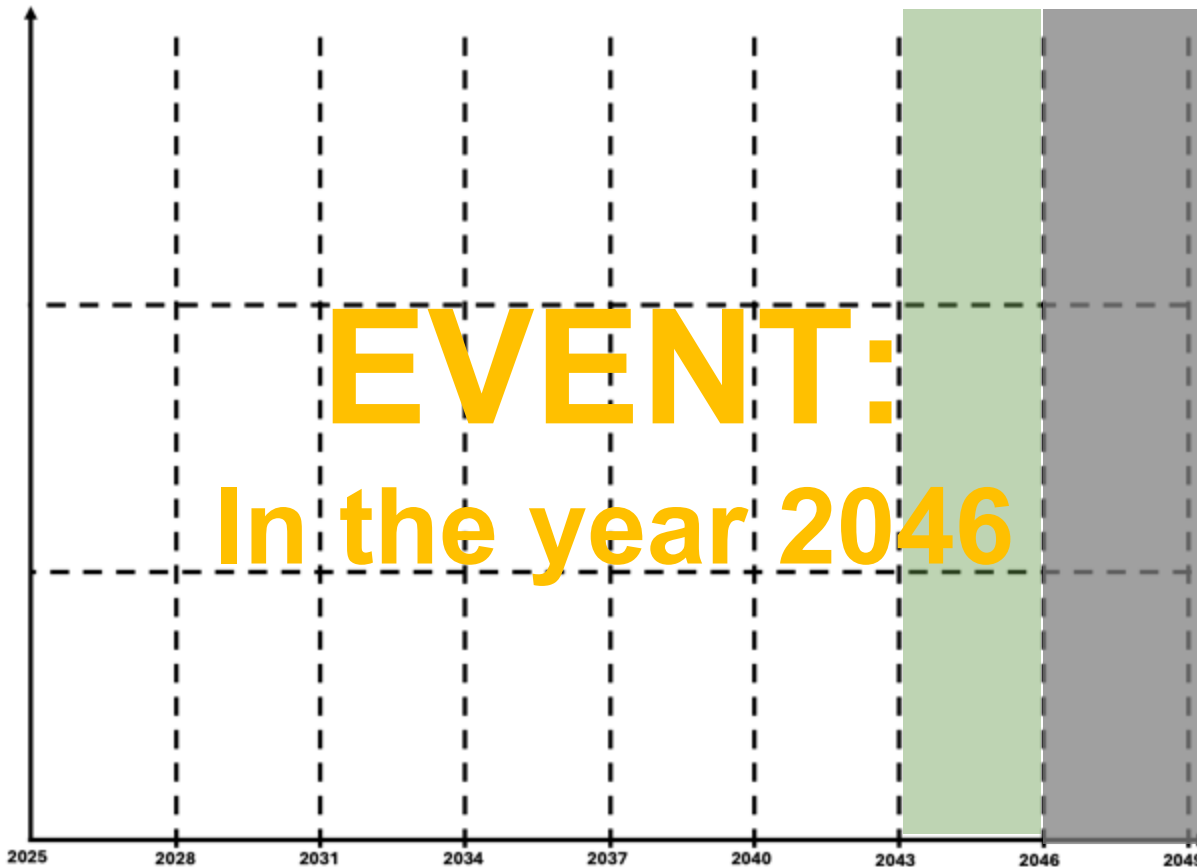


Take your
actions

Generate more
power (if any)

