Green Banks & Catalytic Blended Finance to Accelerate Clean Energy Investment

April 5th, 2022
Agenda

● What is CGC & How Did I Get Here
● Why Do We Need To Accelerate Climate Investment
● What are Green Banks & What Do They Do
● What Next if No Federal Action
About Coalition for Green Capital

- Commenced operations 2010, 501(c)(3) status granted 2012
- Manages American Green Bank Consortium, network of 21 green banks
- Working with partners in 20+ states to develop new green banks

- **Hybrid org** - Advocacy & thought leadership + TA consulting & operating support - we come up with the ideas, convince people to adopt them, and then implement leveraging expertise

- **Primarily funded by foundations** - ClimateWorks, Energy Foundation, Hewlett Foundation, MacArthur Foundation, McKnight Foundation, NY Community Trust

- **We are still a start-up** Grew from $0 rev & 1 person in 2014 to $5M rev and 20 people in 2021 - but CGC is still a start-up.

- **Political at heart** - Founder & CEO was FCC chairman & leader on Obama transition; former Board member & policy director now work on White House on climate policy
About the Coalition for Green Capital

Our Mission

Drive rapid clean energy market penetration and an equitable climate transition through catalytic finance and Green Bank institutions.

Our Work

● Expand & Strengthen the Network of Green Banks & Mission-Driven Institutions
● Meaningfully Embed Climate & Energy Justice and DEI Into Network Activities
● Pursue Capital on Behalf of Network Members to Scale Total Investment
● Support Industry Growth through Awareness and Thought Leadership
I have never worked at fin inst, nor an energy co, nor in govt, but lead org at intersection of all three

- Econ & Policy undergrad, 3 years consulting, MBA with focus on clean energy finance, then CGC - no background in non-profits, fundraising or working in finance
- As ED of small nonprofit org, main roles are:
  - Get the money
  - Biz dev & advocacy
  - Partnerships & external engagement
  - Team management
  - Admin & operations
- Key drivers of career path
  - Passion and commitment to mission
  - Constant and proactive learning
  - Try, fail, learn, and try again
  - All about people
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Climate disaster upon us, must rush to avoid the worst
~20 Gt CO₂ net emissions per year; fossil fuels largest by far
Coal, oil & nat gas are 93% of global FF emissions

Share of global fossil CO2 emissions in 2020: coal (40%), oil (32%), gas (21%), cement (5%), flaring and others (2%, not shown)

Projection by fuel type is based on monthly data (GCP analysis)
### By sector

<table>
<thead>
<tr>
<th>Sector</th>
<th>Actual yearly flows compared to average annual needs (billion USD 2015 yr⁻¹)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy efficiency</td>
<td>x2, x7, x8, x5</td>
</tr>
<tr>
<td>Transport</td>
<td>x2, x7, x8, x5</td>
</tr>
<tr>
<td>Electricity</td>
<td>x2, x7, x8, x5</td>
</tr>
<tr>
<td>Agriculture, forestry and other land use</td>
<td>x10, x29</td>
</tr>
</tbody>
</table>

### By type of economy

<table>
<thead>
<tr>
<th>Economy</th>
<th>Actual yearly flows compared to average annual needs (billion USD 2015 yr⁻¹)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developing countries</td>
<td>x4, x8</td>
</tr>
<tr>
<td>Developed countries</td>
<td>x2, x5</td>
</tr>
</tbody>
</table>

### By region

<table>
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<tr>
<th>Region</th>
<th>Actual yearly flows compared to average annual needs (billion USD 2015 yr⁻¹)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eastern Asia</td>
<td>x2, x4</td>
</tr>
<tr>
<td>North America</td>
<td>x2, x4</td>
</tr>
<tr>
<td>Europe</td>
<td>x2, x3</td>
</tr>
<tr>
<td>Southern Asia</td>
<td>x7, x16</td>
</tr>
<tr>
<td>Latin America and Caribbean</td>
<td>x5, x10</td>
</tr>
<tr>
<td>Asia-Pacific Developed</td>
<td>x7, x14</td>
</tr>
<tr>
<td>Eastern Europe and West-Central Asia</td>
<td>x12, x25</td>
</tr>
<tr>
<td>Africa</td>
<td>x7, x16</td>
</tr>
<tr>
<td>South-east Asia and Developing Pacific</td>
<td>x5, x12</td>
</tr>
<tr>
<td>Middle East</td>
<td>x12, x23</td>
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</tbody>
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Multiplication factors indicate the x-fold increase between yearly mitigation flows to average yearly mitigation investment needs. Globally, current mitigation financial flows are a factor of three to six below the average levels up to 2030.
In the U.S., coal on decline, n.g. rising, and cars are king
If net zero is the goal, what are the necessary interventions?
Electrify transport & buildings w/clean power

Intermediate demands are flexible loads:

- Electrolysis making H₂ from water (hourly flexibility).
- Electric boilers in parallel with gas-fired units in industry (hourly flexibility).
- Direct air capture (daily flexibility).
The Financing Problem

Explained in 4 U.S. Maps
1. Power prices affect U.S. consumers differently
2. States differ in carbon power use
3. Harming children’s health at varying levels
4. Requiring more new job creation where transition has more impact
Speedy, cheap and targeted - no way to succeed without all 3, and private capital on its own won’t do it

- Private sector on its own not investing fast enough, but not enough public capital - must be a mix

- Private capital won’t always deliver power that is affordable to all customers - no sustained political support if prices go up

- Emissions & impacts vary widely across U.S. - strategic and targeted investment is only way to get to targets on time
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- **What are Green Banks & What Do They Do**
- What Next if No Federal Action
Green Banks provide catalytic finance for rapid decarbonization, focus on underserved

Green Banks are mission-driven institutions, operating with intentionality, that use innovative financing to accelerate the equitable transition to clean energy and fight climate change.

- Public & Philanthropic Funds to Leverage Private Investment And Drive Capital at Scale
- Goal is Rapid Deployment - Evolution of Model from Cheaper Capital to Focused Capital
- Target Underserved Markets & Underserved Communities to Ensure Just Transition
Green Banks combine $1 public money with $3 private money

- Mix low cost public financing with private sector to deliver cheaper overall financing & produce cheaper clean power
- Mitigate risk & structure transactions to induce private investment
- Mobilize private investment into overlooked markets (i.e. poor & BIPOC)
There is **sufficient global capital** to close global investment gaps, but there are barriers to redirect capital to climate.

Options for scaling up mitigation include increased levels of **public finance and publicly mobilised private finance flows** and increased use of **public guarantees to reduce risks and leverage private flows at lower cost**.

Clear signalling by governments including, a stronger alignment of public sector finance and policy, and higher levels of public sector climate finance, reduces uncertainty for the private sector. **Financial flows can be aligned with funding needs through a continued role for multilateral and national climate funds and development banks; lowering financing costs for underserved groups through entities such as green banks existing in some countries, and funds and risk-sharing mechanisms.**
Levelized Cost of Energy Comparison—Sensitivity to Cost of Capital

A key consideration in determining the LCOE values for utility-scale generation technologies is the cost, and availability, of capital; this dynamic is particularly significant for renewable energy generation technologies.

Midpoint of Unsubsidized LCOE

- Nuclear
- Gas Peaker
- Solar Thermal Tower
- Coal
- Geothermal
- Gas—Combined Cycle
- Wind
- Solar PV—Crystalline

<table>
<thead>
<tr>
<th>After-Tax IRR/WACC</th>
<th>4.2%</th>
<th>5.4%</th>
<th>6.5%</th>
<th>7.7%</th>
<th>8.8%</th>
<th>10.0%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost of Equity</td>
<td>6.0%</td>
<td>8.0%</td>
<td>10.0%</td>
<td>12.0%</td>
<td>14.0%</td>
<td>16.0%</td>
</tr>
<tr>
<td>Cost of Debt</td>
<td>5.0%</td>
<td>5.0%</td>
<td>7.0%</td>
<td>8.0%</td>
<td>9.0%</td>
<td>10.0%</td>
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</tbody>
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Delivering savings depends on financing terms

Zero-down financed solar system estimate

Monthly savings year one $48

<table>
<thead>
<tr>
<th></th>
<th>Before solar</th>
<th>After solar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Utility bill</td>
<td>$199</td>
<td>$132</td>
</tr>
<tr>
<td>Solar loan</td>
<td>$19</td>
<td></td>
</tr>
<tr>
<td>Utility bill</td>
<td></td>
<td>$19</td>
</tr>
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From that idea, CGC has built a nationwide, state-by-state movement and sparked $9B of clean energy investment.
Green Bank investment & interest spreading rapidly
Example 1: LMI Community Solar

Lots of barriers to overcome to deliver community solar to LMI households

**Barriers to Project with LMI Adoption:**
- **Lack of data** on LMI household repayments creates perception of high repayment risk, limiting cost/availability of capital
- **Upfront costs** to secure site, connect to grid and market to households requires expensive development capital

**Goal:** Efficient intervention by Accelerator

**Success Metrics:**
- Consumers benefit – lower electricity cost for LMI households
- Renewable power increases market share
- Jobs created to build project, enroll customers
- Reasonable returns to all actors
Example 1:
LMI Community Solar

Accelerator Solution: Revenue Guarantee for LMI Subscribers

Developer Equity Investor
- Equity Capital $1.5M
- Cash Returns

Tax Equity Investor
- Equity Capital $1.2M (22% ITC)
- Tax Benefits

Commercial Lender
- Project Debt $2.7M
- Loan Repayments

Community Solar Project
2.7 MW DC @ $2/watt
$5.4M total cost

Community Solar Project
- Subscription Agreement

350 LMI Households
- Monthly Bill (23% discount to non-fixed utility charges)
- Electricity

LMI Revenue Guaranty Fund
- Guaranty to Make Up Any LMI Revenue Shortfall
- Fee

Accelerator / State & Local Green Bank
- Capital for Guaranty $818,000
- Repayment of Remaining Funds Based on actual default rate

