

Connecticut Green Bank 2.0

From 1 to 2 Orders of Magnitude

Pocantico Conference Center of the Rockefeller Brothers Fund
February 6 - 7, 2019





Pocantico Center of the Rockefeller Brothers Fund

In Attendance

Mark Allegrini, Sustainable Connecticut
 Jessica Bailey, Greenworks Lending
 David Cantor, Liberty Bank
 Claire Coleman, Connecticut Fund for the Environment
 Stuart Decew, Yale Center for Business and the Environment
 Mackey Dykes, Connecticut Green Bank
 Monica Eager, Dpict (co-facilitator)
 Brian Farnen, Connecticut Green Bank
 Bryan Garcia, Connecticut Green Bank
 John Harrity, Roundtable on Climate and Jobs
 John Humphries, Roundtable on Climate and Jobs
 Bert Hunter, Connecticut Green Bank
 Alex Kovtunencko, Connecticut Green Bank
 Bob Lamb, Lamont Financial

Pat McDonnell, Avangrid
 Jane Murphy, Connecticut Green Bank
 Kerry O'Neill, Inclusive Prosperity Capital
 Selya Price, Connecticut Green Bank
 Dr. Jonathan Raab, Raab Associates (facilitator)
 Cheryl Samuels, Connecticut Green Bank
 Robert Schmitt, Connecticut Green Bank
 Eric Shrago, Connecticut Green Bank
 Catherine Smith, Connecticut DECD
 Mary Sotos, Connecticut DEEP
 Kim Stevenson, Connecticut Green Bank
 Mary Evelyn Tucker, Yale University
 Brenda Watson, Operation Fuel

As is the case with all materials resulting from meetings held at The Pocantico Center, the views expressed in this report are not necessarily those of the Rockefeller Brothers Fund, its trustees, or its staff.

Connecticut Green Bank 2.0

From 1 to 2 Orders of Magnitude

The third aim of the Paris Agreement is “making finance flows consistent with a pathway towards low greenhouse gas emissions and climate resilient development.” With this in mind, the Connecticut Green Bank convened Connecticut leaders in February of 2019 to establish another ambitious strategy - for the Connecticut Green Bank to mobilize greater investment in Connecticut’s green energy economy to combat climate change.

The conference was held with three objectives in mind:

1. Assessing progress achieved by Connecticut Green Bank to date;
2. Engaging staff, board members, and stakeholders in a facilitated dialogue to solicit insights and new ideas; and
3. Using key insights and ideas to help develop a framework for a multi-year comprehensive plan



Bryan Garcia, CT Green Bank

Through numerous “green storming” sessions, these leaders laid out a vision for an ideal sustainable future in Connecticut, exploring current and future products and programs and sources of funding, and identifying ways to “scale up” the Green Bank’s impact. Their visions went beyond just growing the green energy economy, but encapsulated a better and more sustainable future for humanity. Together, we envisioned a future that not just recognizes the importance of green energy, but one that embraces the significance of inclusive prosperity.

In memorializing our discussions and outputs from this strategic retreat, we have the pieces needed to forge a clearer path forward to realize this future.

Bryan Garcia, President and CEO
Connecticut Green Bank





Participants in the main meeting room at the Pocantico Center of the Rockefeller Brothers Fund



Participants during the Welcome & Introductions session

Welcome & Introductions

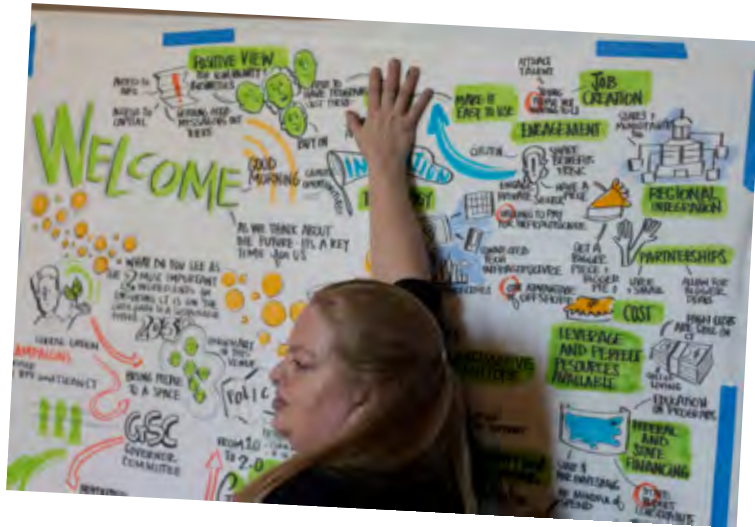
Connecticut Green Bank staff and stakeholders first gathered at the Pocantico Center of the Rockefeller Brothers Fund in November 2011 to establish a vision for the Green Bank in 2020. More than seven years later, the Green Bank reconvened at the Pocantico Center to reflect on the past and envision an even bigger future. The Connecticut Green Bank 1.0 to 2.0 conference included stakeholders across a broad continuum, from senior staff and board members of the Green Bank, to leaders of financial service companies, utilities and state agencies, and other statewide leaders. Constant across this spectrum was a vision for a more sustainable future for Connecticut. Participants were asked what they saw as the most important ingredients for Connecticut to be on a glide path to a sustainable future by 2030 and the biggest potential impediments. While many themes emerged, the role the Green Bank can play in order to ensure such a future was woven throughout the conversation.

Ingredients for Success. Attendees identified a number of important ingredients for success including a sense of urgency, increased awareness and engagement, better access to capital and innovative financing, scalable and impactful ideas, smart transitions and more attractive markets for investors and innovators.

Potential Impediments. The State budget, political will, a focus on financial sustainability, a broadening scope, customer acquisition, rigid regulatory framework, and the myth of scarcity were all identified by the group as possible impediments to success and progress.



John Harrity, Roundtable on Climate and Jobs



Monica Eager, Dpict



Eric Shrago & Bryan Garcia, CT Green Bank, Dr. Jonathan Raab, Raab Associates



Claire Coleman, CT Fund for the Environment

POSITIVE VIEW
COMMUNITY +
ISSUES
GOOD
ING OUT

ME

AS
TANT
for
THE
INABLE

HISTORICAL
IN THIS
VENUE

PRODUCTS and PROGRAMS

E

ABLE TO
TRANSLATE
TARGETS

ABLE TO REDIRECT DON'T GET DISTRACTED!

ABLE TO
HAVE PROGRAMS
JUST THERE

BUY IN

CAPTURE
OPPORTUNITIES

SCALE

BROADER
AND DEEPER

MAKE IT
EASY TO USE

ATTRACT
TALENT

YOUNG
PEOPLE NOT
MOVING TO CT

JOB
CREATION

ENGAGEMENT

CITIZEN

SHARE
BENEFITS
+ RISK

ENGAGE
PRIVATE SECTOR

WILLING TO PAY
FOR INFRASTRUCTURE



REGIONAL
INTEGRATION

GET A
BIGGER
PIECE +
BIGGER
PIE

PARTNERSHIPS

LARGE
+ SMALL

ALLOW FOR
BIGGER
DEALS

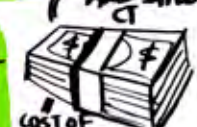
CONNECTED
TECH
INFRASTRUCTURE

COST ADVANTAGE
of OFFSHORE

SMART CITIES

COST

LEVERAGE
AND PERFECT
RESOURCES
AVAILABLE



HIGH COSTS
ARE STILL IN
CT
COST OF
LIVING
EDUCATION
ON PROGRAMS

LEGISLATIVE
SUPPORT

POLITICAL
WILL

WILL NEED
POLITICAL SUPPORT



FEDERAL
AND
STATE
FINANCING

CLARITY and
EXPLAINING
WHAT IS
AVAILABLE

STATE \$
FOR INVESTING

BE MINDFUL of
SPEND

STATE
BUDGET
CONSTRAINTS

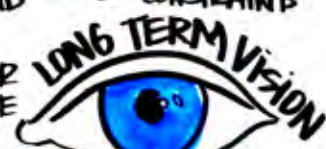
INNOVATIVE
financing

THE
COST IN CT
IS AN IMPEDIMENT

DIRECT
+ FOCUSED

BETTER TECH

BETTER TELE-COMMUTE



ENSURE
FOCUS

RATES and
IMPACT

INNOVATION

FOCUS ON
BIG IDEAS

MESSAGING

ALL ALIGNED
TO THIS

SHARED
SENSE of
URGENCY

THERE IS A MYTH of SCARCITY PROBLEM

BE ABLE TO
GET CREATIVE

FOR POLICY
MAKERS

URGENCY

AT ALL
LEVELS

TOUGH
WHEN THINKING
2030

NOT JUST
BITE SIZE
THINK LONG
TERM: NOT JUST
2 YEARS OUT

CONSISTENT
IMPLEMENTATION
of POLICY

GOOD
POLICY

GROWING
JOBS

GOOD for
ALL

COMMUNITY
RE-DEVELOPMENT



THOSE THAT
SUPPORT OUR
STRATEGY



IDENTIFY
LEVERS for FUTURE

FROM 1.0
TO 2.0

GROW

DRIVE MORE
IN ORDER of
MAGNITUDE

GREAT CT
FRAMEWORKS
- CLEAN ENERGY
- \$ IN THE STATE

GOOD
MORNING
AS WE THINK ABOUT
THE FUTURE - ITS A KEY
TIME for US

INNOVATION
TECHNOLOGY

From Green Bank 1.0 to Green Bank 2.0

Following a review of Green Bank 1.0 - the history, purpose, vision, mission and goals, as well as the structure, business units and performance of Connecticut Green Bank from July 2011 through December 2018 - participants were presented with a vision for Green Bank 2.0. This vision included:

