

# Overview of Technology Implementation Office (TIO)



Technology Implementation Office Steering Committee Meeting  
March 25, 2019

Ranyee Chiang  
Technology Implementation Officer

# Mission: Accelerate Adoption of Climate Technologies to Reduce Demand for Fossil Fuels

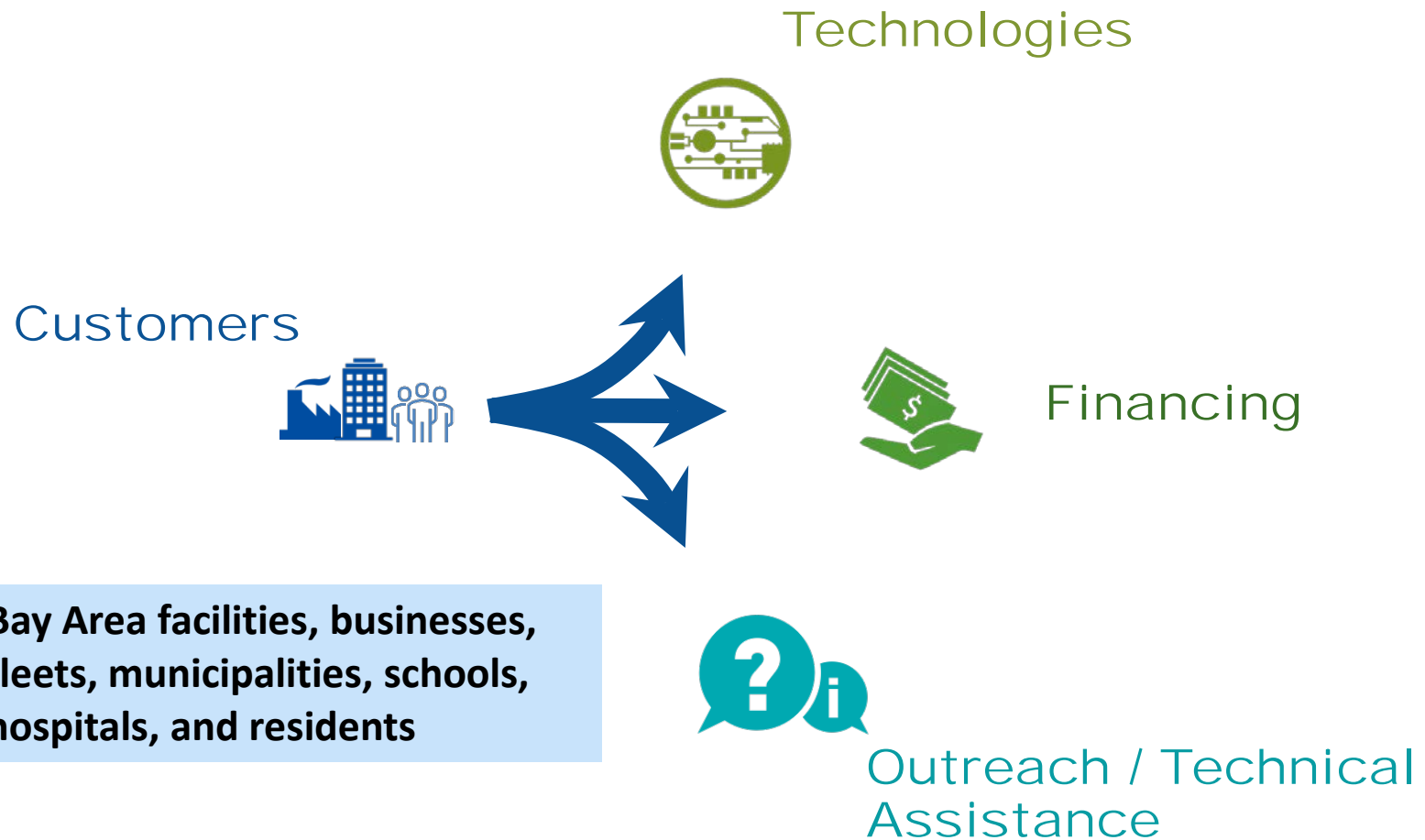


# TIO Steering Committee

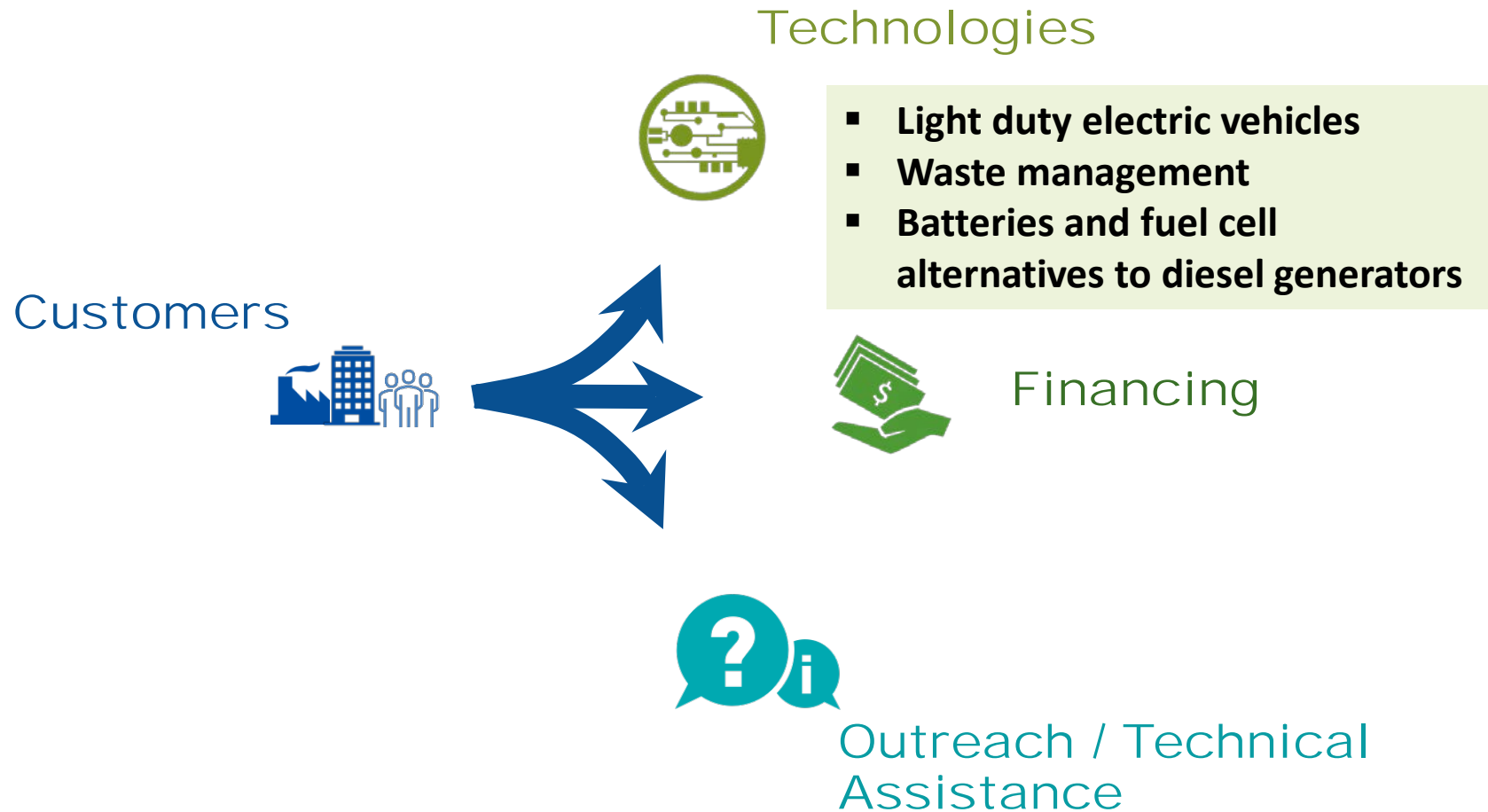


- **Introductions for committee members and staff**
- **Committee provides recommendations and support on:**
  - Vision and strategy
  - Execution of the strategy and resolving challenges
  - Technology readiness, business readiness, market and emissions reduction impact
  - Strategies to maximize effectiveness of TIO budget and financing programs
  - Raising profile and visibility of office and identifying new partnerships
- **Semiannual meetings**
  - Meetings were initially held quarterly during the 1st year from 2017-2018
- **Brown Act guidelines**

