YOUTH ENGAGEMENT FOR CLIMATE ACTION IMPLEMENTATION

Examples of Successful Initiatives





CREATING AN ABUNDANT 🔗 HEALTHY WORLD.

The Energy Coalition

The Energy Coalition (TEC) is a non-profit 501(c)3 organization with over 45 years of experience designing and implementing strategies that transform energy use, generate capital and inspire people to take sustainable energy actions.









Program Design & Implementation Education & Workforce Development

Community Engagement & Outreach Policy, Advocacy & Strategic Planning

Community Partners Include



Pacific Gas and Electric Company...



Los Ange Departme Water & F





L PROT

AGENCY

SAVURONINI.



An EDISON INTERNATIONAL® Company





Climate Literacy is a workforce skill.









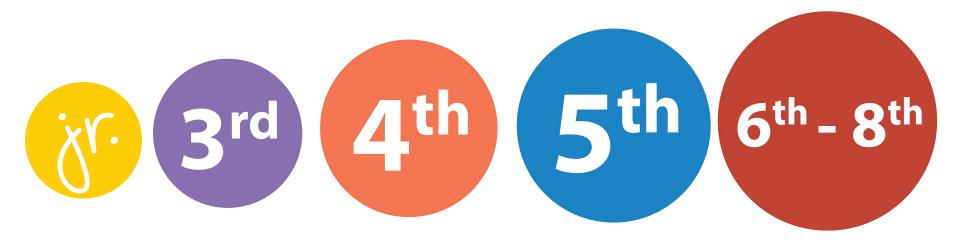


Awareness & Learning

Exploration

Preparation & Training







PEAK Jr.

Details: K - 2nd Grade



Core Concepts

- Kinetic vs. potential energy
- Forms of energy
- Exploring steps to making consumer products
- Design + test



PEAK Jr. is an **NGSS, CCSS, and STEM-aligned** education program designed to actively engage students in science concepts and sustainable behavior.



PEAK 3-D

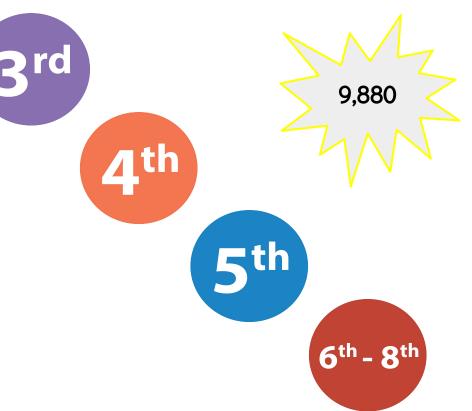
Details: 3rd, 4th, 5th, 6th-8th grades

Core Concepts: Grade-specific pathways built on progressional-based performance expectations

- 3rd: **Our Everyday Forces** (In Motion) energy transfer, electromagnetism, & circuitry
- 4th: **Our Energy Future** responsible resource management for a more sustainable future
- 5th: Our Water Future exploring the water-energy nexus & designing future solutions
- 6th 8th: Engineering Our Changing Earth climate change, design, desal, & human impact

Verified by the **Smithsonian Science Education Center** as one of a handful of authentic NGSS curriculum. PEAK 3-D is built in an experiential-based, student-driven learning framework.





Out-of-School Time Energy Program (OSTEP)

Details: Kinder-8th grade



OSTE out-of-school time energy program



Designed specifically to accommodate the unique factors of **after-school and OST educational settings**, OSTEP engages students in experiential STEM learning through hands-on investigations and empowers them to take action to responsibly manage resources and inspires them to explore future career pathways.



