



## Welcome, Funding Working Group!

Hosted by Strategen, Hydrogen Study Task Force Consultant to CT Green Bank:

- Lily Backer, Project Manager
- Erin Childs, Director

## Agenda

- + Welcome and Introductions (10 min)
- + Review of Working Group Charter (10 min)
- + Overview of Federal Funding Opportunities and Participation Requirements (15 mins)
- + Overview of the Targeted Brownfield Development Program (10 mins)
- + Discussion of Research Plan and Next Steps (15 mins)



## Strategen’s Role

- + The Strategen team will handle meeting logistics including scheduling and recording meeting minutes.
- + The Strategen team will coordinate with Working Group Co-Chairs to develop meeting agendas which will be provided to participants a week before Working Group meetings.
- + The Strategen team will provide technical assistance (including research), where appropriate, for the Working Group.
- + It is expected that this working group will meet on a monthly cadence. Meeting recordings and meeting minutes will be publicly available.

<b>Dates:</b>	<b>9/27</b> 4:00 – 5:00pm	<b>10/26</b> 10:30am – 12:00pm	<b>11/18</b> 10:30am – 12:00pm	<b>12/15</b> 10:30am – 12:00pm
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# Introductions

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Please share your name, title, and organization



# Review of Working Group Objectives

5 min



## Objective

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*With the passage of Special Act 22-8, the Hydrogen Task Force was created to study hydrogen-fueled energy in the state's economy and energy infrastructure. By January 15, 2023, the Hydrogen Task Force shall submit a report on its findings and recommendations to the joint standing committee the General Assembly.*

*The Task Force is supported by activity from 5 Working Groups: Policy & Workforce Development; Funding; Hydrogen Sources; Hydrogen Infrastructure; Hydrogen Uses.*

*The objective of the Funding Working Group is to review existing hydrogen funding mechanisms and incentives, such as the Infrastructure Investment and Jobs Act (IIJA), and determine how Connecticut can be best positioned to participate in these programs and potentially develop new opportunities. The Funding Working Group will also recommend additional funding sources for developing a hydrogen ecosystem with particular focus on the Targeted Brownfield Development Loan program.*

## Statutory Responsibilities

*“An examination of how to position the state to take advantage of competitive incentives and programs created by the federal Infrastructure Investment and Jobs Act;*

*Recommendations for funding and tax preferences for building hydrogen-fueled energy facilities at brownfield sites through the Targeted Brownfield Development Loan program;*

*Recommendations regarding funding sources for developing hydrogen-fueled energy programs and infrastructure.”*

