



TODAY'S WEBINAR TOPIC **CLEAN Programs – Making Clean Local Energy Accessible Now**

Speaker:



Craig Lewis
Executive Director
CLEAN Coalition



Stay Connected with Climate Communities

Beginning August 4, Climate Communities' weekly training webinars will be limited to **members only**.

Contact Andrew Seth at andy@climatecommunities.us for membership details.

July 21, 2011

For more information: www.climatecommunities.us



Urge Your Member of Congress to Co-Sponsor PACE Legislation

On Wednesday, July 20th, Representatives Nan Hayworth (R-NY), Dan Lungren (R-CA) and Mike Thompson (D-CA) introduced the PACE Assessment Protection Act of 2011 (H.R. 2599) in the U.S. House of Representatives.

If enacted, this legislation would restore the right of states and local governments to establish Property Assessed Clean Energy (PACE) programs.

**Contact your Member of Congress (202.224.3121)
 and urge them to **co-sponsor the bill.****



Upcoming Webinars

Jul. 28: Fort Worth, TX on Utilizing Performance Contracting to Reduce Energy Consumption and Save Money

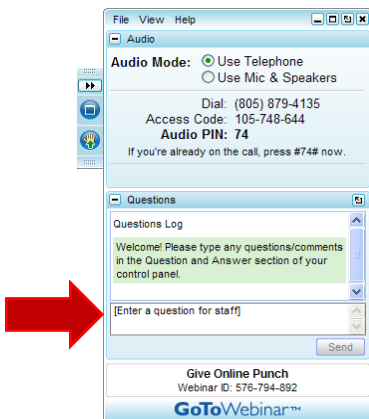
Climate Communities Members Only

Aug. 4: DOT TIGER III Grant Program (\$527 million)

Aug. 11: HUD Sustainable Communities Challenge Grant Program (up to \$30 million)



Asking questions



At any point during the presentation, you can type your question into the question text box and click send. All questions will be read aloud and answered at the end of the presentations, as long as time permits.



Local CLEAN Program Guide

Module 1: Overview & Key Considerations

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Making Clean Local Energy Accessible Now

21 July 2011

Clean Coalition – Mission and Advisors



Mission

**Accelerate the transition to cost-effective clean energy
 while delivering unparalleled economic benefits**

Board of Advisors

<p>Jeff Anderson <i>ED, Clean Economy Network</i></p> <p>Josh Becker <i>General Partner, New Cycle Capital</i></p> <p>Jeff Brothers <i>CEO, Sol Orchard</i></p> <p>Jeffrey Byron <i>Former Commissioner, California Energy Commission</i></p> <p>Rick DeGolia <i>Executive Chairman, InVisM, Inc.</i></p> <p>Mark Fulton <i>Managing Director, Global Head of Climate Change Investment Research, DB Climate Change Advisors, a member of the Deutsche Bank Group</i></p>	<p>John Geesman <i>Former Commissioner, California Energy Commission</i></p> <p>Patricia Glaza <i>ED, Clean Technology & Sustainable Industries</i></p> <p>L. Hunter Lovins <i>President, Natural Capitalism Solutions</i></p> <p>Dan Kammen <i>Chief Technical Specialist for Renewable Energy and Energy Efficiency, World Bank</i></p> <p>Fred Keeley <i>Treasurer, Santa Cruz County, and Former Speaker pro Tempore of the California State Assembly</i></p>	<p>Felix Kramer <i>Founder, California Cars Initiative</i></p> <p>Governor Bill Ritter <i>Director, Colorado State University's Center for the New Energy Economy, and Former Colorado Governor</i></p> <p>Terry Tamminen <i>Former Secretary of the California EPA and Special Advisor to CA Governor Arnold Schwarzenegger</i></p> <p>Jim Weldon <i>CEO, Solar Junction</i></p> <p>R. James Woolsey <i>Chairman, Woolsey Partners, and Former Director of the CIA</i></p> <p>Kurt Yeager <i>ED, Galvin Electricity Initiative</i></p>
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Making Clean Local Energy Accessible Now

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Purpose of the Local CLEAN Program Guide



CLEAN COALITION
Making Clean Local Energy Accessible Now

Local CLEAN Program Guide

Module 1: Overview & Key Considerations



June 2011

Help communities and local utilities evaluate, design, and enact

Clean Local Energy Accessible Now (CLEAN)

Programs based on global best practices and the expertise developed by the Clean Coalition through our work on designing and advocating for local CLEAN Programs throughout the United States

Making Clean Local Energy Accessible Now

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Structure of the Local CLEAN Program Guide



Module 1: Overview & Key Considerations

- Overview of CLEAN Programs
- Roadmap for evaluating how a local CLEAN Program can meet the goals, resources, and constraints of a community

Coming Soon!