From in-the-classroom to on-the-job

Completing the pipeline from Kindergarten to Workforce





Field Hours



After-School

Engagement

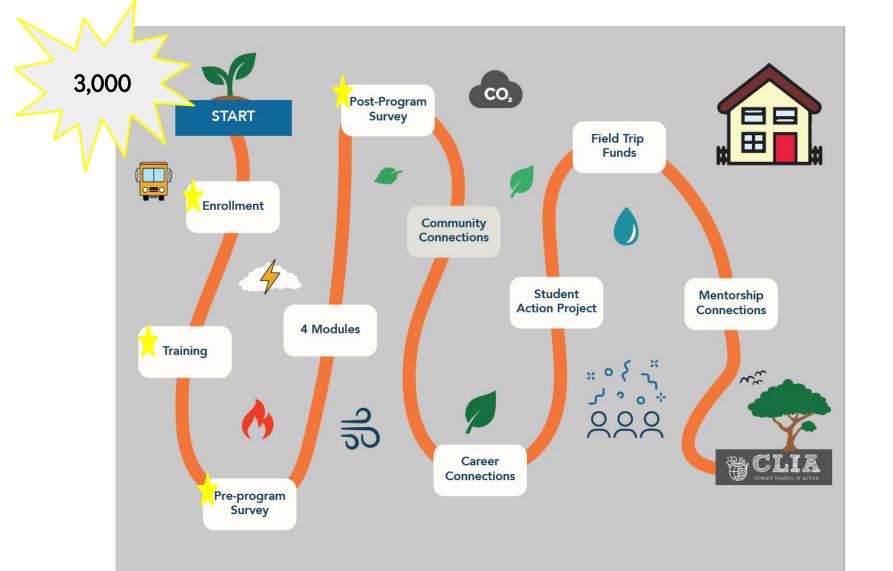




300-400



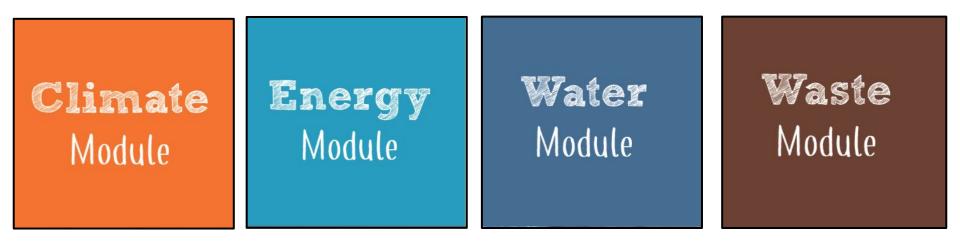
Climate Literacy & Workforce Development







Climate Leaders in Action: Four Modules







Awareness & Learning

Exploration

Preparation & Training





Career Connections Electrician

Description of Work

Install, maintain, and repair electrical wiring, equipment, and fixtures. Ensure that work is in accordance with relevant codes. May install or service street lights, intercom systems, or electrical control systems. Annual Projected Job Openings (CA) 2,790

Annual Projected Job Openings (USA) 18,180

CA Wages \$35,560-\$106,090

Community Connection

What is the connection to your backyard?

PROMPT: You have been put on a task force to design your community's energy portfolio. Move through the resources below to learn about current news in your community, data being gathered there, and people who work in the relevant industries. Keep the following questions in mind as you read:

- What is the timeline to implement your energy portfolio?
- What existing limitations of the grid need to be considered?







Interest in Green Careers

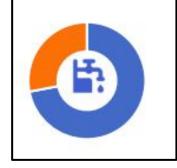


66% of students say they save more energy now.

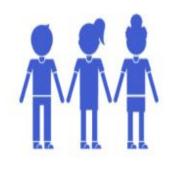


80% of students agree or strongly agree that they know more about "green" and energy careers after participating in PEAK.

Sharing Knowledge



72% of students say they save more water now.



53% of students say they shared their learning with others.

41% of all students shared their learning with their parents.





Generating Capital for Communities Through Energy

Presenter: Rachael Van Schoik rvanschoik@energycoalition.org 510-444-5066







Strategic Energy Innovations Youth Engagement in Climate Protection & Environmental Leadership

Emily Courtney Education Program Director



SEI is a nonprofit organization with 20 years of experience.

SEI inspires and empowers to advance solutions for a healthy, thriving planet.