# Overview of federal funding opportunities and participation requirements

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15 mins





# Recent passage of federal legislation has created a tipping point for action

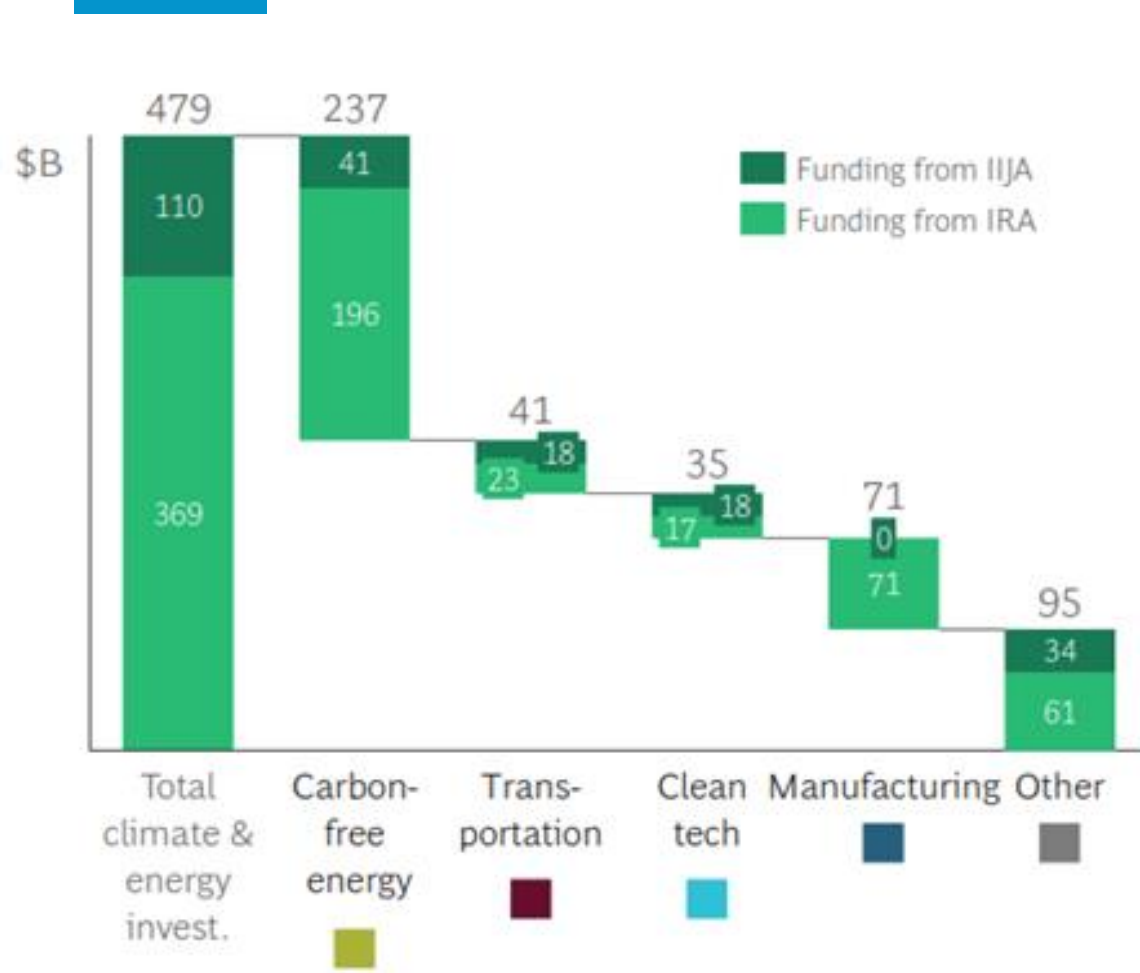
## Bipartisan Infrastructure, Investment and Jobs Act of 2021

- \$8B for regional clean H2 hubs
- \$1B for electrolysis research, dev, and demonstration
- \$0.5B for clean hydrogen technology manufacturing and recycling RD&D
  - Projects w/ tribal partnership receive priority
- \$13B investment specifically in tribal communities, including:
  - \$200M for climate resilience
  - \$6B to support water infrastructure (focus on energy infrastructure deployment)

## Inflation Reduction Act of 2022

- 10-year production tax credit based on the kilograms (kg) of qualifying hydrogen produced at a facility that begins construction prior to January 1, 2033.
  - provides up to \$3.00 per kg of H2 produced at a given facility, based on the carbon intensity of production
- Billions in additional funding for GH2 application, ex:
  - \$3bn for pollution reduction at ports
  - \$1bn for clean heavy-duty vehicles
  - \$5.8bn for industrial decarbonization tech

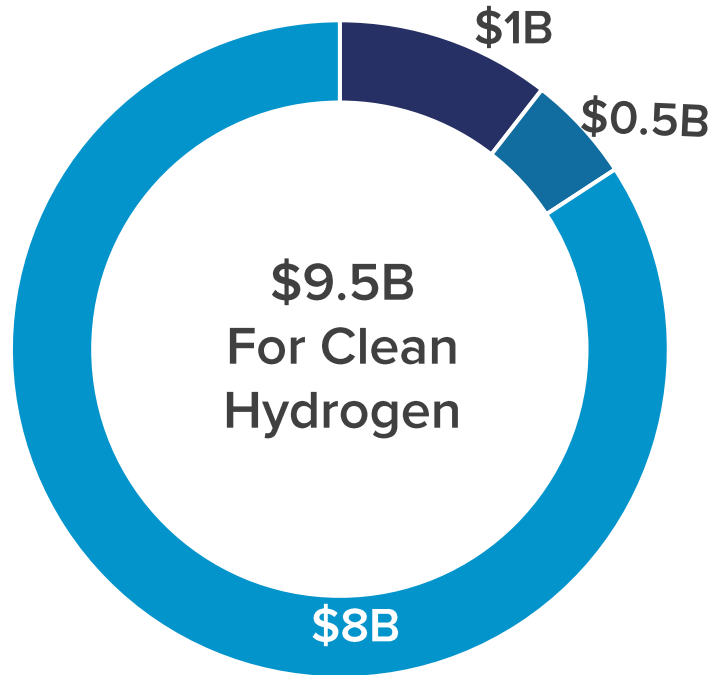
# Together, the IIJA and IRA Include \$479B in New Climate and Energy Spending