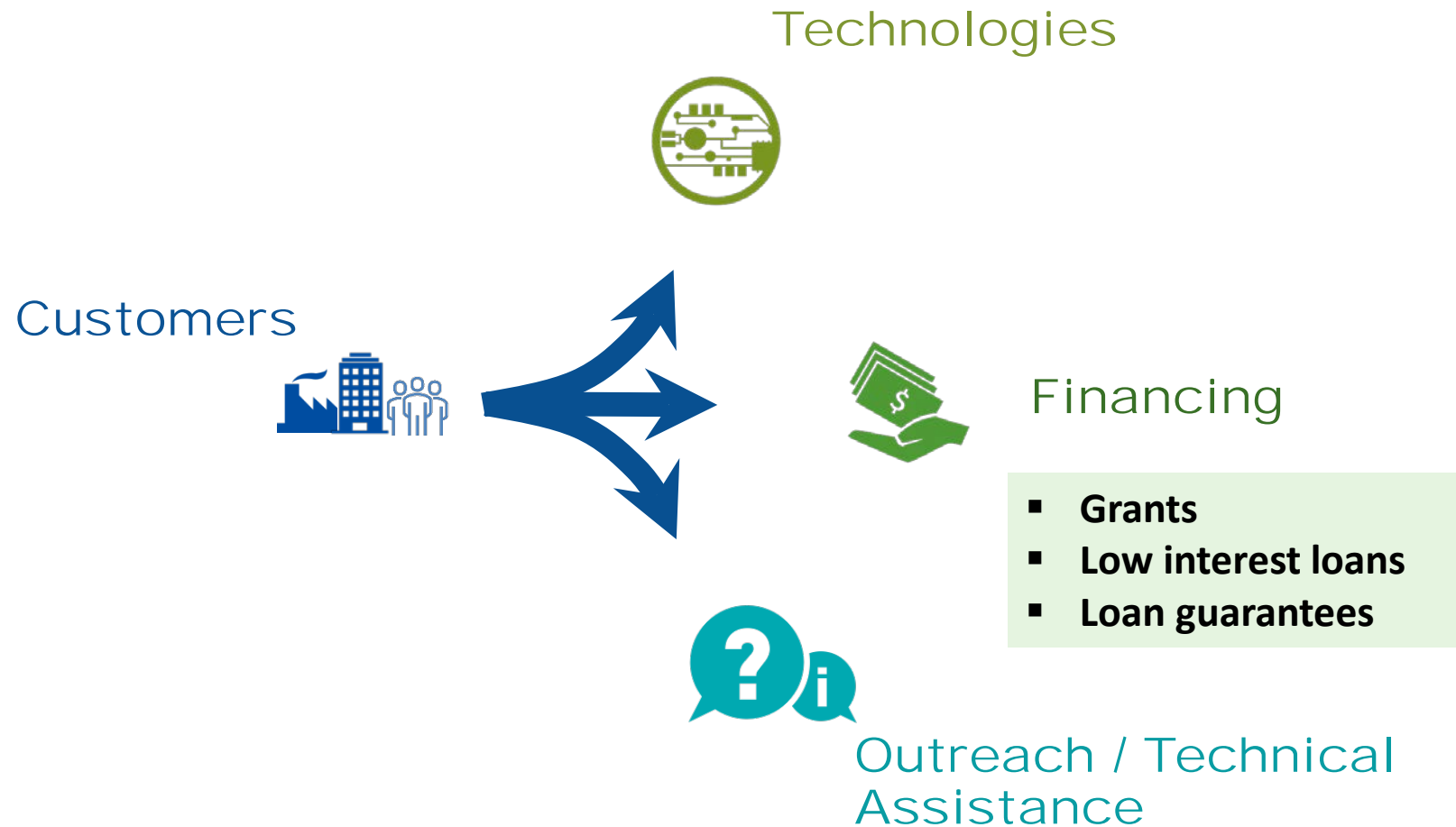
# Focus on Connecting Bay Area Customers



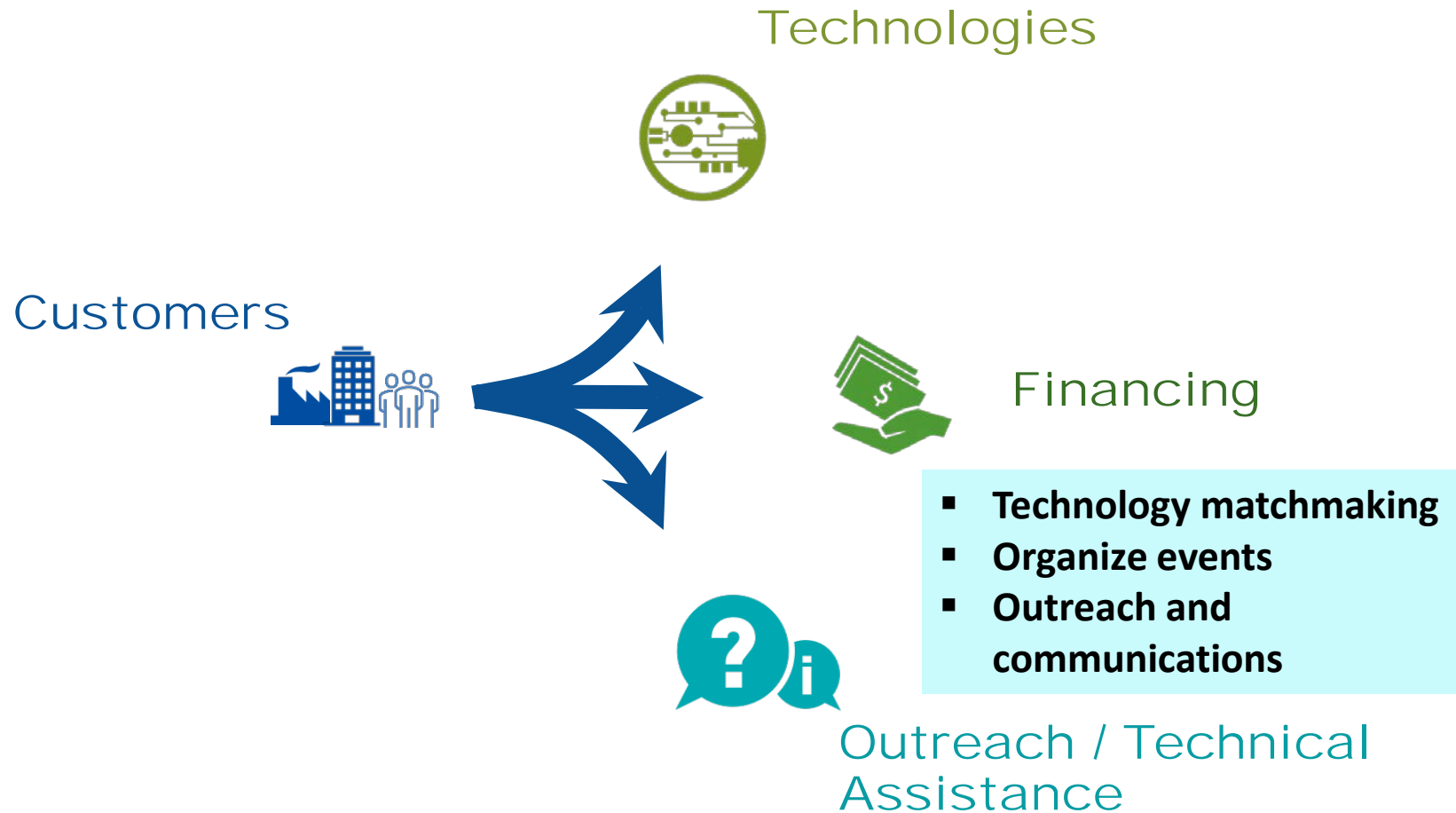
# Adopt Emerging Technologies with Potential to Scale Beyond Bay Area