Increasing investment in Connecticut. Scaling up investment another order of magnitude from \$80/person/year to \$850/person/year for Connecticut to meet the level of investment highlighted by the UN Sustainable Development Goals;

Carbon neutrality by 2050. Supporting Governor Lamont's vision of carbon neutrality by 2050, building on the leadership of his predecessors in establishing policies and framework to support clean energy deployment and mitigate climate change; and

Environmental sustainability. Recognizing the work of others (NY, RI, UK, etc.) in adapting the green bank model to other environmental infrastructure sectors (waste and recycling, water, agriculture, land conservation, parks, resiliency, etc.).



Brian Farnen, CT Green Bank

Participants were enthusiastic about the ongoing leadership role that Connecticut Green Bank must play in creating innovative, scalable solutions that can be replicated in the state and around the world. The vision for Green Bank 2.0 sparked a discussion among participants with many themes emerging:

Financial sustainability. The Green Bank, now facing new constraints and under pressure to make financial returns that lead to organizational sustainability, needs to establish investment targets that 1) drive ROI and 2) continue to leverage public funds with multiples of capital investment.

Addressing climate change “wedges.” The development of markets for technologies that have the potential to help Connecticut meet its 2050 climate change goals present big opportunities. These market “wedges” include zero emission vehicles, battery storage and carbon free clean energy, renewable heating and cooling, and resiliency infrastructure (such as fuel cells and microgrids).

“Green” leadership and advocacy. Connecticut Green Bank’s role as a catalyst and leader, raising awareness for and defining “green” in the U.S., will continue to be important. The ability to expand awareness of green bonding mechanisms, collect and analyze data, develop impact metrics, and communicate results to investors and citizens can have far-reaching effects.

Underserved Markets. Low income households, nonprofits, small businesses, and other underserved markets need the Green Bank’s support in attracting private investment and ensuring inclusive prosperity. The Green Bank can make big impacts by reducing perceived risks by private investors, piloting and scaling programs, and eliminating barriers to clean energy improvements.

Scale and Scope. The Green Bank has a unique ability to evolve and adapt by building on its strength’s in financing and clean energy policy to scale-up investments in clean energy. However, broadening scope to include new markets (e.g., environmental infrastructure) would present new challenges.



Mary Sotos, DEEP (foreground), Eric Shrago, CT Green Bank (background)

PROGRAMS

HARD TO GET GREEN CERTIFICATION SEEN AS \$ INVESTMENT BENEFIT

MARGIN

SOME ARE WORKING ON VERY SLIM MARGINS

THIS IS THE MOST IMPORTANT THING WE WILL DO!

SUSTAINABILITY

NOT JUST BANKING

INVESTMENT PENSIONS ETC.

METRICS

ABLE TO ACCESS

DATA CONSOLIDATION

DELIVERED SUCCESS

SUPPORT & KNOWLEDGE

ALL BANKS LIKE GREEN BANK OR WE TAKE ON GREEN FUTURE

POLICY

BE GREEN ADVOCATES INTERNALLY

ABLE TO USE DATA TO INACT

TOOLS

TECHNIQUES

TECH

THINK ABOUT HOW WE BUILD THE PLANE WHILE FLYING

IT'S AN AGE-THING PEOPLE ARE NOT ALWAYS PLUGGED IN



NEED FOR MORE KNOWLEDGE + EDUCATION INSIDE BANKS

THINK ABOUT SCALE

THINK ABOUT WHERE WE ARE HEADED



INCUBATE FOR NATIONAL APPLICATION

IF WE DON'T LEAD NO ONE ELSE WILL

MODEL 1.0

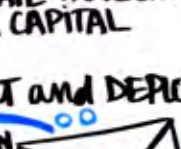
WE ENVISIONED

LEAD THE GREEN BANK MOVEMENT

ACCELERATING PRIVATE INVESTMENT AND CAPITAL

ATTRACT AND DEPLOY

INTEREST IN GREEN: USA



LEVERAGE PUBLIC FUNDS

SEE THE NEED + DO THE CALCULATION

HEALTHY HOME



ELECTRIC CAR

CAPITAL

TODAY + TOMORROW THINK BIG AGAIN

2.0

ENSURE OUR VISION IS BIG ENOUGH

ADAPT

NOTICE SHIFTS

BALANCE COMPETITION OF FOCUS

INVESTMENT CAPITAL + CLEAN ENERGY

BE ABLE TO GROW MAGNITUDE TO



CLEAR VISION

MORE ON THE GROUND IS SOLAR IN CT

ENSURE \$ BEING DEPLOYED IS WELL

SPECIFICALLY WHAT WE CAN DO IN CT

CORE

FOCUSED ON GREEN

IS IT EVOLVE?

EVOLVING TO MEET NEW + EVOLVING NEEDS

BUILD ON OUR STRENGTHS

- FINANCING - POLICY



- WHAT ADDS VALUE TO SOCIETY

TOOLS NEEDED

ROLE FOR MULTIPLE ENTITIES

MODEL

CAN BE APPLIED TO MANY AREAS

IS IT SHIFTS?

BEING USED WORLDWIDE

ENSURE CAPITAL INVESTMENTS APPEAR - EASY + ABLE TO INTEGRATE

EXPAND ON THE EDGES



FLOOD CONTROL

PARKS + REC

GO BEYOND WHERE WE

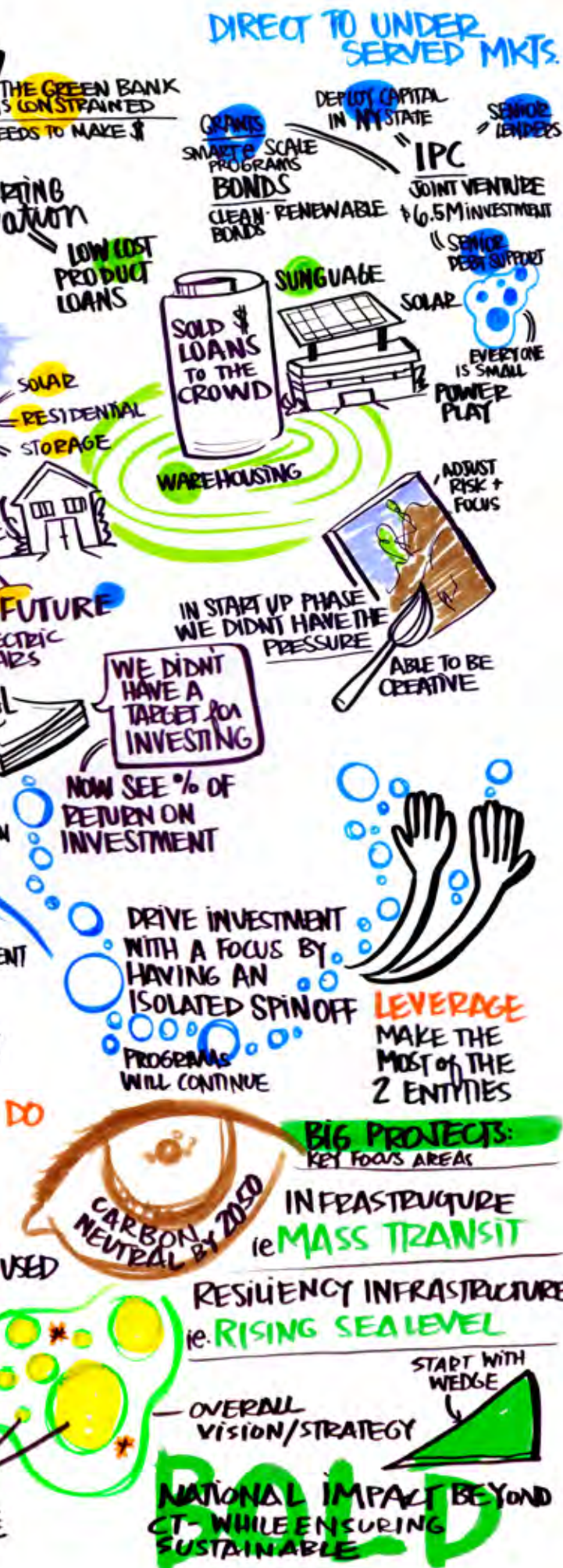
think we can

FEET PURCHASING

WASTE + RECYCLING

CLEAN WATER

NOT JUST CLEAN ENERGY



Bert Hunter, CT Green Bank



Brian Farnen, CT Green Bank



David Cantor, Liberty Bank

Existing Products and Programs

After participants had outlined both challenges and opportunities in transitioning to Green Bank 2.0, the focus turned to existing products and programs offered by Connecticut Green Bank in partnership with private investments, including:

- **Residential Solar Investment Program** - a statutorily required program that uses a declining incentive block structure to support 300 MW of behind-the-meter residential solar PV;
- **Solar for All** - an innovative solar PV lease and energy efficiency energy savings agreement financing product targeted at low-to-moderate income families using a special RSIP incentive;
- **Energize CT Smart-E Loan** - a credit enhancement program with community banks & credit unions offering low cost, long-term financing for measures supporting the Comprehensive Energy Strategy;
- **Multifamily Programs** - a program that includes a variety of pre-development and term loan financing products for affordable multifamily properties;
- **C-PACE** - a commercial, industrial and institutional financing program that uses a benefit assessment mechanism to provide low cost, long-term financing for measures supporting the Comprehensive Energy Strategy;
- **Green Bank Solar PPA** - a commercial, industrial and institutional financing product that uses an innovative power purchase agreement structure, in combination with C-PACE where appropriate, to reduce the burden of energy costs through the deployment of solar PV; and
- **Project Finance** - specific opportunities created to support in-state large-scale projects, including anaerobic digesters, small run-of-the-river hydro, grid tied fuel cells and combined heat and power projects requiring structured financial agreements.



Kerry O'Neill, Inclusive Prosperity Capital and Stuart Decew, CBEY

Following a discussion on the existing products and programs, participants tackled questions that will impact how the Green Bank considers future decisions regarding the existing product portfolio.

How should the Green Bank decide to expand programs vs. transitioning them to the private sector? What indicators can help make these decisions? How should sustainability factor into the process? Participants agreed that the Green Bank would need to consider investment criteria in order to determine when to enter, expand, or exit a product or program and introduced a number of other important themes:

Risk and Return. Participants recognized the importance of risk and return to ensure the Green Bank's financial sustainability, while at the same time ensuring that private capital is not crowded out as the Green Bank's leverage ratio may decline.

Speed and Penetration. The market potential across the Green Bank's suite of products and program is still substantial. Participants recognized that there are increasing customer acquisition challenges and costs, but that the Green Bank needs to accelerate activities and achieve deeper penetration in the markets it serves.

Replicability and Scalability. The climate crisis is an urgent one, and in order to make a substantial impact, participants acknowledged that products and programs needed to be replicable and scalable across the country.



Catherine Smith, DECD



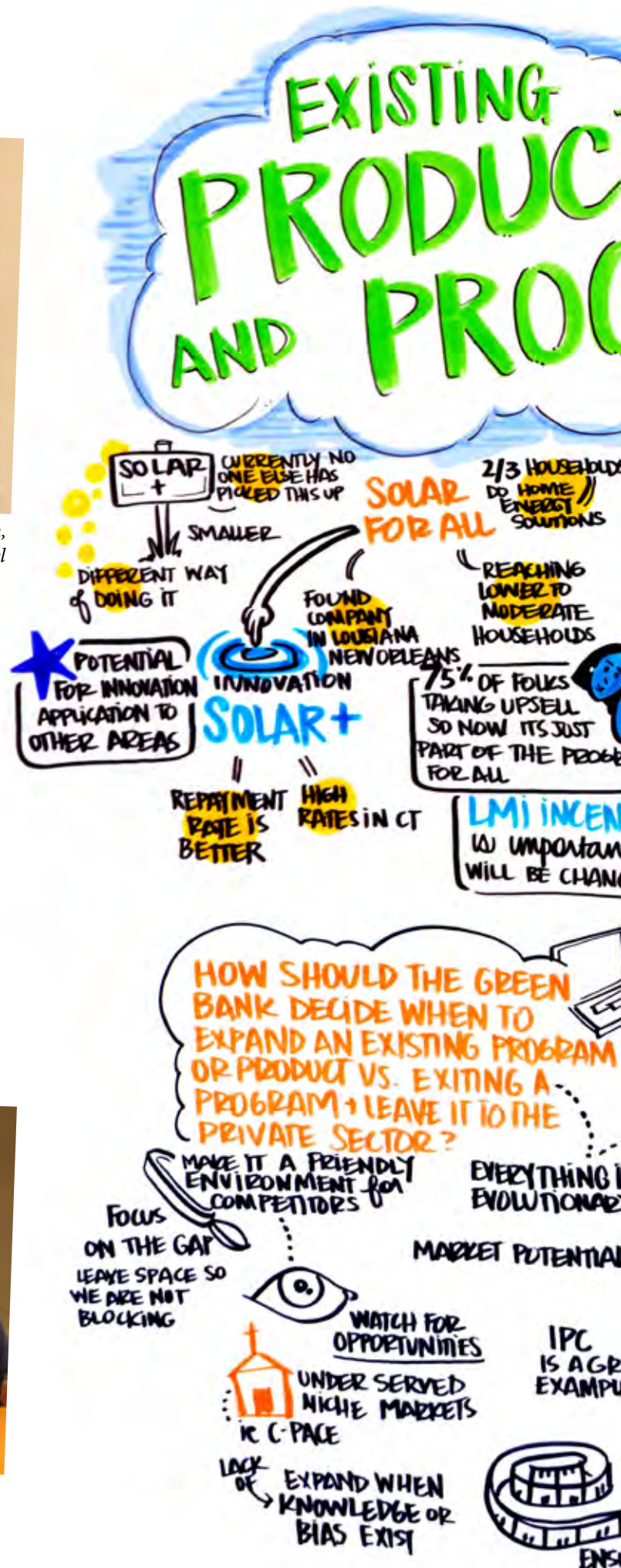
Kerry O'Neill, Inclusive Prosperity Capital and Brenda Watson, Operation Fuel



Alex Kovtunenکو, CT Green Bank



Pat McDonnell, Avangrid and Stuart Decew, CBEY



TS GRAMS

10 LENDERS

ENERGIZE CT
SMART ELOANS

LENDERS

REALLY TOOK THE ROLE OF FLOWING OUT

CRITICAL PARTNERSHIP NEEDED FOR MAKING THIS WORK

NEW ENGLAND HYDRO-POWER

POLICY ASPECT... ENERGY GOES INTO GRID + THEN CREDITS USED

GREAT LEARNING OPPORTUNITY

GREAT WAY TO TEACH LENDERS

FOUNDATION CAPITAL CHANGE

MULTIFAMILY

TECH + FUEL AGNOSTIC

CAPITAL FOR CHANGE

RIGHT FIT FOR CONSUMER

HEAT CONVERSIONS

UNSECURED LOANS

3RD PARTY PROGRAM

SOLAR PPA

USED FOR NON-PROFITS

OPENED MARKETS FOR SOLAR

GOOD COLLABORATION OF INCENTIVE + FINANCE PROGRAM

REPLICABLE TECH

USED AS A SCALE EXAMPLE

REV. SHARE RECAPTURE

FULLY SCALED
• WHEN TO STAY
• WHEN TO INVEST MORE



THINK OF PARENTING
• THINK ABOUT LIFE CYCLE...
• WHEN TO STOP
• WHEN TO CHANGE
• PRE CONCEPT TO GROWN

HOUSEHOLD INCENTIVES

NEAR 300 MEGAWATT TARGET

SOLAR IMPLEMENTATION PROGRAM

NOT SPENDING A LOT PER PROJECT

IT'S WORKING

SECURITY PLATFORM CAN BE LEVERAGED

C-PACE

LENDING + FINANCING SERVING MEGAWATTS

COMPREHENSIVE ENERGY



EDUCATION EARLY IN DESIGN PHASE

LOT OF IMPACT

HIGH RETURN

HIGH RISK

DON'T CROWD OUT PRIVATE CAPITAL

CREATE ENOUGH RATE OF RETURN FOR OUR RISK

HUGE ENERGY REDUCTION

WILL NEED TO THINK THRU THIS

WILL NEED TO THINK THRU THIS

EXPAND IS AN AREA TO EVOLVE

TECH IS AN AREA TO EVOLVE

PIVOT AND REMARKET

HOW SHOULD THE ORGANIZATION'S SUSTAINABILITY BE INTEGRATED INTO THE DECISION MAKING?