Carbon-free energy	<ul style="list-style-type: none"> <li>• Tax credits for investments in solar</li> <li>• Tax credits for producing wind and nuclear energy</li> <li>• Tax credits for transmission interconnects related to these clean energy projects</li> <li>• Funding for energy efficiency</li> </ul>
Transportation	<ul style="list-style-type: none"> <li>• Tax incentive for purchase of electric vehicles</li> <li>• Funding for EV charging infrastructure</li> </ul>
Clean Tech	<ul style="list-style-type: none"> <li>• Carbon capture tax credit for point source capture</li> <li>• Carbon capture tax credit for direct air capture (DAC)</li> <li>• Tax credit for production of clean hydrogen</li> <li>• Funding for hydrogen and DAC hubs</li> <li>• Funding for sustainable aviation fuels (SAF)</li> </ul>
Manufacturing	<ul style="list-style-type: none"> <li>• Funding for advanced manufacturing production</li> <li>• Investment for advanced industrial facilities</li> </ul>
Other	<ul style="list-style-type: none"> <li>• Agriculture initiatives</li> <li>• Methane emissions charge (revenue generating)</li> <li>• Resilience investments (e.g. rural area development)</li> <li>• Greenhouse gas reduction fund</li> </ul>

Source: EPA, CBO, BCG analysis

# Hydrogen Highlights in the IIJA



- Electrolysis research, development, and demonstration
- Clean hydrogen Technology manufacturing and recycling R&D
- Regional clean hydrogen hubs (at least 4)

## Other Hydrogen Provisions

- Directs work to reduce the cost of clean hydrogen to \$2 per kilogram by 2026
- Requires developing a National Hydrogen Strategy and Roadmap
  - [Draft released](#) last week for comments

# Last week, DOE opened applications for the \$7Bn to create regional clean H2 hubs

Department of Energy

## Biden-Harris Administration Announces Historic \$7 Billion Funding Opportunity to Jump-Start America's Clean Hydrogen Economy

SEPTEMBER 22, 2022

Energy.gov »

Biden-Harris Administration Announces Historic \$7 Billion Funding Opportunity to Jump-Start America's Clean Hydrogen Economy

**DOE Opens Bipartisan Infrastructure Law Funding Opportunity for Regional Clean Hydrogen Hubs and Releases Draft of DOE National Clean Hydrogen Strategy and Roadmap**

WASHINGTON, D.C. — The U.S. Department of Energy today opened applications for the \$7 billion program to create regional clean hydrogen hubs (H2Hubs) across the country, which will form a critical arm of America's future clean energy economy. As part of a larger \$8 billion hydrogen hub program funded through President Biden's Bipartisan Infrastructure Law, the H2Hubs will be a central driver in helping communities across the country benefit from clean energy investments, good-paying jobs, and improved energy security – all while supporting President Biden's goal of a net-zero carbon economy by 2050.

## Step 1: Concept Paper Stage

- Due November 7, 2022
- EERE sends encourage/discourage notifications to applicant

## Step 2: Full Application Stage

- Due April 7, 2022

# Intent of H2 Hubs Provision

At its core, the U.S. DOE aims to develop 6 - 10 regional clean hydrogen hubs that:

- + **Are truly clean:** “Aid achievement of clean H2 production standard”
  - + *H2 produced w/ carbon intensity under 4 kg CO2e/kg H2 on a well-to-gate lifecycle basis\**
- + **Architect the whole value chain:** “Demonstrate production, processing, delivery, storage, and end use”
- + **Flange up to a Larger Vision:** “Can be developed into a national clean hydrogen network”