# Offer Appropriate Financial Incentives



# Offer Support that Complement Financial Incentives



# Key Financing Programs



## Climate Tech Finance

- Loan guarantees for small businesses/industrial facilities
- Loans for public industrial facilities

## Charge!

- Grants for publicly accessible electric vehicle infrastructure

## Clean Fleets

- Grants for public and private zero emission light duty vehicle fleets

## Clean Cars For All

- Voucher for clean vehicle or transportation card for low income consumers who turn in older vehicle



# Connecting Bay Area Organizations



## Climate Tech Network

- Raise awareness about new climate technologies
- Connect Bay Area facilities, technology developers, and local government

## Bay Area Electric Vehicle (EV) Coordinating Council

- Coordinate and leverage EV programs across Bay Area governments, businesses, and non-profits
- Information exchange and networking

# Climate Tech Finance (CTF)

*Program Overview and Launch*

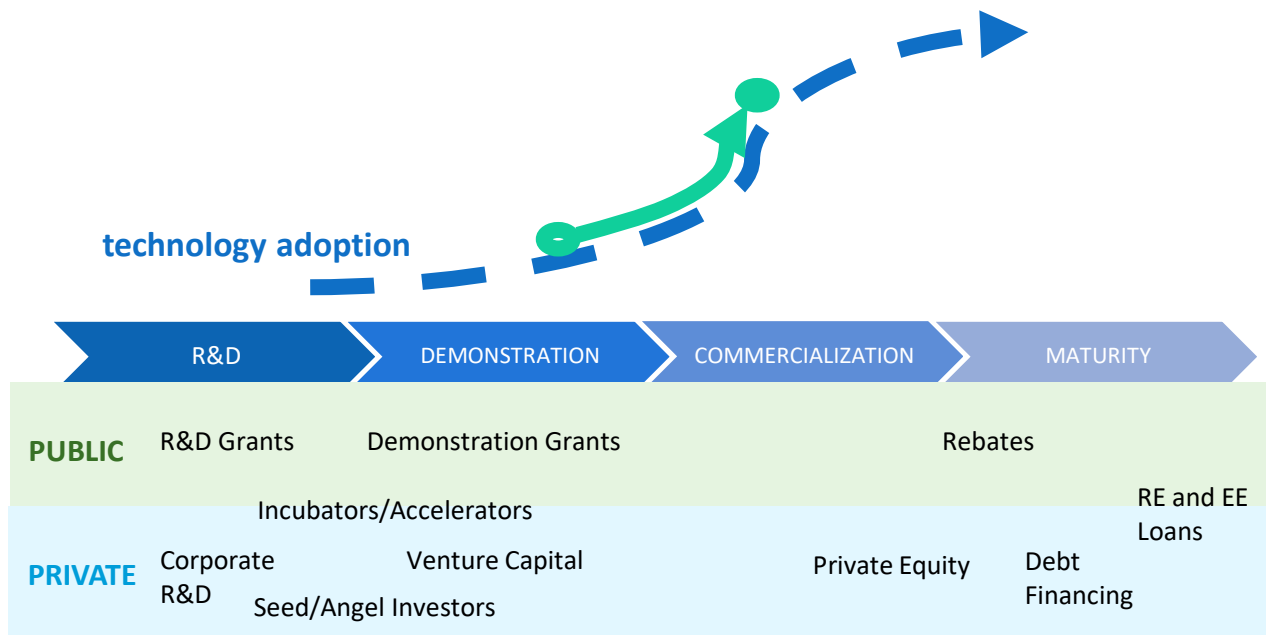


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Derrick Tang  
Manager

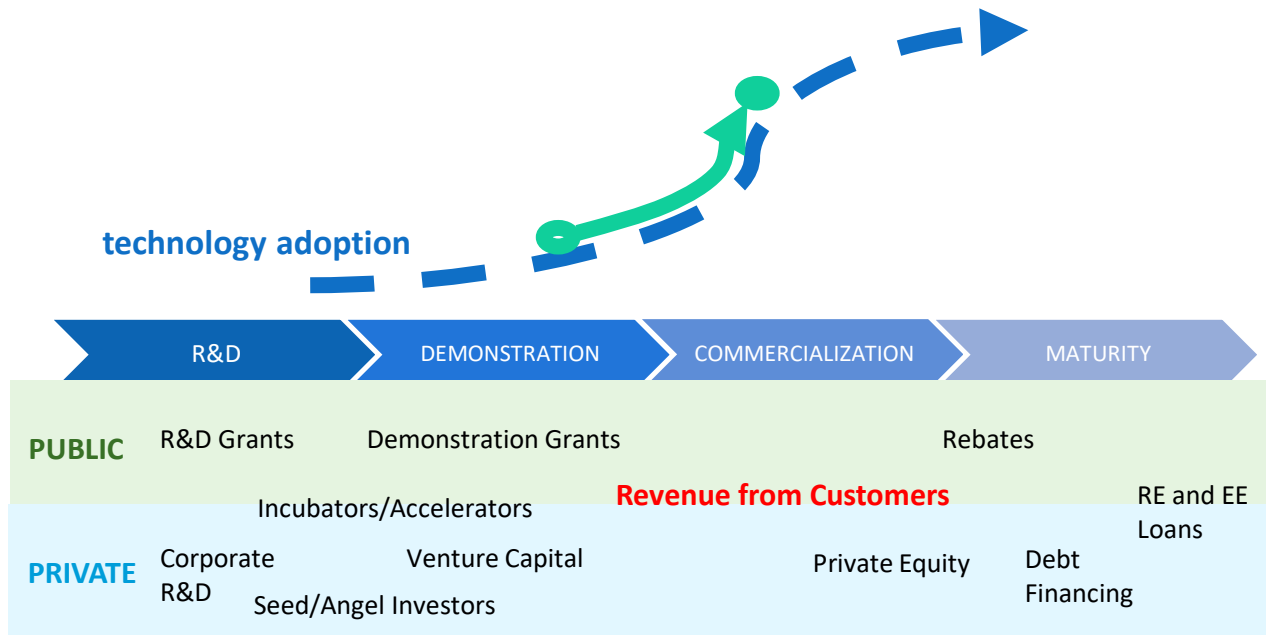
Lucian Go  
Air Quality Technician

# Air District is Targeting the Commercialization Gap to Accelerate Technology Adoption



Public and private funding supports early and mature technology stages

# Commercialization Requires Customers



**Goal:** Create financing that encourages customers to buy demonstrated technologies

# Potential Customers: 9,000+ Facilities in the Bay Area



Wastewater treatment plants

Landfills

Composting facilities

Cement manufacturing

Food production

Schools and hospitals

Public and private buildings



## CLIMATE TECH FINANCE



Find and evaluate **emerging technologies** that reduce greenhouse gas emissions

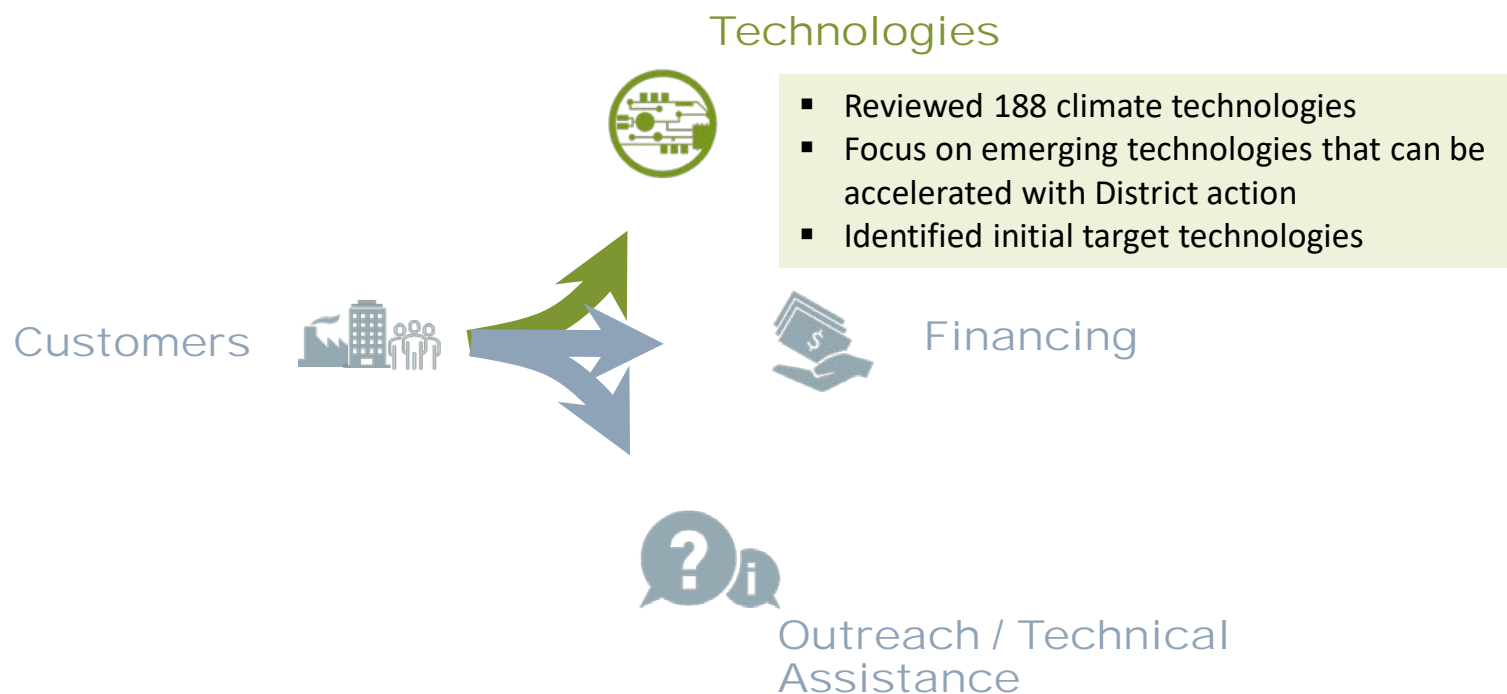


Provide **superior financing** to incentivize the adoption of cost-saving climate technologies