LEVERAGE

THROUGHOUT THE LIFE CYCLE...

IT'S A BALANCING ACT



INNOVATION

CHALLENGING TO EXIT WHEN SOMETHING IS WORKING

DON'T WANT TO BE IN SPACE THAT ISN'T WORKING OR IS NOT IN OUR VISION/MISSION/STRATEGY

WHAT ARE THE INDICATORS THAT COULD HELP MAKE DECISIONS?
EXPANSION VS. EXITING? SUSTAINABILITY?

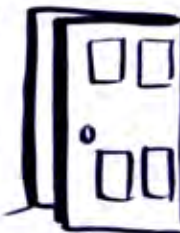
GREEN BANK FUNDS NOT MEETING NEED

EXPAND THE PROGRAM

HIGHER OR LOWER DEMAND

NEW MARKET OPEN: PRIVATE PLAYERS

VS CARBON 000



TOUGH TO CLOSE THE DOOR WHEN STILL A NEED

EAT OF GREATER SCALE

MEASURES MATTER

MEASURE

MEASURES ALIGNED TO GOALS

Potential New Products and Services

After discussing existing products and programs, participants turned to an exploration of potential new products and services. A couple of “big ideas” were presented to spark the discussion and push participant’s thinking outside of the box:

- **Grid Modernization and Decarbonization.** This technology-focused vision leverages behind-the-meter renewable energy resources such as solar PV in combination with battery storage to maximize benefits for customers and ratepayers. Including zero emission vehicles and zero emission heating and cooling technologies such as air source and ground source heat pumps could be integral in addressing climate change;
- **Citizen Engagement and Investment Platform.** By creating a public awareness and engagement program in partnership with Sustainable CT, the Green Bank could enlist local citizens to financially support community-based projects, building off the Green Bank’s crowd investing experience. This would providing impact investing opportunities that raise capital to support projects, while also defending the Green Bank through bond issuances and growing a supportive base of citizens;
- **Environmental Infrastructure.** Leveraging a public finance approach to scale-up the Green Bank’s investment model beyond “clean energy” through use of its public financing capabilities - such as bonding - that would support “environmental infrastructure” projects (water, waste, recycling, etc.).



Participants had no shortage of “big ideas” of their own. When asked what the best candidates for potential new Green Bank products and programs were and why, and whether these ideas could fit with the Green Bank’s needs for organizational sustainability, they outlined a number of concepts for further exploration regarding new products that would serve the Green Bank’s objectives:

- **Address Climate Change “Wedges”** - given the urgency of the climate change problem, solutions that address key, substantial market “wedges” with financial innovation including community solar, zero emission buses and refueling infrastructure and heat pumps;
- **Deploy Technologies that Empower and Motivate Customers** - energy usage meters and devices that can enable customers to better understand their needs based on season and time, supporting time of use rates and other strategies that help customers realize and verify savings opportunities;
- **Bonding** - use of the Green Bank’s bonding capability to raise capital, while ensuring that environmental infrastructure projects are viewed through the lens of mitigating climate change;
- **Insurance** - an insurance product that insures energy savings could help increase adoption among customers concerned about investment and technology risks;
- **Energy Savings Agreements** - pay as you save model can be more palatable to customers and could help with customer acquisition challenges;
- **Packages** - financing solutions and insurance or savings guarantees that increase customer confidence and reduce their risk;
- **Bundling** - technology and solution bundling (such as a Smart-E bundle);
- **R-PACE** - potential future solution requiring regulatory clarity at the federal level and comfort from the mortgage industry;
- **Investment Criteria** - an important next step for decision making in introducing new products.



John Humphries, Roundtable on Climate and Jobs

RESOURCES
HOW DO WE CLONE
BUST?

ENVIRONMENTAL
Infrastructure

CLIMATE
LENS

USE OUR
BONDING
CAPABILITY

WAYS TO
MOBILIZE
& INVESTMENT

POTENTIAL NEW PRODUCTS + SERVICES

NEED TO IDENTIFY
CRITERIA for
DECISION
MAKING
LOOK AT
= CRITICAL
SUCCESS
CRITERIA

CITIZEN
ENGAGEMENT +
FROM 8:1 TO
∞:1

MOBILITY

FOCUS ON BIG
PICTURE

TRANSPORTATION

GRID
MODERNIZATION

BETTER DATA
WORK WITH
UTILITIES



BEHIND THE
METER

SOLAR
EXCESS
TO BATTERY
STORAGE

CATALYST
TO NEW

INCREASED
EFFICIENCY

CARBON
NEUTRAL



INCENTIVE

SMART - PARTNER WITH
EV AUTO MAKERS

BEWARE
of OTHER
SAVE PROGRAMS

CMi SPACE - BATTERY BUSES
LEASE AS YOU GO

GEO THERMAL: ENCOURAGE GETTING OF FOSSIL

CHARGING INFRASTRUCTURE

FROM
START TO
END OF
COMMUTER
TRIP

EMISSIONS

FLEETS
(MGMT!)

TRANSIT: RESILIENCY



ELECTRIC
FUEL CELLS

REVENUE STREAM

ENERGY USE

CREDITS FOR
GAS

BUILDING

SOLAR STORAGE
RESIDENTIAL + COMMERCIAL

HEAT PUMP LEASE

GREEN REDEVELOPMENT

NEXT - C. PACE - STILL NEED A
NEW...

FOCUS ON 1 CITY: INTEGRATION
AT DESIGN +
PLANNING PHASE

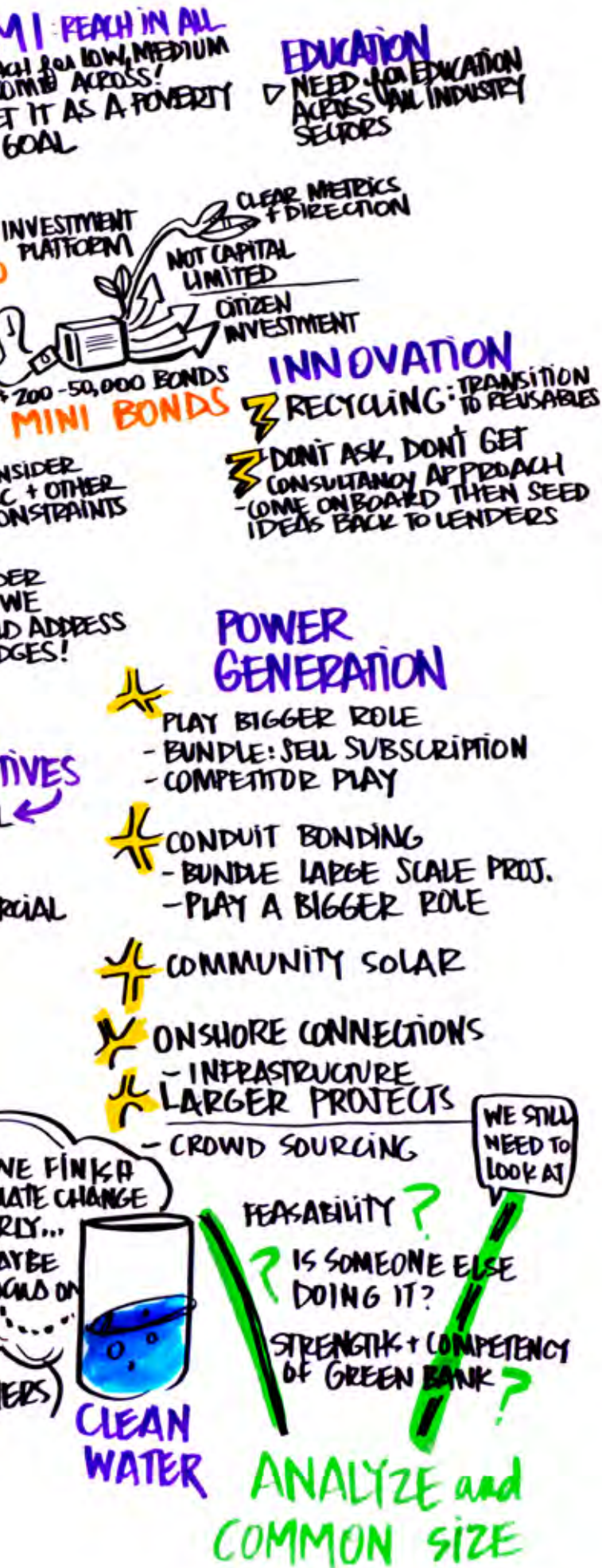
INSURANCE

INCENTIVE BUNDLING (STILL NEED TO
LOOK AT PARTNERSHIP)

IOT for BUILDING: TRAINING

FOCUS ON STATE BUILDINGS
LEAD BY EXAMPLE!