To the extent it is practical, hubs should reflect:

- + **Feedstock Diversity:** for example, 1 hub with hydrogen production from renewables, nuclear, and fossil fuels with CCS
- + **End-Use Diversity:** At least 1 hub with hydrogen end-use in the electric power, industrial, residential and commercial heating, and transportation sectors
- + **Geographic Diversity:** Each clean hydrogen hub must be located in a different region of the United States and use energy resources that are abundant in that region
- + **Natural Gas-Producing Regions:** At least 2 hubs located in regions with the greatest natural gas resources

# The State of CT will team up with the Northeast for a proposal

This working group will help identify recommendations for the state legislature that will help CT be as competitive as possible for federal funding, while leveraging state funding opportunities



STATE OF CONNECTICUT  
GOVERNOR NED LAMONT

03/24/2022

## Governor Lamont Announces Connecticut Partners With New York, New Jersey, and Massachusetts To Develop Regional Clean Hydrogen Hub Proposal

*Multi-State Coalition Will Pursue \$8 Billion in Federal Infrastructure Law Funding Available to Establish Regional Hubs To Expand Use of Clean Hydrogen*

(HARTFORD, CT) – Governor Ned Lamont announced today that Connecticut is joining New York, New Jersey, and Massachusetts to develop a proposal to become one of at least four regional clean hydrogen hubs designated through the federal Clean Hydrogen Hubs program included in the 2021 federal bipartisan Infrastructure Investment and Jobs Act (IIJA).

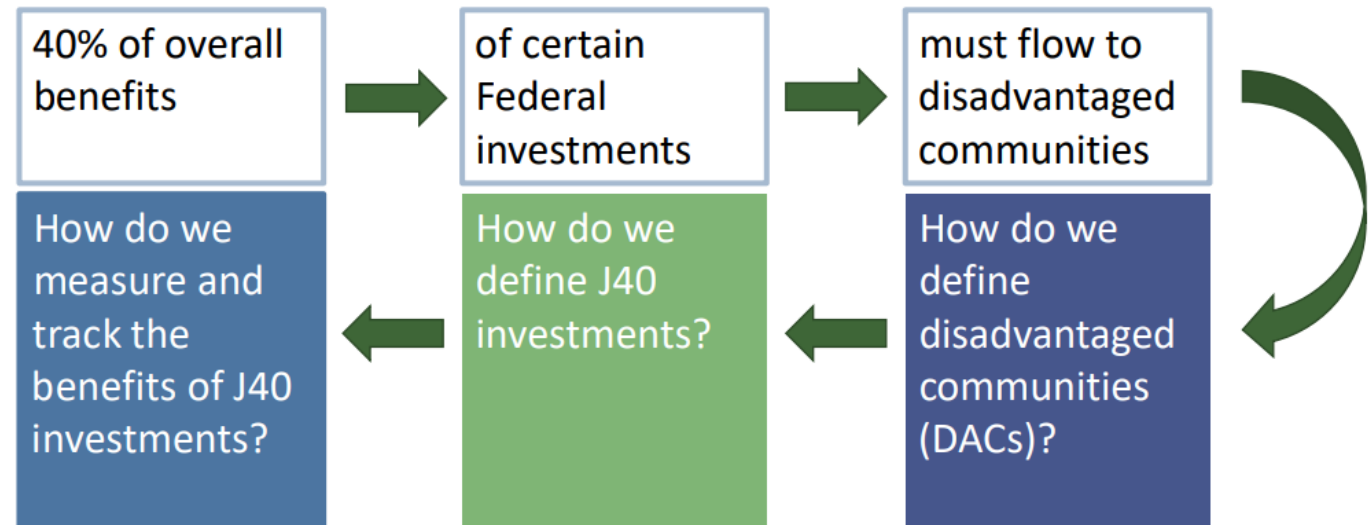
The IIJA includes historic levels of funding for hydrogen research and development as well as deployment of clean hydrogen infrastructure.

Hydrogen can be produced electrolytically from renewable or nuclear sources and has the potential to provide an emission-free energy source for otherwise hard-to-decarbonize sectors, such as long-distance transportation. Connecticut's longstanding leadership in fuel cell development and manufacturing positions the state to be a leader in hydrogen development as fuel cell technology can produce, store, and generate electricity from hydrogen.