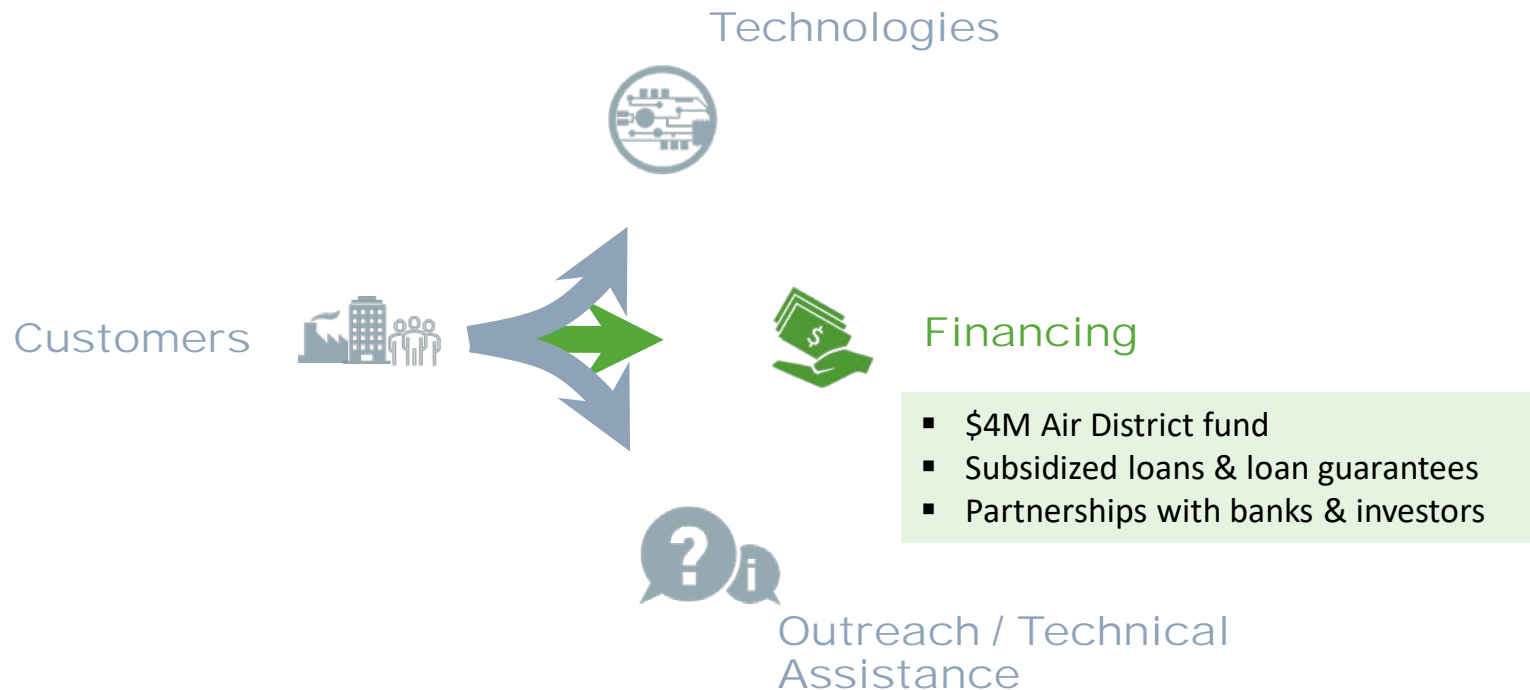


**Bring together** technology providers and technology adopters to drive climate action

# CTF Value Proposition: Technologies



# CTF Value Proposition: Financing





# Financing Collaboration with IBank



## **Loans for Public Agencies**

- From \$500k to \$30M
- Up to 30-year terms
- Subsidized rates and fees
- Technical evaluation services

## **Loan Guarantees for Small Businesses**

- Up to 90% guarantee
- Loans of up to \$20M
- Max guarantee of \$2.5M
- Technical evaluation services

***Air District funds leveraged up to 10x***

# CTF: Outreach & Assistance



# Conferences and Events



Hosted **Climate Tech Marketplace**  
Bay Area Metro Center, Sep 2018



Sponsored and exhibited at **VERGE**  
Oakland, Oct 2018



Sponsored and exhibited at **Cleantech Forum**  
San Francisco, Jan 2019



Spoke at **Energy, Utility & Environment Conference**  
San Diego, Feb 2019

# Climate Tech Network: Bringing Together Municipalities, Technologies, and Investors



- Create partnerships that result in projects