Energize Schools

 In 2017, served 225 schools and 32,000 students, 70% of which were Title 1

The School of Environmental Leadership

 A "school within a school" model for student environmental leadership

Energize Colleges

 Sustainability PBL infused across disciplines + internships

Climate Corps

 Career catalyst Fellowship program for emerging climate professionals

Energize Schools & SEI Goal

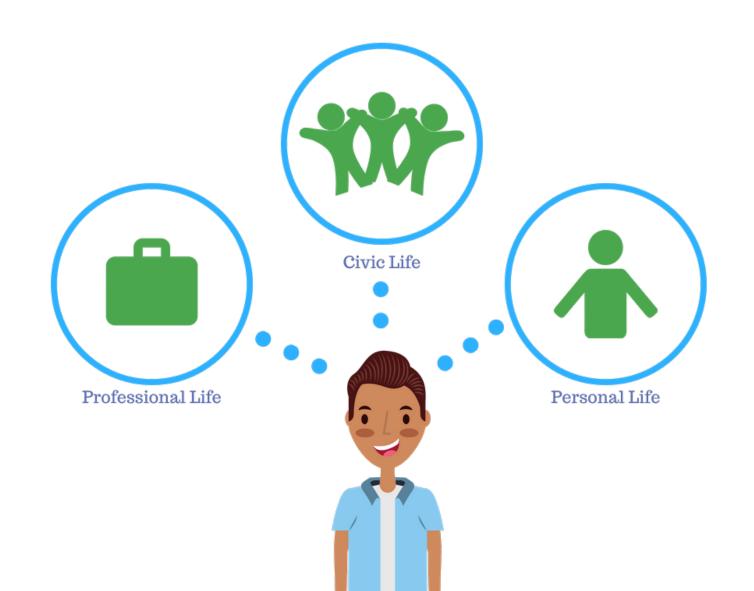


Engage, Inspire & Empower Youth Sustainability Leaders



Activating Student Leadership





Energize Schools





Program Elements

SEI Curriculum



- High School Certificates
 - Energy Auditing
 - Zero Net Energy
 - Green Building
 - Green Transportation
 - Sustainable Enterprise
 - Solar
- Sustainability Assessments
 - Business Eco Audit
 - Home Energy Assessment
 - Home Solar Analysis
 - School Solar Analysis
 - Home Water Assessment
 - School Water Assessment
 - School Transportation Assessment
 - Energy and Solar Monitoring

- Sustainability Projects
 - Solar USB Charger
 - Solar Water Heating
 - Watersheds and Public Water Systems
 - Engineering Aquatic Ecosystems
 - Aquaponics: Sustainability and Design
 - Biomimicry: Engineering Inspired by Nature
 - Climate Change
- Guides
 - School Energy Conservation Guide
 - School Water Conservation Guide
 - School Zero Waste Guide
 - School Policy Guide
 - Sustainability Fair Guide

Aquaponics: Sustainability and Design





- Students design, build, and maintain an aquaponics system.
- Students develop skills in:
 - Computer Applications
 - Technical Drafting
 - Chemistry
 - Electricity/Electronics
 - Algebra/Geometry
 - Engineering
 - Machine Repair



Solar USB Charger





- Students learn key solar concepts, understand electrical circuitry, and build a solar USB charger.
- Students develop skills in:
 - Algebra
 - Physics
 - Electricity/Electronics
 - Soldering
 - Engineering

Zero Net Energy Certificate





- Students conduct a school-wide energy audit and solar analysis
- Create a report on opportunities for energy efficiency and solar, and create a conservation action plan to lead a behavior change campaign.
- Students develop skills in:
 - Computer Applications
 - Energy Auditing
 - Energy Efficiency
 - Conservation Practices
 - Marketing and Communications
 - Graphic Design
 - Algebra
 - Electricity/Electronics
 - Physics
 - English Language Arts

Energy, Environment, and Utilities Course Series



- Three course series in the Energy, Environment, and Utilities Career Technical Education Sector
- Courses have UC A-G approval
- Expanding number of schools and districts implementing courses









Since 2014, Energize Schools has hosted eight Energy Conservation Competitions, resulting in:

550,000 kWh saved

270,000 lbs CO₂ emissions avoided \$82,500 saved



Example: Yosemite Continuation High School

- Yosemite Continuation High School: Title 1 school in Merced, CA
 - Worked with SEI since 2016 on hands-on, in-class instruction and participation in the Energy Conservation Competition
 - The winnings from previous Energize Schools energy competitions cover the cost of technical certifications for students
- With SEI's support, Yosemite High earned the national Green Ribbon School award



Electrical Circuit Project



Example: Earth Day Contest



- First place: Asawa School of the Arts (SOTA)
- SOTA Environmental Club students participated in Earth Day, and took many creative approaches to educating their peers on waste and transportation:
 - Social media
 - Classroom presentations
 - An Earth Day Fair
 - An Ocean Plastic Pollution Assembly
 - A plastic pollution Art Fair





Social Media

Energize Schools

Pollution Assembly 🔅 🧔 Atright everyone it's high time! 🔥 we are starting up a gram flow again, and a it is a start start off is ing to speak to us about the effects of tic on our seas. And we're so inspired b

These are

posts from

instagram.

@sotaenvironmental

our



62 likes ental Thank you to all who participated in our *Why do you Love the Ocean?" Booth at Love Fest!! () U Stories and personal connections to the ocean will displayed at the @palac the @surfridersf Message in a Bottle Shov tarting tomorrow. Understand the human bond to water, enjoy SOTA student art work and help save the planet! C G starts 6pm at the Palace of Fine Arts Friday night. More info to comell 🔮 🌹 🧯 Evalentines



otaenvironmental A visitor writes on ou Why do you Love the Ocean Wall" in the

e SOTA's room at the disurfrider how in the galace. Over 100 pieces of It We will save this @ 1. I Che of the long awaited a

y Pdiscovery #itisuptout duist Aearth Aplanet #wild Agree sace Bhature Enaturephotography







and views sental JUST WALK IN! The sage in a Bottle show is free and full of

edible artwork and advocacy. Show is the room of @asawasots , finated by environmental club. Check it # ____tipecial note: performances star will video cred: Julian Jor taenvironmental Not right now 10 11 e there from 10-4 all day tomorrow



SEI works to develop and support zero waste schools:

- Example: Zero Waste Marin
 - Students lead key education initiatives, including projects like videos on ocean plastic pollution and the impact of litter on environmental health
 - Custodial training
 - Green Team support
 - Waste sorting and collection infrastructure

What's My Role?



All found at SPS





School of Environmental Leadership



Mission: To engage students and create community leaders of tomorrow through a multi-disciplinary, project-based high school education with a focus on environmental issues.

- 4-year program
- Project-based, scaffolded curriculum
- Integration of sustainability and leadership development
 - 6 major topics: energy, food, waste, water, transportation, & climate
- Co-curricular teacher collaboration, student-centered instruction
- Mentorship by teachers, parents, and professionals









Energy Internships



Workforce Development

- 1 Dedicated Climate Corps Fellow per campus
- A minimum of 10 paid student interns

Connections with high schools: Interns

provide energy instruction and inform students about college programs and careers



Energy Projects

Community

Conduct campus & community energy saving projects, identified by program staff, facilities, and other stakeholders

Energy Education



Curriculum • New and/or expanded energy courses, certificates, and degrees in 1 or more energy career pathway



Professional Development

Faculty instructional innovation workshops in energy curriculum and project-based learning

Resources



Faculty grants for course enrichment.
Curriculum and instructional resources shared on statewide program web portal



Working across a network of California campuses (public & private, 2 and 4 year degree institutions) to engage both students and faculty:

 Climate Corps Fellow placed at each campus to coordinate Energize Colleges Internship and Education elements





- Climate Corps is a workforce development program that places emerging climate professionals with organizations to lead high-impact climate projects
 - To date: over 100 partners, 300 Fellows, and 800 projects
- Climate Corps Fellows work on:
 - Climate Resiliency planning at local governments
 - Safe Routes to School plans
 - Solar deployment, marketing, sales, engineering
 - Energy and facilities management
 - And more!





Emily Courtney Director of Education Programs <u>Emily@seiinc.org</u> 415-507-2183

Thank you! Questions?