Module 2: Establishing the Pricing for Renewable Energy

Module 3: Understanding the Avoided Cost of Generating Energy

Module 4: Determining the Rate Impact and Program Size

Module 5: Quantifying the Economic Benefits of the Program

Module 6: Designing the Program Procedures

Module 7: Gaining Support for the Program

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Overview of CLEAN Programs

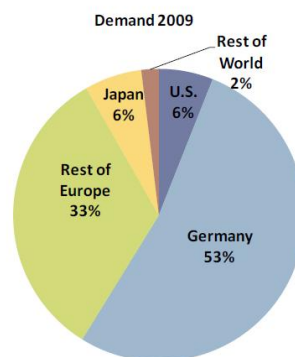
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The Most Effective Renewable Energy Policy

Clean Local Energy Accessible Now (CLEAN) Programs are the most effective policy solution for spurring renewable energy installations around the world

CLEAN Programs are responsible for **45% of all wind energy** and **75% of all solar PV capacity** installed in the world **before 2008**
(National Renewable Energy Laboratory)

CLEAN Programs are responsible for **86% of the solar capacity** deployed in the world in **2009**
(Navigant Consulting, Meister Consultants Group)



Source: Navigant Consulting

Current U.S. Renewable Energy Policies



The national policy discussion is focused on removing barriers for **large-scale** renewable power facilities and infrastructure:

- Permitting and siting large facilities and transmission lines
- Short-cutting environmental reviews
- Containing community opposition

Many state and local governments promote **small-scale** renewable power facilities with **net-metering** policies:

- Allows customers to reduce electric bills by serving onsite load with limited ability to flow excess energy generation to the utility grid
- Total onsite energy use over an annual period generally caps project size
- Limited financial incentive for properties with low energy use or tenants that pay the utility bills (multi-tenant properties are exponentially difficult)
- The financial security of energy savings by a utility customer is far less attractive to investors/lenders than a revenue stream from a stable utility

How CLEAN Programs Work



CLEAN Programs create a stable market for clean local energy by removing the main barriers for **Wholesale Distributed Generation**, local renewable energy projects connect to the local distribution grid and sell all their energy to the local utility for local use

Procurement	Interconnection	Financing
<ul style="list-style-type: none"> • Barrier: Securing a contract involves high transaction costs and risks • Solution: Standardized contract terms and rates 	<ul style="list-style-type: none"> • Barrier: Gaining access to the distribution grid is risky, expensive, and time-consuming • Solution: A transparent and streamlined distribution grid interconnection process 	<ul style="list-style-type: none"> • Barrier: Risk associated with other noted barriers and lack of secure financial basis to attract investors and lenders • Solution: Reduce barrier risk and provide stable utility payment stream

Key Features of CLEAN Programs



CLEAN Contracts

- Requires the utility to enter into a **standard contract** with each eligible renewable energy generator
- Predefined, **fixed contract price**
- **Long contract duration** (typically 20 years)

Grid Access

- **Predictable and streamlined interconnection** to the utility's distribution grid
- Transparent processes, costs, and timeframes
- Predefined preferable locations

CLEAN Programs Reduce Transaction Costs



California

Typical California paperwork for one project



Paperwork above is required for a single California Solar Initiative (CSI) projects sized between 1 kW and 1 MW.

Even more paperwork is required for California projects larger than 1MW, which must go through the RPS-related processes.