- Share examples of successful projects
- Promote Climate Tech Finance
- Quarterly events
  - **January 22:** Kickoff and Program Overview
  - **May 13:** Building Electrification
  - **Q3 2019:** Waste Technologies



# Next Steps for Outreach



## Ongoing activities:

- Targeted outreach to facilities and technology developers
- Public engagement through Climate Tech Network
- Conducting outreach through Air District inspectors, permit engineers, and planners

## Seeking feedback from Steering Committee on:

- Additional channels for outreach
- Effective outreach strategies

# Climate Tech Finance

*Potential Projects and Future Directions*



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Derrick Tang, Manager

# Assessment of Opportunities to Reduce Greenhouse Gas Emissions at Industrial Facilities (2018)



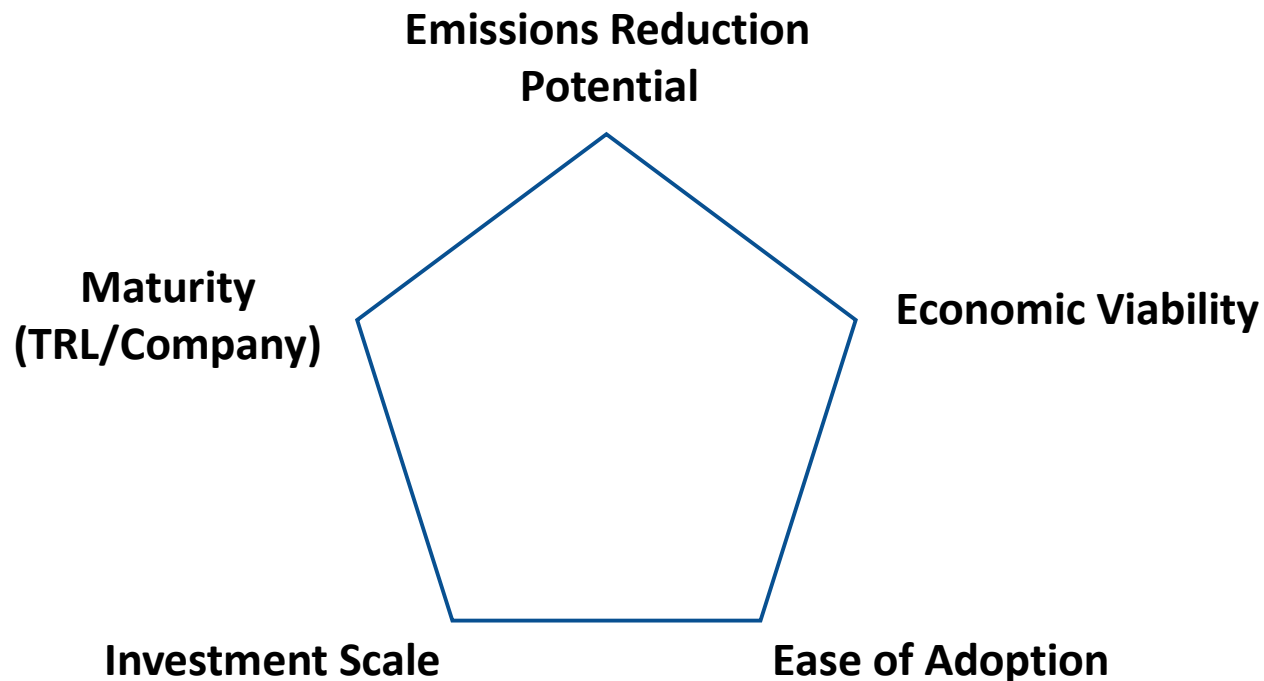
## Climate Technology Review

An Assessment of Opportunities to Reduce  
Greenhouse Gas Emissions at Stationary Sources  
in the Bay Area