# Per the Justice40 Executive Order, 40% of the overall benefits of certain Federal investments must flow to disadvantaged communities\*

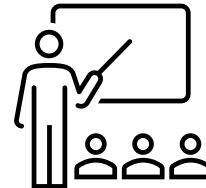
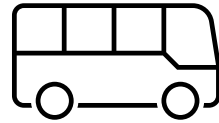
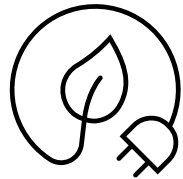
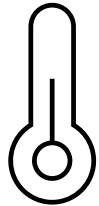
## 8 Policy Priorities to Guide DOE Implementation of Justice40

1. Decrease energy burden in disadvantaged communities
2. Decrease environmental exposure and burdens for disadvantaged communities
3. Increase parity in clean energy technology access and adoption in disadvantaged communities
4. Increase access to low-cost capital in disadvantaged communities
5. Increase clean energy enterprise creation and contracting (MBE/DBE) in disadvantaged communities
6. Increase clean energy jobs, job pipeline, and job training for individuals from disadvantaged communities
7. Increase energy resiliency in disadvantaged communities
8. Increase energy democracy in disadvantaged communities



# Investment Categories Covered by Justice40

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Climate Change	Clean Energy and Energy Efficiency	Clean Transit	Affordable and Sustainable Housing	Training and Workforce Development	Remediation and Reduction of Legacy Pollution	Development of Critical Clean Water and Wastewater Infrastructure
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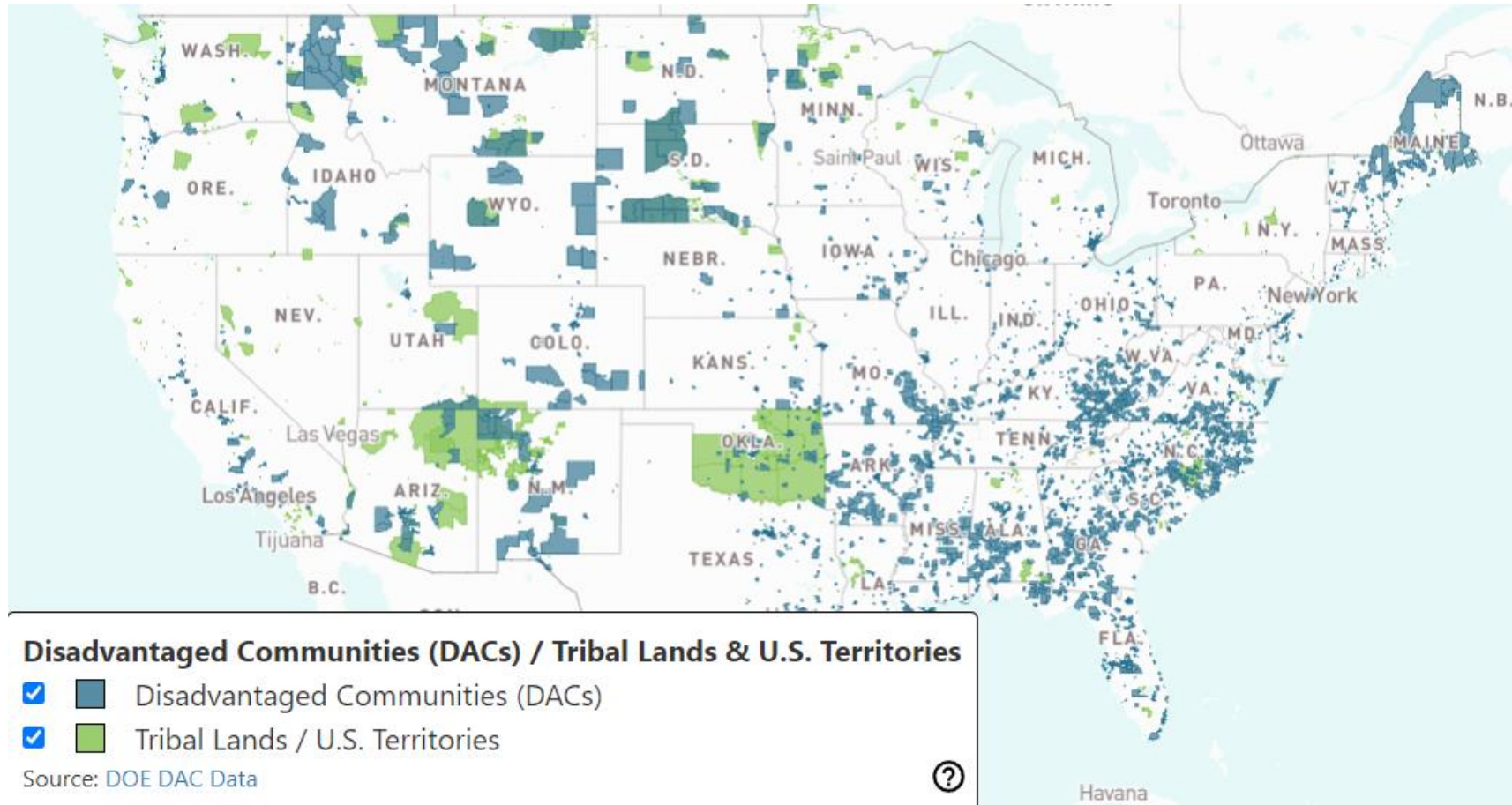


