

Clean Coalition

Quarterly Newsletter | December 17, 2013

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Dear Clean Coalition Friends,

As 2013 winds down, the Clean Coalition is pleased to report on another impactful year accelerating the transition towards clean local energy.

Renewables continue to play an increasingly important role in the power system. 2013 will be a record-breaking year for solar with the U.S. installing more capacity than world leader Germany. Last year, wind power was dominant in the U.S. – comprising the top source of new electrical energy generation. Distributed renewables, in particular, are proving transformative. A new solar project was installed about every four minutes on average this year; distributed wind turbines now generate more than 800 megawatts (MW) nationwide. These exciting developments signal that the Clean Coalition is making significant headway towards its [ambitious 2020 objectives](#).

Sustained deployment of clean energy will be facilitated by policy – an arena in which the Clean Coalition scored a number of key victories over the past twelve months. California's Assembly Bill 327, which Governor Jerry Brown recently signed into law, [brings together years of Clean Coalition work](#) and marks a significant step forward in proactively planning the grid for distributed energy resources. California's Senate Bill 43, supported by the Clean Coalition, will bring distributed resources online by creating an additional 600 MW of wholesale distributed generation market opportunity. Notably, the law specifies that 100 MW must be sited in communities disproportionately affected by environmental pollution.

The Clean Coalition's [Hunters Point Project](#) is of particular relevance to the latter SB 43 mandate. This project, conducted in collaboration with Pacific Gas & Electric, will showcase how any community can cost-effectively integrate local renewables into their distribution grid while maintaining or improving power quality, reliability, and resilience. Once complete, this cutting-edge project will provide empirical evidence that clean local energy can reliably fulfill at least 25% of total electric energy consumption, while also delivering significant economic, environmental, and grid resilience benefits to the local community.

To ensure the successful convergence of the Clean Coalition's activities around the creation of clean local energy systems, the Clean Coalition has added two key team members. Greg Thomson has [joined the Clean Coalition](#) as Programs Director, and Stanford Professor Mark Z. Jacobson has joined the organization's distinguished [Board of Advisors](#).

This quarterly newsletter is full of additional details on the following highlights:

- [New FERC rule incorporates Clean Coalition recommendations to streamline interconnection nationwide](#)
- [New York utility leading the transition towards a distributed energy future](#)
- [SB 1332 CLEAN Program met with considerable demand](#)
- [New California law sets grid planning precedent](#)
- [A model for clean community power](#)
- [Guiding California towards a modern, dynamic grid](#)
- [Stanford Professor Mark Z. Jacobson joins Board of Advisors](#)
- [Clean Coalition partners with Power Over Energy](#)

In the News

[Rooftops to Deserts: How Policy Directs the Growth of Renewables | Huffington Post | December 12, 2013](#)

This Clean Coalition-authored article provides an overview of the major policies that impact the three different types of grid-connected projects: retail distributed generation, wholesale distributed generation, and central generation.

[Monterey Shale Report Exposes Myth of Economic Prosperity From Fracking California | EcoNews | December 4, 2013](#)

Craig Lewis, Executive Director of the Clean Coalition, is quoted in this press release announcing a new Post Carbon Institute and Physicians, Scientists & Engineers for Healthy Energy report, which presents compelling evidence that the promise of a Monterey Shale boom is a myth.

[California Closes In on Smart Solar Inverter Rules | Greentech Media | November 13, 2013](#)

California, already the U.S. vanguard in distributed solar power, may soon break new ground in requiring "smart" functionality for the inverters that connect all that solar at the grid's edge. But, as with every aspect of solar's growth in the Golden State, this push toward solar inverter-grid integration is complicated.

[It's Time for Grid Planners to Put Distributed Resources On Par With Transmission | Greentech Media | November 13, 2013](#)

Clean Coalition Executive Director Craig Lewis explains the significance of new planning requirements in California

As always, thank you for supporting the Clean Coalition and its pursuit of making clean local energy accessible now.