IF V
CHIN
EAS
MA
fo



David Cantor, Liberty Bank and Bert Hunter, CT Green Bank



Mark Allegrini, Sustainable Connecticut



John Humphries, Roundtable on Climate and Jobs

Inclusive CAPITALISM:

FAITH AND FINANCE IN
THE GREEN ECONOMY

MARY EVELYN
TUCKER

ENVIRONMENTAL
HUMANITARIANISM

THEY GO
HAND IN

MET AT A
REAL NETWORK
EVENT



NEW
APPROACH

NEED FRESH
APPROACHES

NEED VALUES
AND PHILOSOPHY



BECAUSE OF
PROGRAMS

ABLE TO
CONNECT
AND HEAL

CARE FOR
THE POOR

PROGRAMS
FOR THE ELDERLY
AND YOUNG

AS CHINA
+ INDIA
change

THE WORLD CHANGES

PRINCIPLES
STRATEGY
TACTICS



CREATE AN
INTER-GENERATION
HAND SHAKE

STEP
BACK and THINK...
WHAT KIND OF WORLD
DO WE WANT TO
CREATE



WE KNOW
TECHNOLOGY

Inclusive Capitalism: Faith and Finance in the Green Economy

At the conclusion of the first day, Mary Evelyn Tucker, Senior Lecturer and Senior Research Scholar at Yale University delivered a keynote address entitled “Inclusive Capitalism: Faith and Finance in the Green Economy.” Drawing on her spiritual knowledge of the world’s religions, she provided a powerful vision of “hope.” The themes and messages delivered through this keynote will inform the creation of a vision statement for the Green Bank’s 2020 Comprehensive Plan. Mary Evelyn has been involved in ongoing conversations through the Renewable Energy and International Law Network on the role of faith and finance, and was uniquely positioned to discuss the convergence of faith, finance, and sustainability - energizing the group for the next day of the conference. A number of powerful themes wove through Mary Evelyn’s narrative:

Build
Care
Community
Compass
Compassion
Connectedness
Creativity
Earth
Hope

Humanity
Inclusive
Inspire
Intergenerational
Moral
Movement
Nature
Peace
Planet

Prosperous
Responsibility
Spark
Spirit
Stories
Symbiotic
Together
Value
World



Bryan Garcia, CT Green Bank and Mary Evelyn Tucker, Yale University

EVERY SECTOR REPRESENTED AT THE SUMMITS FOCUSED ON THE WHOLE

— WOMEN
— ENVIRONMENT
ECOLOGY
POLICY
PEACE

SPIRITUAL POLICY

INTERCONNECTED IS KEY

PEOPLE INSPIRE



EVERYTHING MATTERS

DIS... DIS... DIS
GET OUT OF THIS MINDSET
IT ISN'T SUPPORTING OUR GOALS + DIRECTION



NOT JUST VALUE OF NATURE
MONETARIZING

I COULD IT HOPE



NOT JUST SCIENCE

ENCYCLICAL IS THE MOST IMPORTANT



IT IS WHY PARIS WAS SUCCESSFUL

PEOPLE WANT TO FIGURE OUT THE POSITIVE



TECH AND ENVIRONMENT NEED TO BE MORE SYMBIOTIC

THE WILD PLACES IN THE WORLD ARE IMPORTANT

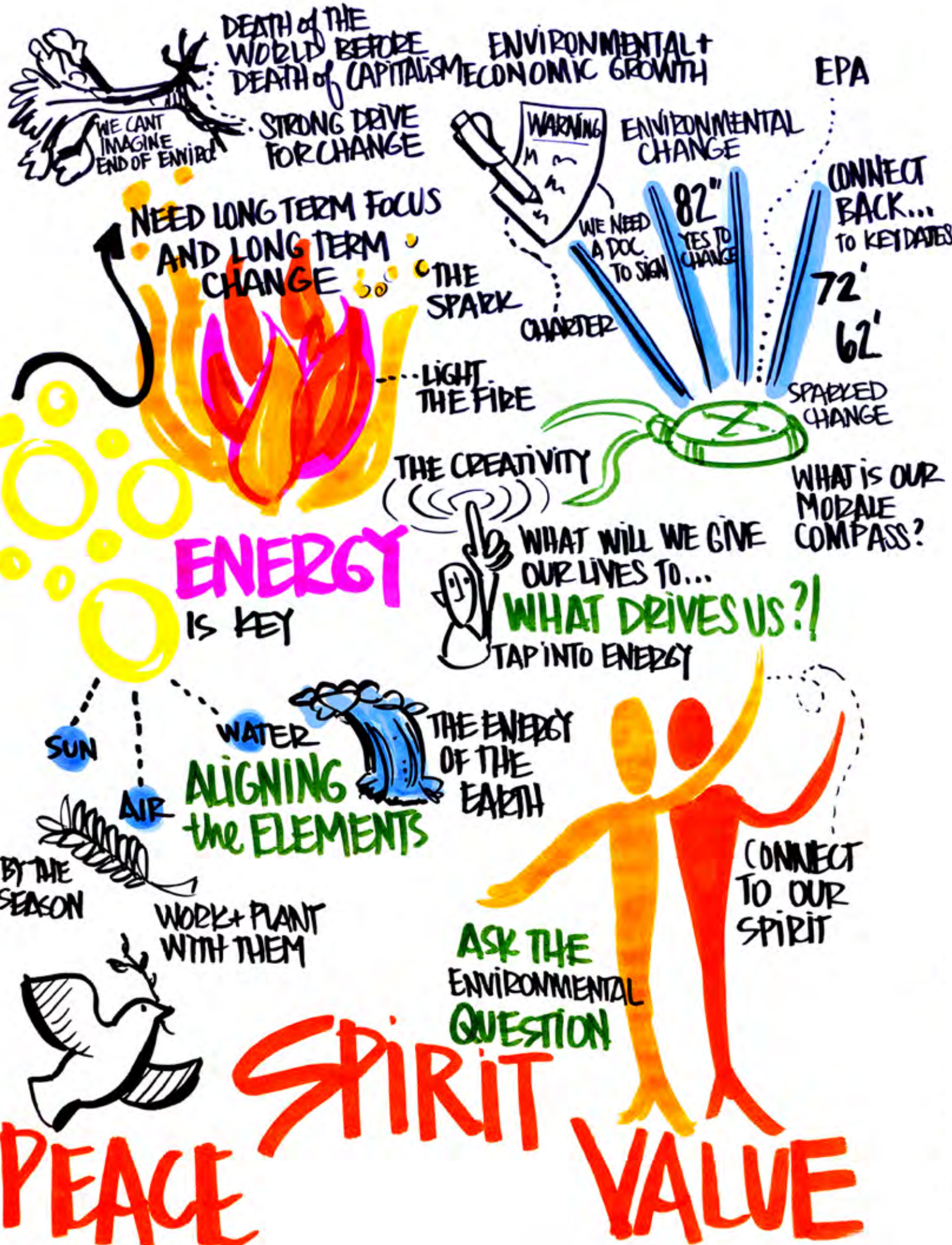


PLANTING TREES IS PARAMOUNT

WE NEED TO GRIEVE OUR DYING WORLD!

CREATE A FIELD OF CHANGE





COME TOGETHER IN HOPE

IT WON'T BE EASY

THIS IS THE WORK WE

THERE WILL BE THINGS THAT PULL US APART

WE NEED TO BUILD A COMMUNITY
MUST BE CALLED TO DO!

POLITICAL
RELIGIOUS
GENERATIONAL
RACIAL

HAVE

LEADERS

DOCTRINES

SOMETHING
PAIRING

PEOPLE, SCIENCE,
ECONOMICS + COMPASSION

THERE IS NO SILVER BULLET



...THIS IS
...WE NEED MORE

LITERATURE ON
THE ENVIRONMENT

ENVIRO
CHANGES

MAYBE THE MORE OBVIOUS IT IS-PEOPLE WILL ACT!

PEOPLE ARE BAD ABOUT PLANNING FOR THE FUTURE

SEEN AS MORE DIRE

WHAT WILL THIS MEAN TO OUR CHILDREN AND THE NEXT GENERATIONS

READ A MARY ELLIOTT POEM

SHE WAS THE POET OF THE ENVIRONMENT



NEED TO SHARE THE STORIES



LOOKING FOR
CONNECTEDNESS

THEY FOCUS ON
THE MOVEMENT

CORPORATE
SOCIAL RESPONSIBILITY



THEY WANT TO SEE
A CHANGE

PEOPLE ARE LOOKING
FOR GREATER HOPE

WHY DON'T
MORE PEOPLE
CHANGE - ie EVs?

SUSTAINABILITY
PROCESS +
TACTICS

WHY ARE
CHANGES
SO SLOW?