Germany

Typical Germany paperwork for one project



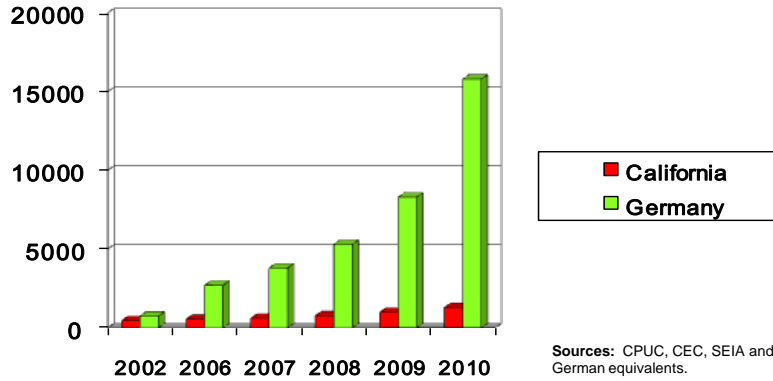
Paperwork above covers all German CLEAN projects from 1kW to as large as 20MW.

Source: Gary Gerber, President of CalSEIA and Sun Light & Power, June 2009

Proven Success of CLEAN Programs: Germany



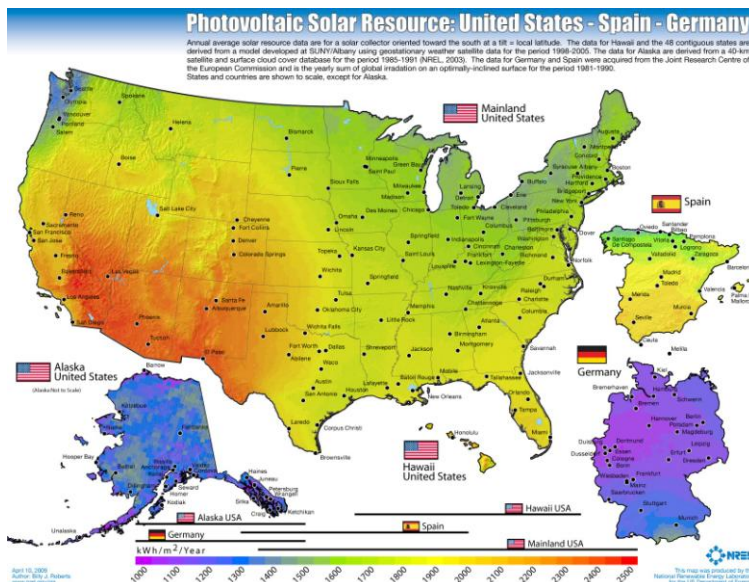
Solar Markets: Germany vs. California (RPS + CSI + other)



Sources: CPUC, CEC, SEIA and German equivalents.

Germany added almost 30 times more solar energy than California in 2010 even though California's solar resource is about 70% better!

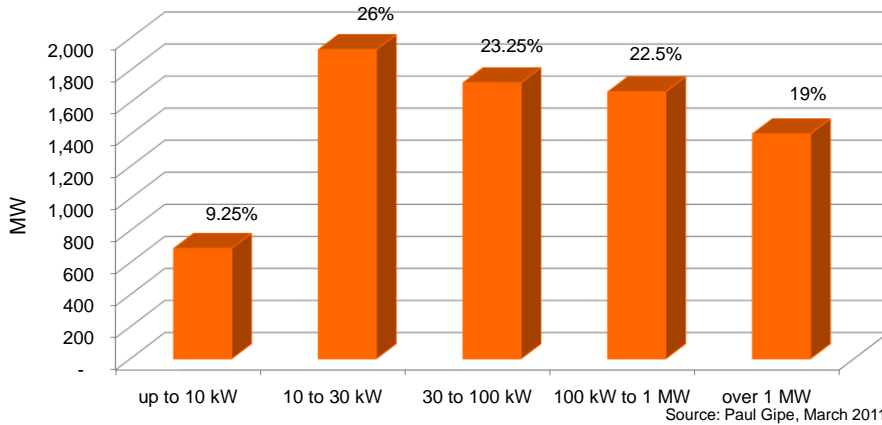
US Has Far Better Solar Resource Than Germany