Utility
- Monthly Community Solar Credit
- Electricity
- Utility Bill (fixed charges)
Example 2: Small Business Building Upgrades

But SMB’s Cannot Get Financing for Clean Energy Projects That Will Lower Their Energy Costs

Barriers to SMB Projects:
- Commercial banks may not finance because evaluating risk of a non-rated SMB is complicated and expensive, thus reducing profit potential
- Or commercial bank will make a loan, but on very short term that will make repayments high and exceed savings
- C-PACE providers won’t finance small projects because these projects can’t individually produce sufficient returns

Goal: Efficient intervention by Accelerator
Success Metrics:
- SMB benefit - lower energy costs
- Increased flow of private capital
- Jobs created to source and build projects
- Reasonable returns to all actors
Example 2: Small Business Building Upgrades

Accelerator Solution:
Long-Duration Capital to Aggregate Small C-PACE Projects for Resale

1. Seed Capital for SMB Fund
2. Payment for Installations
3. Many Installations
4. Energy Bill
5. C-PACE Repayments
6. Portfolio Sale ($1M+ tranches)
7. Proceeds from Portfolio Sale [Repeat funding cycle 2-5]
8. Repayment

Intervention
- The Accelerator provides capital to the State Green Bank as an intermediary, which then finances many small projects.
- State Green Bank accepts lower returns as compared to a commercial lender, thus making these projects pencil.
- State Green Bank aggregates these small projects into a portfolio, which is then financially attractive to a commercial lender who buys the portfolio.
- Portfolio sales recapitalize loan pools so State Green Banks can finance the next portfolio of projects.
Not just a program, but an institution.

NY Green Bank financial statements - it looks like a finance business, not a government agency or program.

Coalition for Green Capital
What are GB’s most like? Development banks! Obvious if you have international perspective, but many in U.S. don’t
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In 2009, we were too early for this idea

Public & Private Capital Shall Not Mix

- Govt intervention in energy was in R&D & commercialization, not deployment (U.S.-specific phenomenon)
- Private capital markets are efficient - if there is a financing gap, there is a good reason for it (i.e. projects are no good)

Eat Your Vegetables!

- Enviro movement wanted to punish FF, not delight with CE
- Carbon tax + efficiency, NOT cheap & abundant replaces the old
But by 2020, things were different - ideas changed + unique circumstances, though still resistance to new institutions

Public & Private Capital Shall Not Mix  It is too late on climate change - more is more!

Eat Your Vegetables!  Learn ‘09 lesson, cheaper is better, nobody wants higher costs

COVID!! 22M Jobs Lost  Gov’t investment in clean energy can kill two birds with one stone

George Floyd Sparks EJ  Recognition that Gov’t must make targeted investment to address energy inequities

Independent non-profit national green bank outside of government
Our 3-year campaign

Bill sponsor & intro in both chambers
Pass Bill in House to win war of ideas
Support from D Pres Candidates
Endorsement from President
Reintroduce Bill with more sponsors
Included in Budget Resolution
Pass House in Reconciliation Bill
Pass Senate in reconciliation bill

Build growing & vocal coalition of allies throughout

Our 3-year campaign:
2019-2020 116th Session of Congress
2021-2022 117th Session of Congress

Only possible because of D sweep of Govt in Nov ‘20 elections
Involves ~6 specific milestones + understanding budget reconciliation
Manchin = Out of our hands

President’s Sig!

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National Green Bank would supercharge the movement

- $20B in EPA's Greenhouse Gas Reduction Fund in BBB to capitalize a nonprofit national green bank
- Must invest at least $8B in disadvantaged communities - largest energy justice policy in U.S. history
- Finance projects directly & indirectly via network of green banks, CDFIs, MDIs and community lenders
- Support & fund creation of green banks in every state in the country

- Endorsed by President Biden
- Passed House 4x, including as part of Reconciliation 12/21
- Bipartisan co-sponsors in House
- No opposition among Senate Ds
- Endorsed by 200+ NGOs, capital providers, businesses, industry associations, EJ advocates, utilities and more
Governors in 10 states call on Congress to create and fund Accelerator

We need to leverage the local knowledge of [institutions] and invest in solutions like green banks that can take [capital] and blend it with international public and private finance.
- Larry Fink, NY Times Op-Ed, October 13, 2021

Leading environmental justice and national environmental groups call for $27B in Accelerator funding in Build Back Better

Included in the Equitable & Justice National Climate Platform
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What to do if no focused federal action & investment?

Breakthrough Energy Catalyst and Major Corporations Announce Partnership to Accelerate the Clean Energy Transition.
Thank You