FOCUS

NEED TO
HAVE A FUNDAMENTAL
SHIFT TO INDUSTRIES

THE
SHIFT WILL
ONLY HAPPEN
WHEN

TELL THE PEOPLE
STORY

CORPORATE
AMERICA
CHANGES

IF WE DON'T COMMUNICATE
HOW WE ARE CHANGING
PEOPLES LIVES... THEY WON'T
GET IT!

OUR SYSTEMS
ARE HARMING
SO MANY PEOPLE!



Investment Criteria

Participants started the second day delving further into investment criteria, a reoccurring theme from the first day. Determining what investment criteria should be applied to discern when to enter, expand or exit a product or program was outlined as a critical next step.

The groups sought to rate (low, medium, high) four different investment criteria:

- **GHG reduction;**
- **Return on investment for the Green Bank; and**
- **Underserved populations (e.g., LMI), and**
- **Cost savings.**

The groups then applied these investment criteria to three addressable “wedges” for climate change:

- **Grid scale solar PV or wind;**
- **High efficiency heat pumps for buildings, including renewable heating and cooling; and**
- **Electric and fuel cell buses and infrastructure.**

The participants identified that it is difficult to prioritize and rate investment criteria with a simple rating system from high to low, as it did not allow for enough differentiation. In addition, the three examples given didn't allow for project or program level specificity (such as grid-scale solar PV vs. community solar).



Bert Hunter, CT Green Bank

Participants also identified other potential challenges for the criteria themselves:

Investment Criteria	Challenges of Criteria
GHG Reduction	Total vs. Per Capita vs. Per \$ Spent vs. Lifetime
Return on Investment for the Green Bank	Interest Rate and Tenor vs. Cash Flow vs. P&L
Underserved Populations	(none noted)
Cost Savings	<ul style="list-style-type: none"> • Customer or Ratepayer • Annual vs. lifetime • Positive cash flow

Throughout the discussions, participants came up with additional investment criteria that could be used to make decisions regarding products and programs in the future. Some of the criteria that participants believed should be considered included:

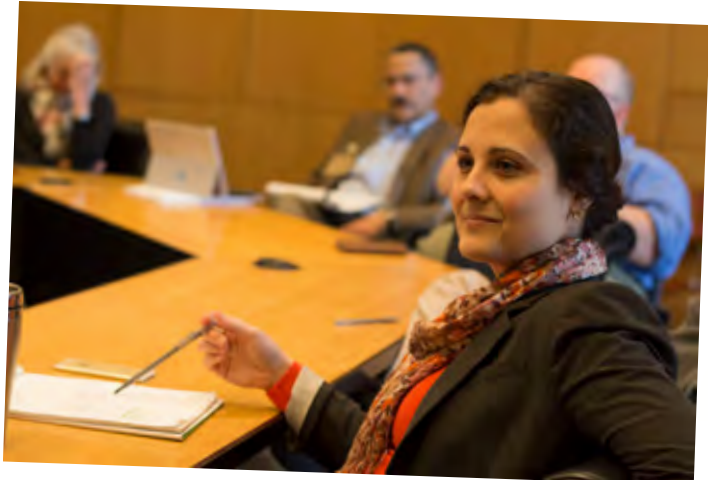
Additionality
 Administrative Costs
 Benefits
 CO2 Reduced / \$1
 Catalytic
 Cost / Benefit (e.g., \$ / GHG)
 Create Jobs
 Demand

Development Costs
 Ease
 Economic Impact
 Financial Risk
 Generate political capital
 Health impact
 Human capital
 Market need

Political risk
 Reductions in “wedge”
 Replicability
 Reputational Risk
 Reputational Benefit
 Scalability
 Speed
 Time



Bryan Garcia, CT Green Bank (foreground), Kim Stevenson, CT Green Bank (background)



Mary Sotos, DEEP

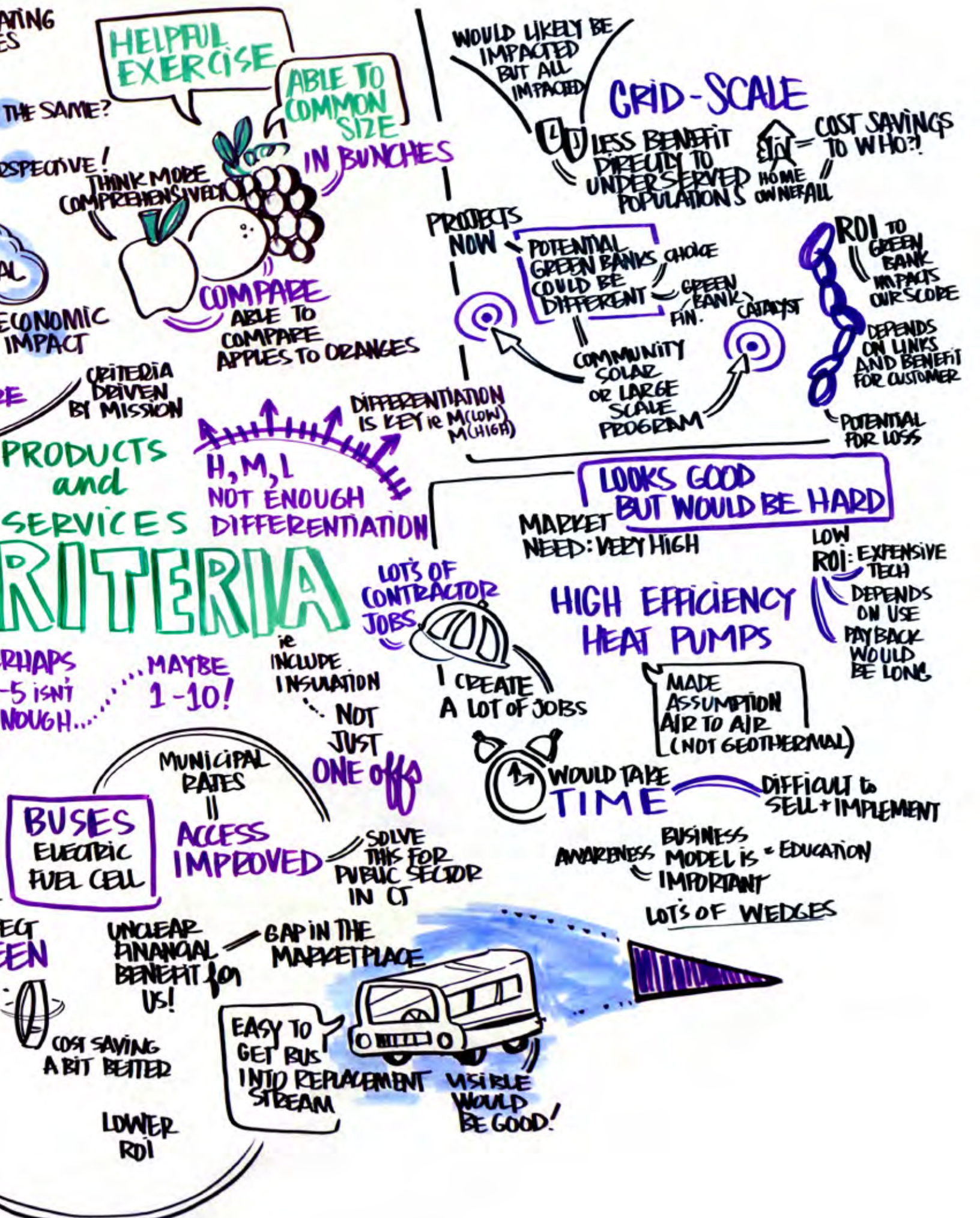


Bert Hunter, CT Green Bank



Bryan Garcia, CT Green Bank





Current and Potential Funding Sources

With several ideas for new products and programs, as well as suggestions for criteria to evaluate investment opportunities, participants turned their attention to funding future Green Bank activities. After reviewing existing funding sources and exploring how similar organizations are funded, participants were asked how reliable the current funding sources are and if there were ways to protect them. Participants agreed on many points:

Investment Criteria	Reliability	Risks	Actions to Protect
Clean Energy Fund	<ul style="list-style-type: none"> Low fluctuation Electrification of vehicles and heating/cooling could increase 	<ul style="list-style-type: none"> Unreliable Political Risk Declining in Nature 	<ul style="list-style-type: none"> Securitization and blocking raids through CHFA-like bond indenture Amend legislation based on the finds of lawsuit <ul style="list-style-type: none"> Strengthen grassroots support Mini-green bonds to build citizen investors
RGGI Allowance Proceeds	-	<ul style="list-style-type: none"> Unreliable Revenues are unpredictable Low revenues 	-
Grants	<ul style="list-style-type: none"> Can't be raided Strong relationships with foundations Federal government increase opportunities 	<ul style="list-style-type: none"> High effort required to compete for 	-
Investment Income (Interest)	<ul style="list-style-type: none"> Steady portfolio growth Predictable 	<ul style="list-style-type: none"> Cash could be swept Subject to investment risk 	<ul style="list-style-type: none"> Securitize Blocking raids through indenture
Investment Income (Fees)	-	<ul style="list-style-type: none"> Volumetric Cash could be swept 	-
Investment Income (FCM)	<ul style="list-style-type: none"> Market value in the future difficult to predict 	<ul style="list-style-type: none"> Cash could be swept Subject to public policy changes 	-
Investment Income (RECs)	<ul style="list-style-type: none"> Market value in the future difficult to predict 	<ul style="list-style-type: none"> Cash could be swept Subject to public policy changes 	-

Considering the challenges facing current funding, participants were asked if there were other funding sources that would facilitate moving the Green Bank from 1 to 2 orders of magnitude. Several ideas were captured:

Bonding. Explore bonding capabilities to raise funds and protect income from existing sources (including mini-bonds, where the Green Bank sells a portion of a bond that encumbers revenue to the Green Bank to the citizens of Connecticut). This requires the Green Bank to identify uses of funds and be ready to deploy capital quickly.