October 2018



[baaqmd.gov/CTF](http://baaqmd.gov/CTF)



**188**

technologies reviewed

**33**

highlighted in report



# Waste Technologies to Divert Organic Waste from Landfills and Reduce Emissions



Advanced  
wastewater filtration

Process  
improvements



Cogeneration  
upgrades

Biogas treatment

Anaerobic digester  
upgrades

Food waste co-  
digestion



# Energy Storage/Decarbonization Technologies to Reduce Energy and Maintenance Costs



Advanced energy optimization



Advanced energy or heat generation

Battery power supply

Hydrogen fuel cells

# What are Customers Interested in?



Wastewater  
Treatment  
Plants

Increased  
biogas  
production

Organic waste  
diversion

Broader  
infrastructure  
updates



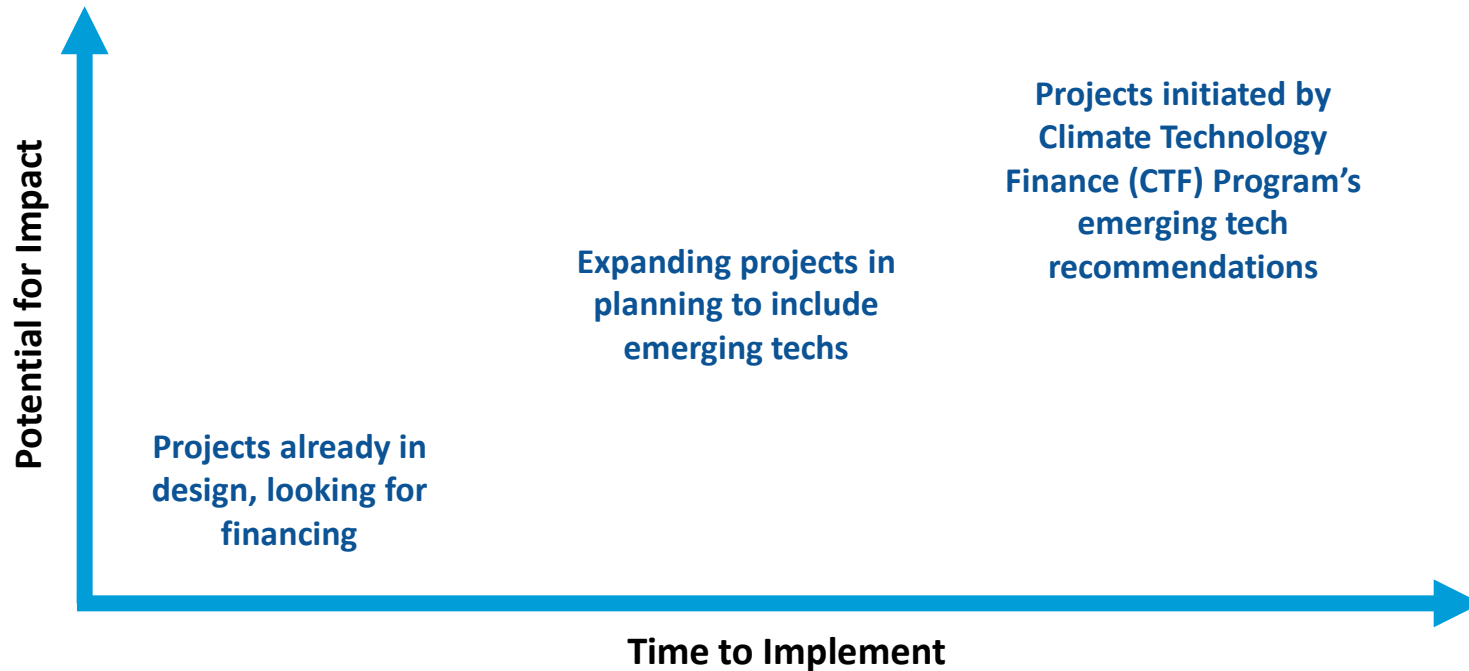
Public  
Agencies  
and Building  
Owners

Replacing  
diesel  
generators

Building  
climate  
resilience

Broader  
electrification  
goals

# Project Priorities



# Future Opportunities to Collaborate



## **Support additional loan projects**

Identify additional funding to support the financing of CTF projects

## **Co-finance projects**

Identify additional financing partners to enable project execution

## **Enhance technical services**

Offer Air District expertise for technology research, in-depth engineering analysis of projects, or technology clearinghouse resource for industrial facilities