RISING SUN

Mission

To empower individuals to achieve environmental and economic sustainability for themselves and their communities



Since 1994



RISING SUN



Since 1994



CURRENT PROGRAMS

CYES employs local young adults to provide free energy and water conservation services to homes in their communities

GETS provides job training for union and solar careers to lowincome adults, with a focus on women and formerly incarcerated individuals



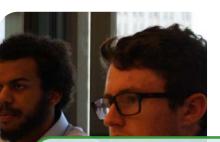
CALIFORNIA YOUTH ENERGY SERVICES

2017 SERVICE TERRITORY



THE NEED

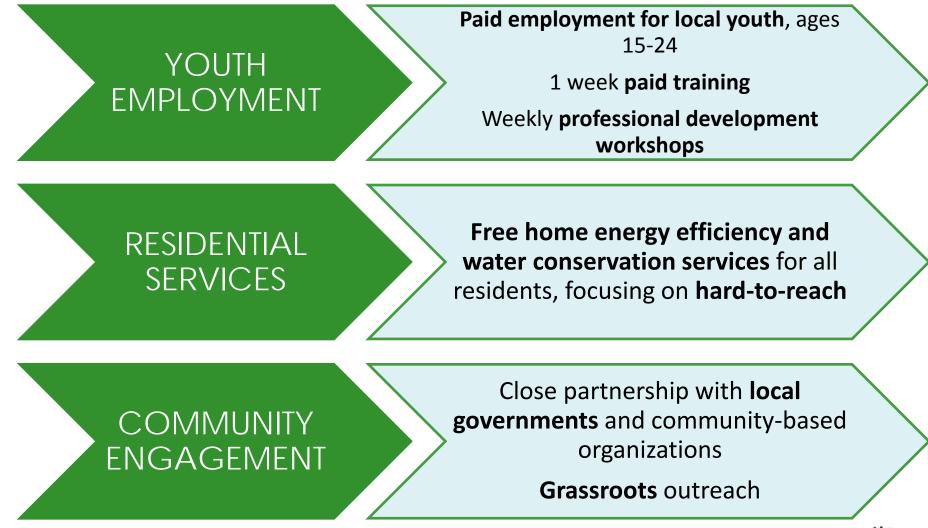
Youth unemployment rates are high in CA, and even higher when broken down by race and income Climate change is real, and our communities need accessible, equitable, and innovative solutions



We need to support and prepare the next generation of climate leaders and changemakers



WHAT WE DO





GREEN HOUSE CALL

ASSESSMENT

- Interior and exterior walkthrough
- GPM measurements: sinks, showers
- Toilet leak detection

INSTALLATION

- Efficient LED lighting
- Bath and kitchen sink aerators
- Showerheads
- Advanced Power Strip

EDUCATION

- Energy- and water-saving tips
- Additional resources
- Behavior change: customer pledge
- Customized follow-up report

STEP ONE

- ESA
- LIHEAP/LIWP
- MyEnergy
- EUC
- Home Upgrade Advisor
- CARE (Community Outreach Contractor)
- Water District Rebates
- Local Recycling Guidelines and Locations