Private Activity Bond Conduit. The Green Bank has statutory authority to issue bonds on behalf of others (while earning fees). This will require identifying borrowers with buyers that need this conduit.

USDA and Other Federal Funds. Continuing to pursue low cost capital for loans from USDA, DOT and DOD, and seeking legislative fixes that will make this process easier.

Impact Investment / Corporate Partners. Pursuing more impact investments and partner with corporations and community foundations and endowments seeking to make sustainability investments.

Electric Efficiency Partners Program. Bring additional programmatic solutions to PURA or use EEP funds as a sweetener alongside existing Green Bank or third-party investments.

Transportation Climate Initiative. Seek policy that directs a portion of these RGGI like funds to the Green Bank to fund transportation investments.

Transaction Fees. Build stream of income from investment banking-like transactions (e.g., Fuel Cell Energy deal).

Community Reinvestment Act. Using Inclusive Prosperity Capital, attract capital from CRA lenders.

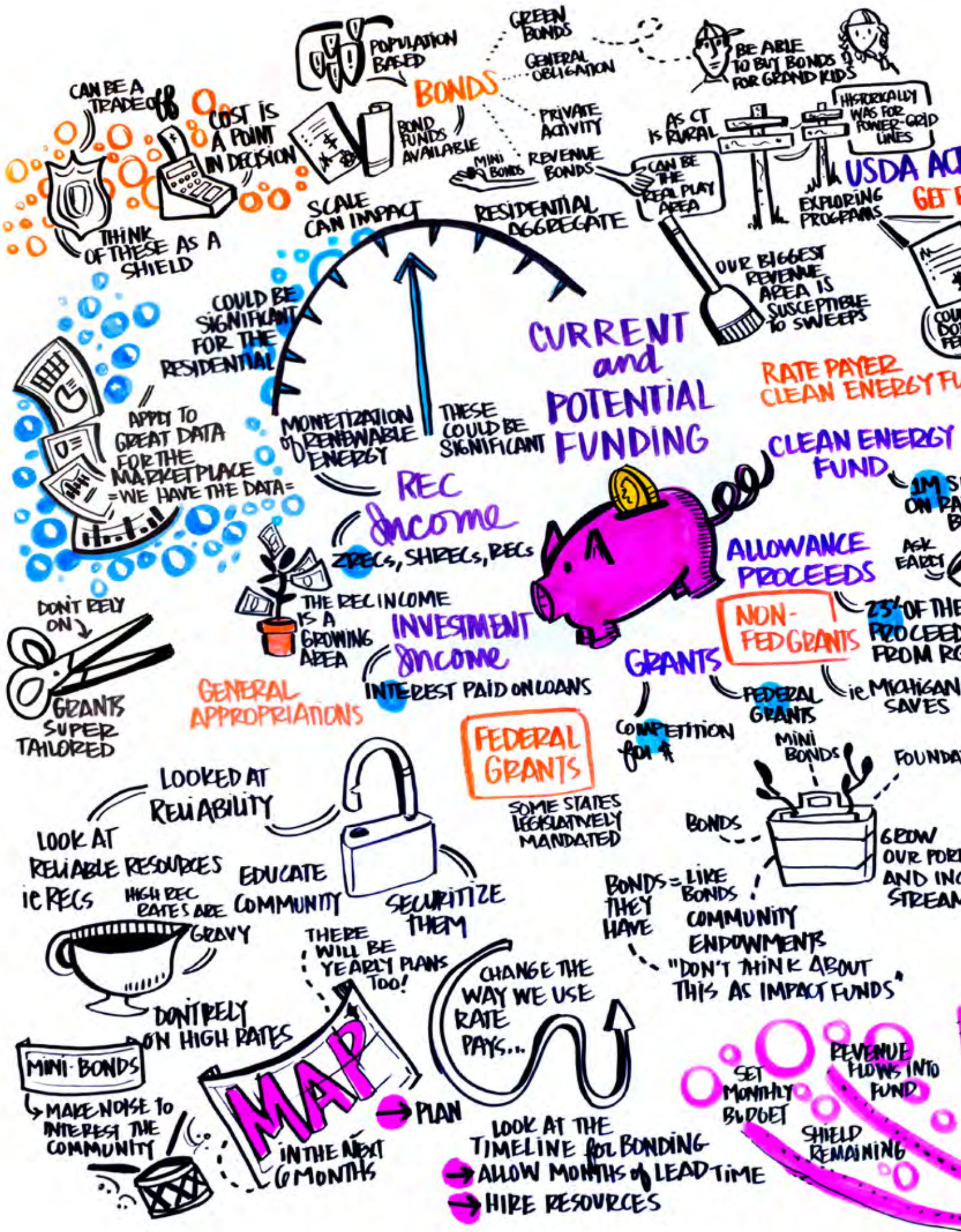
Alternative Compliance Payments. Pursue policy that redirects the ACP back to the Green Bank, reducing public policy cost exposure on ratepayers from the RPS

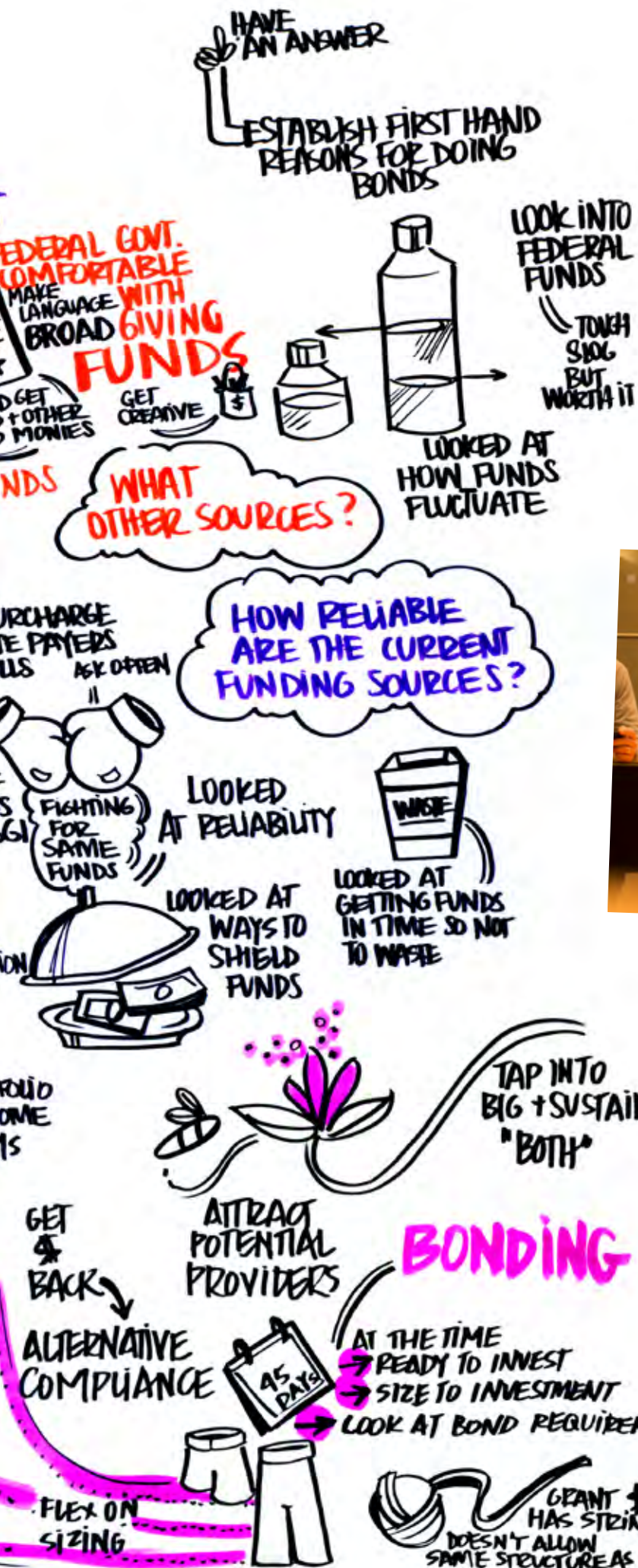
Opportunity Zone Fund. Launch a fund that attracts funds earmarked for opportunity zones.