German Solar Capacity is Mostly Rooftop WDG



German Solar PV Capacity Installed in 2010

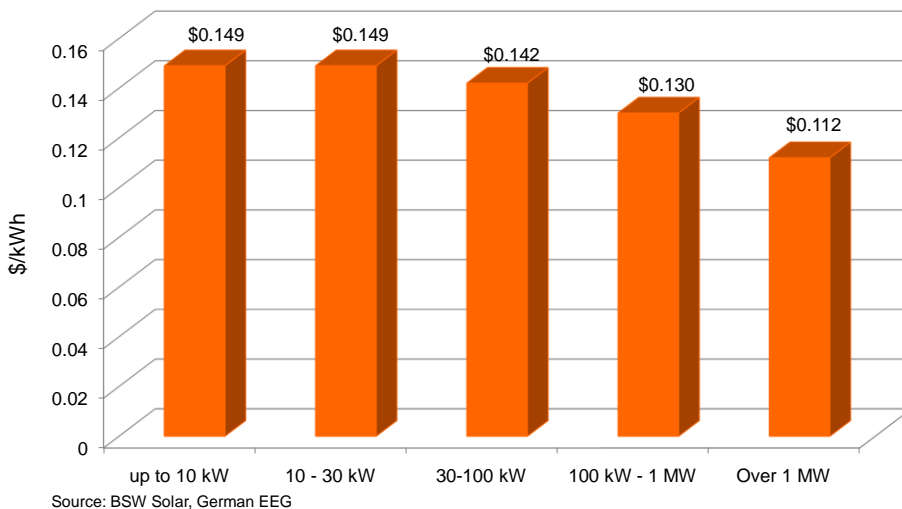


Average German project is ~100 kW rooftop Wholesale Distributed Generation

German Solar Pricing is a Bargain



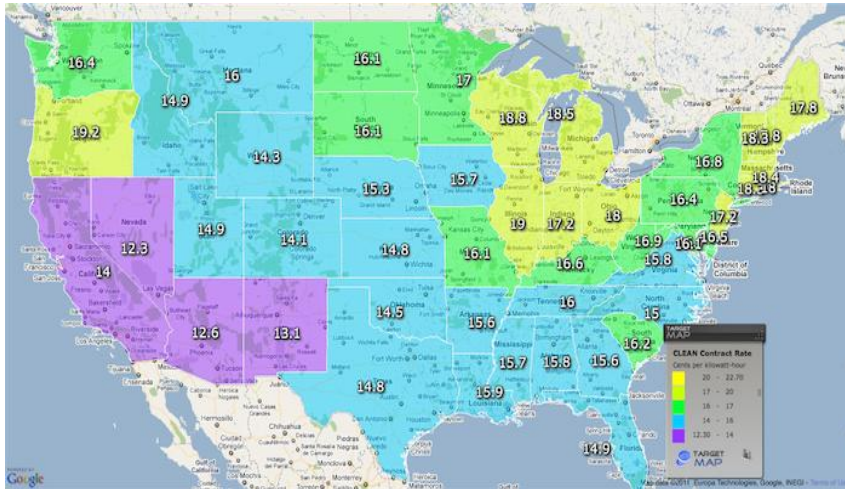
California-equivalent German Pricing by Solar Project Size



Small Solar Rooftop CLEAN Rates Required across US



CLEAN Rates required for PV rooftop projects up to 30kW. Assumptions include \$3.50/W installed cost (30% higher than in Germany) and use of ITC and depreciation

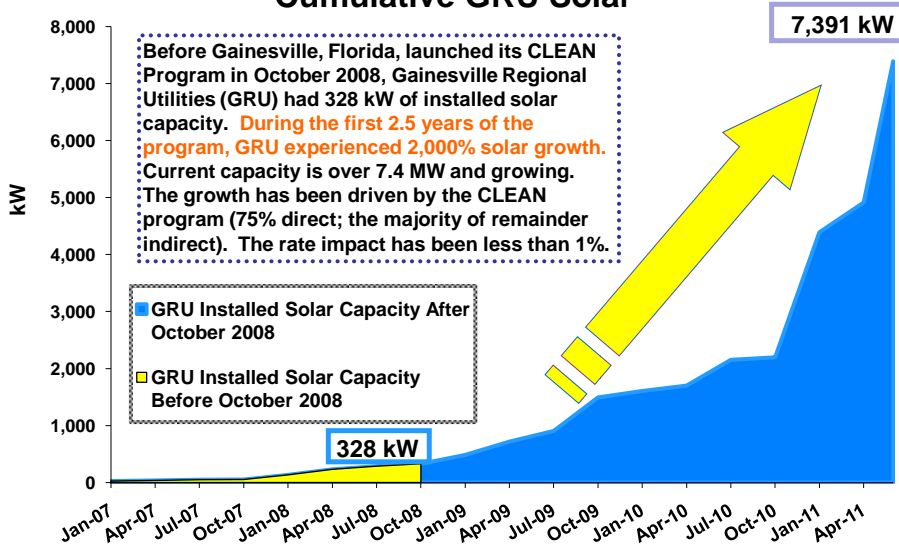


Source: John Farrell, ILSR, Jun2011: <http://energyselfreliantstates.org/content/pricing-clean-contracts-feed-tariffs-solar-pv-us>