First step in a customer's energy journey, with ZERO barriers to participation



YOUTH EMPLOYMENT AND CAREER EXPOSURE



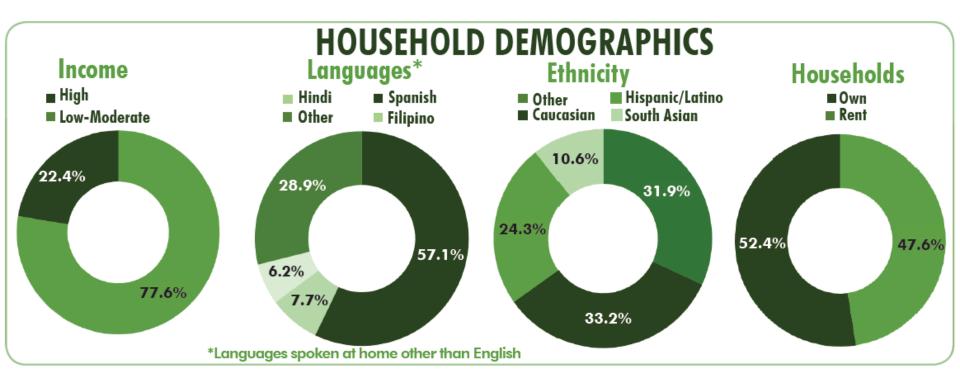


PROGRAM OUTCOMES

	2017	2000-2017
Youth employed	157	1,688
Homes served	4,471	42,667
kWh saved (annual)	782,166	12,776,276
Metric tons of CO2 emissions avoided (annual)	594	10,322
Gallons of water saved	14.8 million	208.3 million



2017 CUSTOMERS SERVED



CYES targets **hard-to-reach households** that are often left out of similar programs, such as renters, multifamily residents, non-native English speakers, seniors, and low-to-moderate income households.



YOUTH IMPACT

Pre-Employment Survey

- 91% said CYES was their first green job
- 72% were youth of color
- 60% were from low-tomoderate income households
- 55% said CYES was their first job
- 39% experienced barriers to employment before CYES
- 39% spoke a primary language other than English

Post-Program and Alumni Surveys

- **96.8%** of CYES graduates said they improved their **professional skills**, such as communication, time management, and initiative, because of CYES
- 90% of CYES alumni said CYES increased the amount they speak up and talk to family and friends about environmental issues
- 80% said CYES made a positive difference in their decision to pursue an environmentally or socially-related major after CYES
- 80% said CYES influenced them positively to take on a leadership position at school, at work, or through a volunteer activity
- **75%** said CYES made a positive difference in their **decision to get a job** right after CYES

YOUTH CAREERS

"Before CYES, I was"	"Now, I'm"
A student	Co-founder of UC Berkeley's Environmental Service Professional Fraternity
Delivering pizza	Doing business administration and calibrating surveying equipment
In school	Working full-time at an environmental nonprofit
An undergraduate	An environmental inspector for the City of San Jose
Interested in environmental factors	Pursuing a degree in Biology at University of the Pacific
Community college student and dishwasher	A biomechanical engineering transfer student pursuing jobs in related fields



FROM OUR YOUTH

"Being able to communicate and work better with clients and customers...gave me **higher self-esteem**."

"Before I began the program, I was very nervous about facing challenges, especially ones that seemed overwhelming. **Now I feel much more confident in myself** and the people around me when taking on heavy tasks. **I became motivated to accomplish the tasks** as I did not want to let the team down."

"My skills improvement is so strong from this program because I tried to make the most of every minute of it. I'm trying to make myself **as applicable to the workforce as possible**."

"Rising Sun is something you do if you want to be a productive and active member in society."

"It gave me **confidence** and told me that yes, I can make money, and that I'm **more than just a high school student**." "I was in an interesting time in my life and **this program gave me structure and something positive to put my motivation in**. Thank you for that."

FROM OUR CUSTOMERS

"I was **very impressed** with the knowledge and help from the youth. They were thorough in explaining everything. I **highly recommend this program to everyone**." "These kids did a great professional job. They are learning how to deal with people and have the education to successfully and intelligently share info about the products. This is a great program for getting kids ready for the working world.

> "Outstanding service – polite, thorough, professional, wellinformed."

"They were very knowledgeable and versatile; impressed that they **are bilingual and went above and beyond** to help out with even the smallest task." "The CYES program is a great program for both educating the community about energy conservation and giving young adults an opportunity for leadership – win-win!"