Lockbox. Pursue a strategy that restricts investment of ratepayer funds towards their intended purpose (similar to Special Transportation Fund).



Mackey Dykes, CT Green Bank (foreground), Bryan Garcia, CT Green Bank (background)





Bryan Garcia, CT Green Bank



Selya Price, CT Green Bank



Stuart Decew, CBEY

Headlines

As a wrap-up exercise, participants broke into groups for a session referred to as “Headlines,” where participants attempt to envision a future scenario by identifying a headline for a 2030 article in an in-state and out-of-state publication. Some examples included:

In-State Headlines:

“1 Million Connecticut Households Become ‘Carbon Neutral’ as a Result of Green Bank Programs” - Jan Ellen Spiegel, CT Mirror, 2030

“Connecticut Green Bank Makes Connecticut a Better Place to Live” - Hartford Courant, 2030



Jessica Bailey, Greenworks Lending (foreground), Matt Macunas, CT Green Bank (background)

Out-of-State Headlines:

“As a result of the National Green Bank, the U.S. is on track to exceed the Paris Agreement” - The Economist, 2030

“Last Diesel Bus Scrapped, Will Live in the Carriage Barn at Pocantico” - BuzzFeed News, 2030

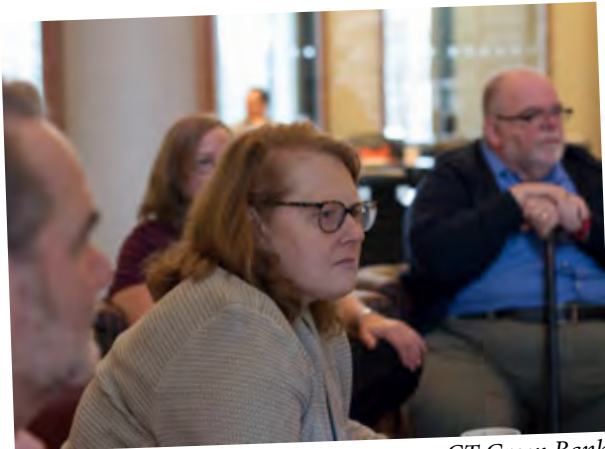
“New London Offshore Wind Port Manufactures and Assembles 10 GW of Power” - Wall Street Journal, 2030

“Connecticut Green Bank Teams up with Cows and Machinists to Power State’s Fleet of Electric Buses” - New York Times, 2030

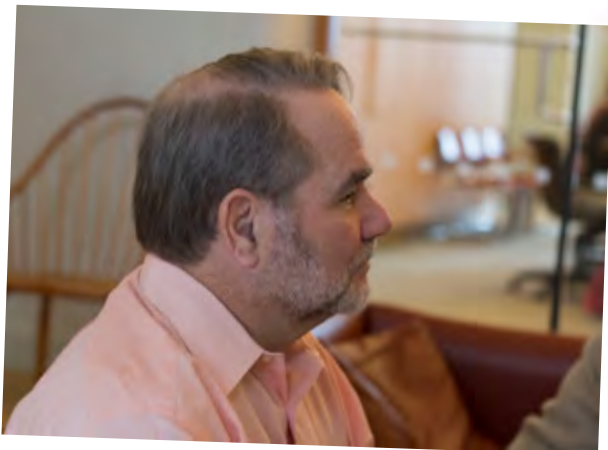




Matt Macunas, CT Green Bank



Kim Stevenson, CT Green Bank



Bob Lamb, Lamont Financial





IONS for SUCCESS

VISION
SUCCESS
2030

ION
and
STATE

FLOCK TO
CLEAN
CITIES

WIN FOR
MANUFACTURE

CLEAN
CITIES
WORLDWIDE

DETERMINE
HEADLINE

IDENTIFY
THREE THINGS
THAT OCCURED
AND RELATED
CHALLENGES
WE WERE
ABLE TO OVERCOME!

SMART WORKFORCE

OFFSHORE
WIN

MACHINE WORKERS
REACH NEW HIEGHTS



OUT OF
STATE

EDUCATED
THRU
MINI GREEN
BANK RETURNS



PARIS
ACCORD

LEADS
GREEN
BANK

DRIVE NATIONAL SCALE

UN
MET UN GOAL

\$300
PER
PERSON
PER
YEAR

60
NATIONAL



H&TV

GREEN
VERSION
OF THIS OLD
HOME

CONNECTICUT
GREEN



12YR
TIMELINE
TO RETIREMENT

INNOVATED
BY CT
GREEN BANK

LAST
DIESEL
BUS

SCRAP-ED

ON TO NEXT
BIG CHALLENGE

0% ZERO
EMISSIONS

ZERO
WASTE
BANK

INVESTMENT
TARGETS

Key Findings and Recommendations

The two-day conference was an effective exercise, identifying several key pieces of information integral to moving from Green Bank 1.0 to 2.0:

Commitment to Address Climate Change.

Given the urgency of the issue (demonstrated by the onset of natural disasters, polar vortex, etc.) the Green Bank must be committed and focused on strategies to address climate change mitigation (such as addressing climate change wedges) and adaptation (resiliency)

Scaling Up Investment and Impact in Connecticut and Beyond.

In order to achieve Connecticut's climate change and economic goals, more investment from private capital sources which is sparked and leveraged by innovative public sector financing that is affordable and of long duration, will be needed in order for the state to realize the environmental, economic and job benefits and opportunities from the climate economy. While focusing on benefits to Connecticut, the Green Bank can also take actions that influence and increase investment in and help address climate change nationally and globally.

Pursuit of Financial Sustainability.

With the status of the long-term state budget situation creating ongoing challenges to ratepayer funds (i.e., Clean Energy Fund, RGGL, etc.) there is a pressing need for the Green Bank to:

- Use its full suite of public policy tools (such as bonding capabilities) to access other sources of funding that will better ensure its financial sustainability
- Adopt investment criteria that allow for better tracking and measurement of the Green Bank portfolio with respect to multiple objectives including financial sustainability.
- Address customer acquisition challenges to increase transaction volumes to levels needed for sustainability.

As a follow-up to the conference, the following recommendations will be pursued in order to facilitate progress towards Green Bank 2.0:

Bonding.

The Green Bank will develop a bond indenture, including the incorporation of non-impairment, to begin to develop its bond rating while accessing capital through public finance markets that can be used to augment its investment strategy. This recommendation will require 3 to 6 months to execute and include:

- **Building a Team.** Identifying legal counsel, financial advisor, underwriter and trustee for bond issuances;
- **Developing a Bond Indenture.** Including provisions to protect the Green Bank's assets and sources of revenues (such as system benefit funds); and
- **Issuing Bonds.** Leading the "green bond movement" across the U.S. through use of proceeds, best-in-class EM&V, and innovation of mini-green bonds to engage all citizens in investment to confront climate change.

Investment Strategy.

Integrating the bond funding structure into the investment planning and operations of the organization, while developing the following:

- **Portfolio Investment Target.** Establishing a near and midterm portfolio investment target (i.e., amount, interest, risk and maturity);
- **Leverage Ratio Target.** Determining a reasonable leverage ratio target that supports the pursuit of financial sustainability, while at the same time leveraging public funds with multiples of private capital investment; and
- **Investment Criteria.** Defining and prioritizing investment criteria to serve as a screen for supporting the investment strategy.

Comprehensive Plan.

Developing the Green Bank 2.0 Comprehensive Plan that reflects the key findings of the conference, while providing guidance and direction to the operation of the organization, including:

- **Vision Statement.** Develop a short and powerful vision statement, from the powerful words used in the keynote address, that inspires our current and future supporters;
- **"Wedges" Structure.** Build the plan around the three key climate change GHG emission mitigation wedges (zero carbon grid, zero emission vehicles, and zero emission heating) and climate change adaptation (microgrid and grid modernization); and
- **Community Engagement.** Rebuild our ability to engage and inspire the citizens of Connecticut in taking action to confront climate change through innovative campaigns (e.g. Clean Energy Communities, Solarize, etc.) products (e.g., mini green bonds, community solar, etc.), and programs (e.g. Solar for All). Evolve our messaging and communications in a way that our customers and stakeholders can more easily understand and connect with what we do.







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