## Justice40 Implementation within Funding Opportunities

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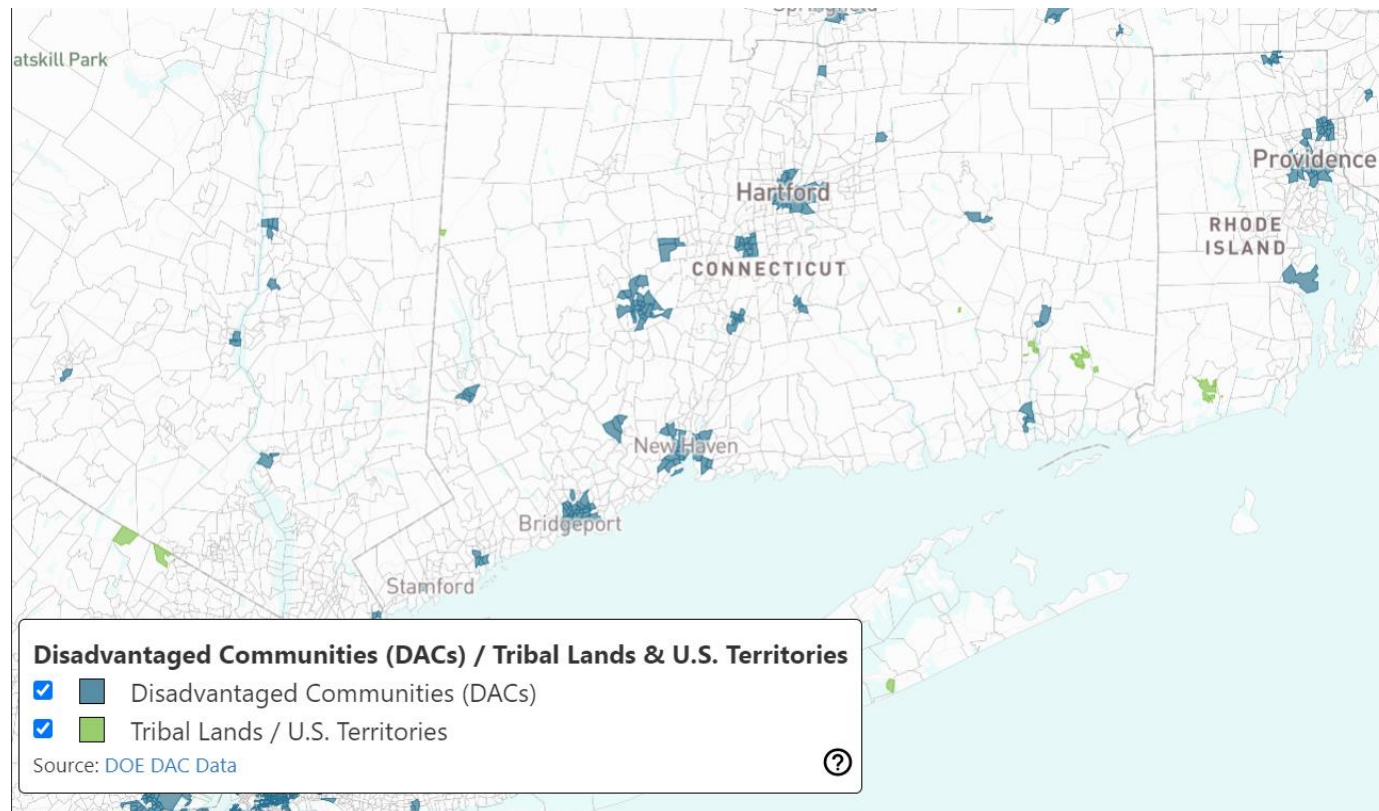
- + Applicants for new funding opportunity announcements (FOA) will be asked to consider how project benefits can flow to DACs. Moreover, FOA applicants will also be asked to articulate how DACs can be meaningfully considered, identified, and benefited in plans submitted to the DOE.
- + Funding recipients will also be asked to track and report how these identified benefits flow to DACs
- + Specific requirements will vary by program, including which Justice40 benefits are applicable and how DACs are to be identified for purposes of a given program. The DOE will provide general guidance on Justice40 implementation, but program-specific funding and guidance documents will be the source for definitive requirements.