Proven Success of CLEAN Programs: Gainesville



Cumulative GRU Solar





Local Benefits of CLEAN Programs

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CLEAN Maximizes Local Economic Benefits



CLEAN Programs bring the economic benefits of energy production to local communities:

- Producing local renewable energy **creates far more jobs** than producing fossil fuel or nuclear energy. e.g. Solar PV production creates 9 times more jobs than coal or natural gas production (http://rael.berkeley.edu/sites/default/files/old-site-files/TLS_Four_May2209_1.pdf).
- **Keep energy dollars in the community.** UC Berkeley found that a CLEAN Program tailored for California would stimulate three times more jobs, \$50 billion additional private investment, and \$1.7 billion additional state revenues, compared to the baseline reference case. (<http://www.clean-coalition.org/economic-benefits-of-a-fit/>)
- **Repurpose or maximize the productivity** of underutilized spaces (e.g. brownfields, parking lots, rooftops, agricultural land, etc.)

CLEAN Leverages Private Investment Dollars



CLEAN Programs leverage private investment dollars to meet community goals by reducing the costs, risks and timeframes for project development.

- **Does not rely on subsidies** or other government expenditures.
- **Can be easily implemented** and administered by utility staff
- **Drives down local installation costs** by increasing local renewable project development

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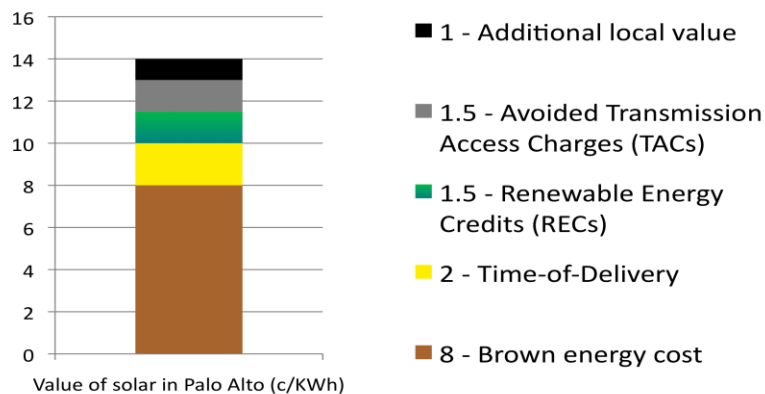
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CLEAN Avoids Hidden Transmission Costs



Avoids billions for siting and build-out of **new transmission lines**

Avoids **inefficiencies** of long-distance transmission of energy (line losses range from 7–14% in California and average 8% in NYC)



Making Clean Local Energy Accessible Now

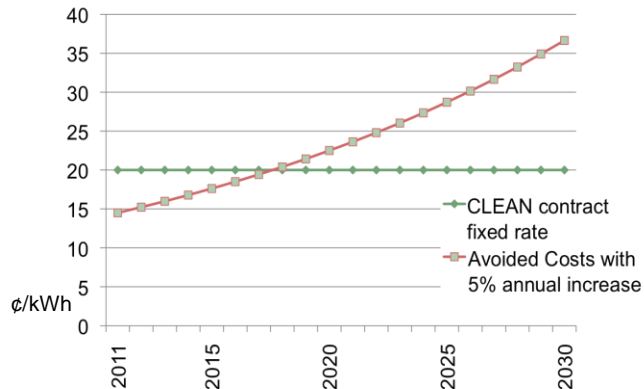
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CLEAN Locks In Reasonable Electricity Rates



- Protects communities from rising fossil fuel costs
- May result in a small rate increase during initial years (e.g. the City of [Gainesville, Florida](#), achieved a 2,000% increase in solar capacity with a rate increase of less than 1% over the first 2.5 years of its CLEAN Program)