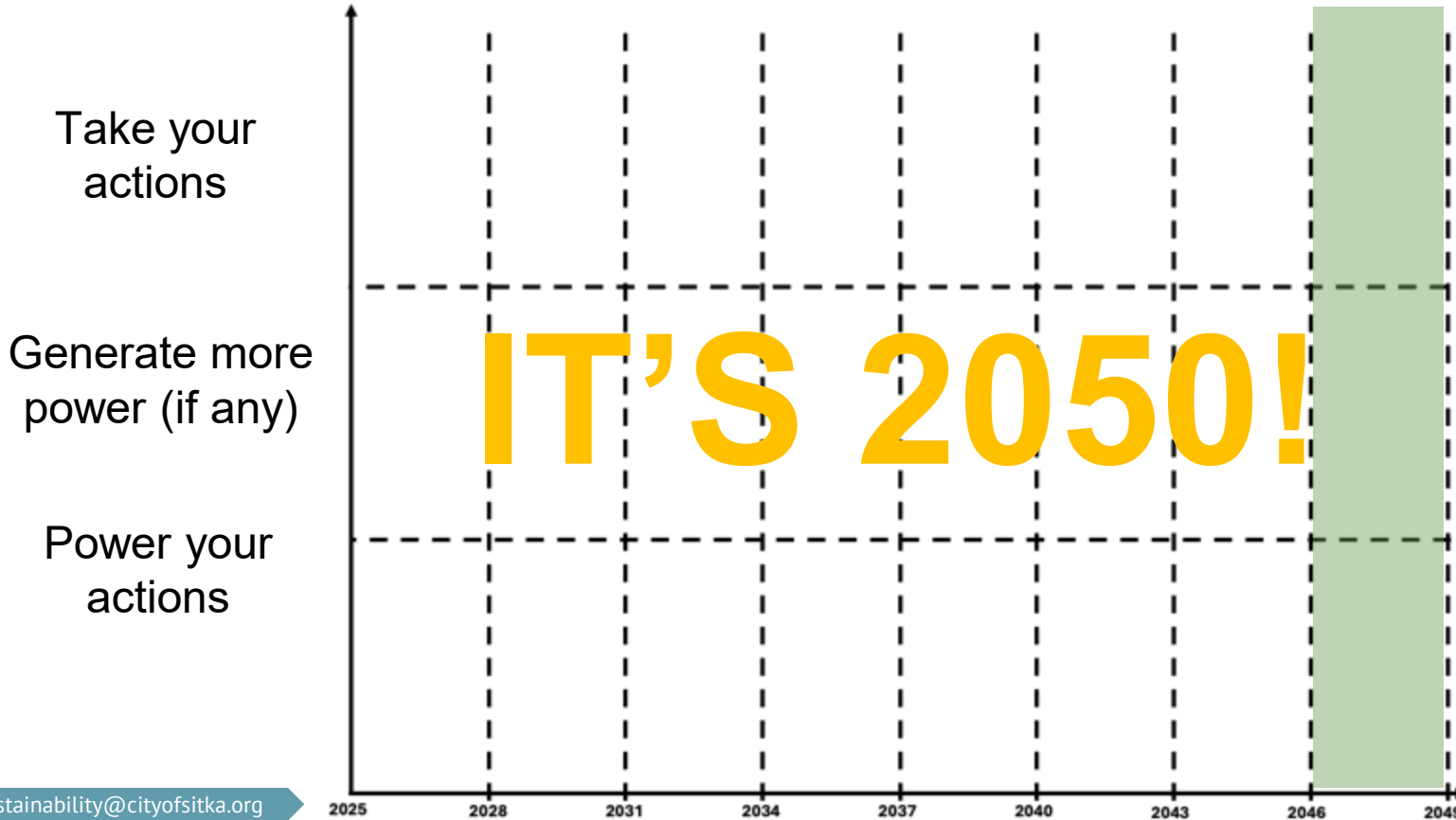
Power your
actions

EVENT:
In the year 2046



Round 8

By 2049...



You did it!

SCORES



You can say you helped plan Sitka's energy future!



What comes next?

Fill out the questionnaire

You just created your own energy vision!

(It will take some time to turn them all into one)

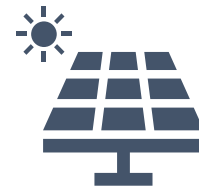
Now Let's talk about how we get there

**What is one action that you
can take that would make
your 2050 Sitka a reality?**



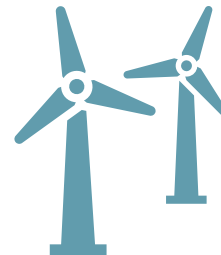
Build
Renewables

Generate
1
Token



Build Renewables

Generate
3
Tokens



Build Renewables

Generate
15
Tokens



WHAT COMES NEXT?

SCRES



Keep learning about energy in Sitka!

www.cityofsitka.com/SCRES