GET IN TOUCH

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@risingsunEC



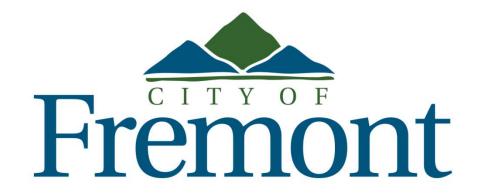
@risingsunenergycenter



facebook.com/risingsunenergycenter

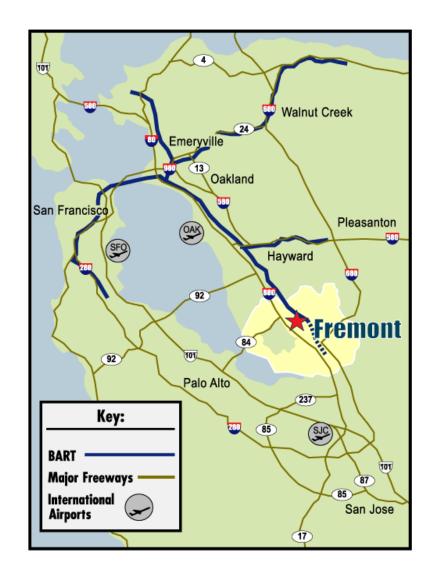


HIGH SCHOOL COMPETITIONS AS A CLIMATE ENGAGEMENT STRATEGY



Setting the Context: Fremont, CA

- Incorporated in 1956 from 5 historical farming districts:
 - Centerville
 - Niles
 - Irvington
 - Mission San Jose
 - Warm Springs
- Rapid growth during the 60's & 70's
 - Cheap fossil fuels
 - Less traffic congestion
 - Large tracts of land available for housing
 - Climate change not yet a concern



Sustainability in Fremont, CA

General Plan Vision –

 Sustainable, Modern, Strategically Urban City

Climate Action Plan –

 25% GHG Emission Reduction from 2005 Baseline by 2020

Cleantech Innovation –

- Dubbed "Silicon Valley East"
- 50+ cleantechnology firms

FREMONT INNOVATION DISTRICT



Why High School Competitions?







Students volunteer & win prizes
 Community members take action on climate
 Fremont becomes greener City

FIERCE

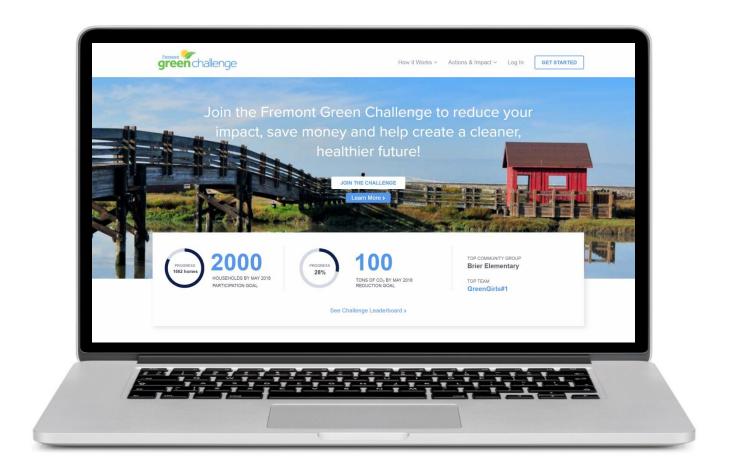
- Youth environmental group since 2010
- Focus on community level environmental issues
- Guidance/mentorship from FUSD & City of Fremont





facebook.com/groups/rufierce

2018 Fremont Green Challenge



"FitBit[®] for Sustainability"

Competition Details

- Collaboration between
 FIERCE and City
- Teams of 4+ from all 5
 FUSD High Schools
- Competition between teams and schools to generate sign-ups
- Participants earn Service Learning Hours
- Winning teams awarded Awesome Prizes!

Are you a high school student interested in sustainability? Want to earn service learning hours and win fun prizes?



Help create a sustainable & healthy future for Fremont by engaging with your community & signing up residents for the City's Fremont Green Challenge!

FREMONT GREEN CHALLENGE COMPETITION Sponsored by FIERCE

Dates of Competition: March 5, 2018 to April 22, 2018

> Sign up by: March 2, 2018

Sign up today! Visit Fremont.gov/FGCCompetition



Kick Off: Student Sustainability Dinner

Are you a high school student interested in sustainability? Want to earn service learning hours and win fun prizes?





Learn how to volunteer!



Join FIERCE for some healthy cooking and eating and to learn about the new Fremont Green Challenge High School Competition!