# Identifying Disadvantaged Communities for Justice40



- + To be considered a DAC, a census tract must rank in the 80th percentile of the cumulative sum of 36 burden indicators (i.e. fossil dependence, environmental and climate hazards, etc.) and have at least 30% of households classified as low-income.
- + Federally recognized tribal lands and U.S. territories, are categorized as DACs

# Identifying Disadvantaged Communities



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## Key Takeaways

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In order to be competitive for IIJA funding, CT must:

- + Identify of opportunities to create benefit for environmental justice communities
- + Determine opportunities for state-level match funding
- + Identify CT's unique strengths (ex: manufacturing, research) and seek to further enable those

## Discussion Questions

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- + Are these key takeaways appropriate given your understanding of federal infrastructure opportunities?
- + What do you think are the most relevant comparative advantages in CT to help position us for competitive funding opportunity?
- + Based on your experience/unique perspective, what part of the hydrogen value chain do you think would benefit the most from funding enablement?

# Overview of DECD's Brownfield Programs

10 min



# TOOL BOX

- + Suite of tools to encourage the remediation and redevelopment of brownfields

Grants (Municipalities  
and Economic  
Development  
Agencies)

Liability Relief  
Programs

Low-Interest Loans  
(Developers,  
Municipalities,  
Agencies)

The Brownfield Land  
Bank Program

## Municipal Grant Program – Assessment and Clean-up

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- + Eligible Entities: Municipalities, Municipal Entities, Land Banks
- + Application Process: Competitive basis - periodic funding rounds (at least 2 a year)
- + Scoring Criteria
  - Shovel-readiness and merits of project
  - Economic development impact; projected tax revenues
  - Economic conditions (distressed municipality, opportunity zone)
  - Consistency with Local and State Plans
  - Support of DECD’s and State policies
  - Public-private partnership
  - Private/Applicant leverage of funds
  - Applicant team’s experience
- + **•Maximum amount:** \$2 million for remediation (\$200,000 for assessment)





## Targeted Brownfield Development Loan Program

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- + **Eligible Applicants:** Potential brownfield purchasers and current owners (including municipalities)
- + **Funding Amounts:** Loans of up to \$4 million (min. 10% developer equity)
- + **Terms:** Low-interest (3%),
  - + flexible/deferred repayment to match projected cash flow;
  - + maximum 30-year term;
  - + loan to be amortized over larger portion of the payment period;
  - + Loan to be fully repaid on permanent refinancing
  - + No loan forgiveness
  - + Debt Service Coverage ratio of 1.15
- + **Award Criteria:** Similar to the Grant Program and including private leverage of the DECD funds and return on investment



## Threshold Requirements

- + Site is a brownfield as per C.G. S. Sec. 32-760
- + Applicant and potential development partners have no direct or related liability for the conditions of the brownfield.
- + Applicant has access or will have access to the property, site control or path to site control (owner/potential purchaser)
- + Potential development partner is registered to do business in the State of CT and is in good standing – no pending lawsuits, liens filed and tax arrears.