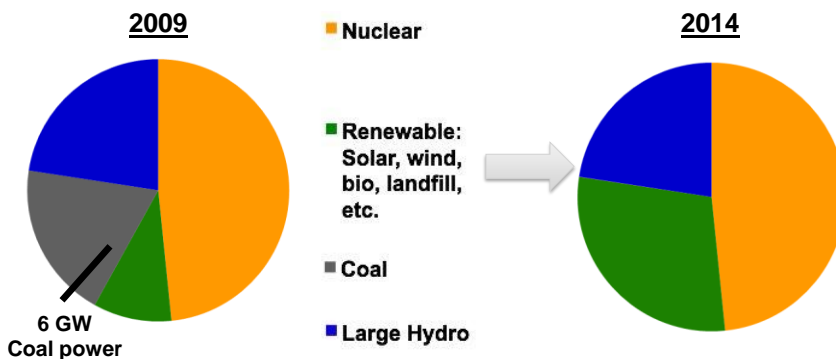
For this single 100kW solar rooftop project in Denver, avoided costs will rise above the CLEAN contract price within a few years



CLEAN Delivers on Sustainability Goals



Ontario Goal to Replace 100% of Coal Power by 2014



Note: The Canadian Province of Ontario had 31 GW of peak electric capacity in 2009.

6 GW of coal power on track to be replaced by renewables within 5 years

CLEAN Promotes a Safer Energy Infrastructure



- **Protects the health of our families** from dirty and unsafe energy
- **Makes communities safer** in the event of an earthquake, terrorist attack, or other disaster
 - 2011 – Failure of 3 nuclear reactors in Japan
 - 2003 – U.S. Northeast blackout (transmission line failure caused 50 million people to lose power)



Key Considerations for Evaluating CLEAN Programs

Hybrid CLEAN Programs



A community with less control over its local utility can create a **Hybrid CLEAN Program**

- Control over wholesale electricity purchases, but no control of local electricity grid = **CLEAN Contracts Program**
- Control of retail electricity purchases only and no control over local electricity grid = **CLEAN Retail Contracts Program**
 - Standard Retail Power Purchase Agreements (Retail PPA)
 - In typical Retail Program, Project Developer agrees to:
 - i) Lease space on a designated property
 - ii) Install and interconnect renewable facility “behind the meter” to serve onsite load
 - iii) Sell the energy produced at predefined rates for a long duration
 - iv) Maintain the facility over contract period

Consider Clean Local Energy Resources



Choose which types of renewable energy projects to include in a local program:

- Determine which resources are most abundant and cost-effective
- Read Module 2 of the Guide for additional guidance on how to select technologies to include and associated pricing considerations



Consider Program Goals & Constraints



Identify **Program goals**, which may include:

- Stimulating the local economy
- Enhancing local government revenue
- Attaining national recognition
- Minimizing consumer rate increases
- Achieving local sustainability goals on schedule

Identify ways to **mitigate the Program's potential constraints**, which may include:

- Starting with a pilot-sized program to limit concerns like the consumer rate impact (even if concerns are not rational)
- Keeping the initial program very simple (single technology etc)
- Complying with, or minimizing changes to, existing contractual obligations of the utility

Download the Local CLEAN Program Guide



Free download:

www.clean-coalition.org/local-action

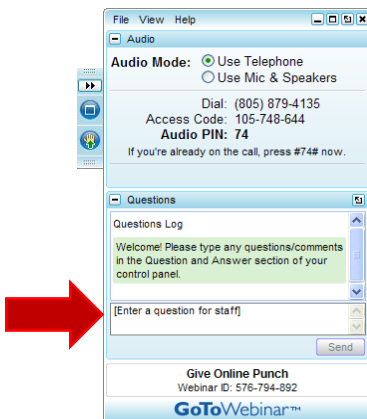


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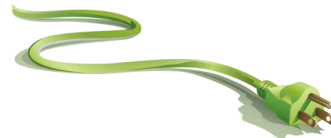
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Join Climate Communities and:

- Receive timely information on emerging clean energy and sustainability issues, including policy updates and grant announcements
- Participate in weekly webinars, national conferences, & other events
- Share best practices with local governments across America
- Build relationships with key federal decision-makers
- Get strategic guidance on grant opportunities
- Access archived recordings and presentation materials

Email andy@climatecommunities.us for membership details.