SUSTAINABILITYFriday, February 2SUSTAINABILITY4:30 p.m. to 7:30 p.m.DINNERFremont Teen Center39770 Paseo Padre Pkwy

To RSVP, visit: Fremont.gov/FIERCEdinner









bow & works

- ✓ Student teams receive training and materials to help engage residents.
- ✓ Students reach out to neighbors, family, friends, and community groups to generate sign-ups.
- ✓ Student teams get volunteer hours & prizes for their achievements.





<u>American High School</u> (18 students | 3 teams)

- Green Go Getters, AHS1, LEAN Green Machine

Irvington High School (9 students | 2 teams)

- Team Greenergy, Irvington 1

Kennedy High School (4 students | 1 team)

- Green World

Mission San Jose High School (18 students | 5 teams)

 Ex-Static for Change, Watt's Up, TREEt the Planet Well, Terra Nova-T111, Go Verde

<u>Washington High School</u> (8 students | 2 teams)

– Earthlings, Green to the Extreme



Top Prizes: Local Company Gear!



All Participants: Zero Waste Kits!





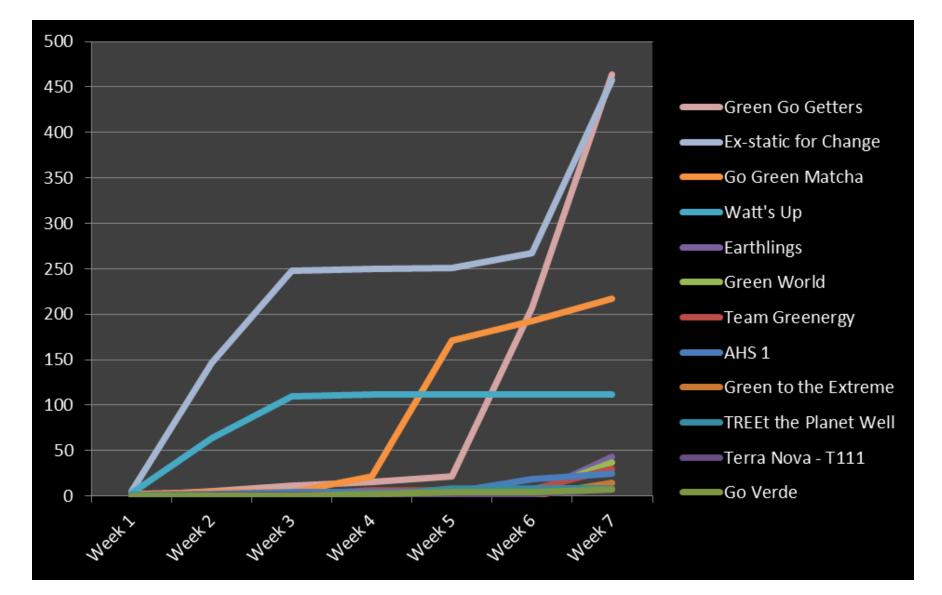
March 5 – April 22, 2018

1,427 households added to Fremont Green Challenge!

- Before competition: 211 households
- Current count: 1,662 households

124 documented student service learning hours!

Team Sign-ups by Week



Winners

1st Place: Green Go Getters (AHS) – 464 Households
 2nd Place: Ex-Static for Change (MSJ) – 458 Households
 3rd Place: Go Green Matcha (AHS) – 217 Households
 4th Place: Watt's Up (MSJ) – 112 Households

Honorable Mentions

- Earthlings (WHS) 43 Households
- Green World (KHS) 37 Households
- Team Greenergy (IHS) 30 Households
- AHS 1 (AHS) 25 Households
- Green to the Extreme (WHS) 12 Households
- TREEt the Planet Well (MSJ) 8 Households
- Terra Nova-T111 (MSJ) 7 Households
- Go Verde (MSJ) 7 Households

Lessons Learned

- Time consuming, but worth it!
- Constant & effective communication are <u>necessary</u>
- Student motivators = Prizes, bragging rights, service hours, + doing something good!
- Adult motivators = Saving money, helping students
- Leveraging existing (sympathetic) audiences
- Students want more coaching to be "Green Ambassadors"
- Unfiltered youth is highly valuable + informative







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