## What is a Brownfield in CT?

### + Definition

“Brownfield” means any abandoned or underutilized site where redevelopment, reuse or expansion has not occurred due to the presence or potential presence of pollution in the buildings, soil or groundwater that requires investigation or remediation before or in conjunction with the redevelopment, reuse or expansion of the property



## Eligible Uses of Funding

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Costs associated with the investigation and redevelopment of a brownfield:

- + Soil, groundwater and infrastructure investigation
- + Assessment
- + Remediation
- + Lead and asbestos abatement
- + Demolition
- + Hazardous materials or waste disposal
- + Long-term groundwater or natural attenuation
- + Other institutional controls
- + Attorney fees for environmental consulting
- + Planning, engineering and environmental consulting
- + Building and structural issues
- + Environmental insurance

## Liability Relief Programs

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Connecticut statute provides several opportunities to relieve potential liabilities associated with brownfields - Provides state and third party liability relief, exemption from Property Transfer Act; not responsible for off-site contaminations

- + **Abandoned Brownfield Cleanup (ABC) Program:** Properties that have been unused or underutilized for 5 years or more can apply • Properties must enroll in DEEP's Voluntary Cleanup Program (VCP)
- + **Brownfield Remediation and Revitalization Program (BRRP):** Up to 32 properties per year that enter the BRRP and pay 5% of the assessed value of the land to DEEP are eligible for relief from *offsite* liability
- + **Municipal Brownfields Liability Relief (DEEP Program):** not required to fully investigate or clean up but required to serve as good stewards of the land

## Brownfield Land Bank Program

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- + PA 17-214 authorizes CT DECD to certify Connecticut non-stock corporations as CT Brownfield Land Banks
- + Acquire, manage, cleanup and reposition or sell brownfield sites on behalf of municipalities
- + Brownfield Land banks can apply for all DECD/OBRD Grants and Loans and liability relief programs
- + Three CT Brownfield Land Banks certified to date
  - + Connecticut Brownfield Land Bank Inc.
  - + New Colony Development Corporation
  - + Eastern CT Land Bank



## Contact & Additional Info

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- + [www.ctbrownfields.gov](http://www.ctbrownfields.gov)
- + Join mailing list – link on the website
- + Contact for a pre-application meeting
  - + [ctbrownfields@ct.gov](mailto:ctbrownfields@ct.gov) OR
  - + Binu Chandy
  - + 860.500.2454; [binu.chandy@ct.gov](mailto:binu.chandy@ct.gov)



# Discussion of Research Plan



10 min





# Funding Working Group Meeting Schedule

	9/27 4:00 – 5:00pm	10/26 10:30am – 12:00pm	11/18 10:30am – 12:00pm	12/15 10:30am – 12:00pm
<b>Learning Objective</b>	Understand the opportunities & what it takes to be eligible for funding.	Learn about how others are preparing and incentivizing hydrogen; dig deeper on CT specific opportunities.	Work together to narrow down priority areas (end uses, infrastructure) for funding opportunities.	Review proposed results and findings for final legislative report
<b>Federal Opportunities and Best Practices</b>	Overview of federal funding opportunities and participation requirements	Hypothesis on CT areas of strength for federal funding	Hypothesis on priority areas for federal infrastructure funding	Infrastructure investment priorities
<b>Brownfield Loan Program Exploration</b>	Intro/overview of the Targeted Brownfield Loan Program		Comparison/mapping of eligible regions vs. high priority H2 infrastructure areas	Outline opportunities to leverage or further the program to support hydrogen?
<b>State Funding</b>		Share how others are approaching hydrogen incentives deployed in other states	Share hypothesis on priority areas for incentive funding based on findings from Uses, Sources & Infrastructure WG	Incentive recommendations

Any recommendations of  
additional participants?

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# Thank You!

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Feel free to reach out with any questions!  
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