Sincerely,
Craig Lewis

New FERC rule incorporates Clean Coalition recommendations to streamline interconnection nationwide

On November 22, the Federal Energy Regulatory Commission (FERC) announced significant rule changes to expedite Small Generator Interconnection Procedures (SGIP) across the country.

These important federal changes directly build upon Clean Coalition's work on California interconnection. Specific Clean Coalition recommendations incorporated by FERC include raising the size of projects qualifying for Fast Track review to match local line voltage and establishing the option of Pre-Application Reports. These reports allow generators to better access information about existing system conditions to optimize design and avoid triggering additional studies or upgrades before submitting their formal application to interconnect. FERC's new rules demonstrate the value and effectiveness of the Clean Coalition's strategy – establishing precedent-setting policy on the state level that can be scaled nationally.



Under the new FERC rules, projects up to 5 MW will now be applicable for national Fast Track. The Clean Coalition's recommendation for a 100% minimum load supplemental review screen, which will effectively double the previous 15% peak load threshold for generation from distributed renewables, was also included in the new rules. Collectively, FERC's reforms will help even the playing field for distributed generators and result in up to a five-fold increase in the size of projects allowed to use Fast Track.

FERC will now require Pre-Application Reports nationwide – a change that reflects the Clean Coalition's successful efforts to reform Rule 21 in California. Moreover, the Commission agreed with the Clean Coalition's request to ensure that jurisdictions with combined SGIP and Large Generator Interconnection Procedures (LGIP) are also subject to these reforms.

These new FERC rules highlight the importance and widespread impact of the Clean Coalition's innovative policy work. To ensure continued adoption of its forward-thinking policies, the Clean Coalition created the [CLEAN Resource Hub](#). The Hub offers a wealth of tools to help policymakers and regulators open the wholesale distributed generation (WDG) market segment, including model interconnection rules.

New York utility leading the transition towards a distributed energy future

Across the country, utilities are paying greater attention to distributed energy resources – like distributed generation, energy storage, and demand response – as they increasingly offer a cost-competitive alternative to conventional generation.

New York's Long Island Power Authority (LIPA) is leading the way. This October, LIPA issued two requests for proposals (RFP) totaling 1,910 MW that call for increased deployment of distributed energy resources to replace current peaking facilities and improve power system efficiency.

"These RFPs are intended to have resources added to the LIPA system that are smaller in size and strategically located to provide the greatest overall value to our customers," said LIPA Chief Operating Officer John McMahon.



planning requirements in California.

[Advanced Inverters – Recovering Costs and Compensating Benefits | Solar Server | October 18, 2013](#)

Advanced inverters will increasingly be required for distributed solar generators across the country. While there is clear recognition that advanced inverters offer grid benefits, how to fairly allocate their costs and compensate their benefits remains a topic of hot debate.

[Who Should Bear the Costs of Advanced Inverters? | The Energy Collective | October 10, 2013](#)

A group of Western utilities recently endorsed advanced inverters as an effective and affordable tool to regulate voltage and is working to make them mandatory for all new solar facilities within their service territories. This op-ed addresses the questions of who should bear the costs and how to compensate for the benefits.

[CLEAN Resource Hub leverages distributed generation market momentum | Fierce Energy | September 26, 2013](#)

In September, the Clean Coalition launched its CLEAN Resource Hub, which provides tools to help policymakers, utilities, and advocates expand the wholesale distributed generation market segment throughout the United States.

[Unleashing Clean Local Energy — and Doing It Near You | Huffington Post | Sept 25, 2013](#)

This op-ed outlines the cost-effectiveness of local renewables and the Clean Coalition's long-held position that the locational value of distributed generation is both quantifiable and significant.

See the Clean Coalition [website](#) for additional news.

Upcoming Events

[January 23, 2014 | California's Net Energy Metering: Challenges and Opportunities | San Francisco, CA](#)

Craig Lewis, Executive Director of the



LIPA's latest RFPs build upon prior success embracing distributed resources. With support from the Clean Coalition, the utility's CLEAN Solar Initiative is directing the deployment of local solar capacity to a constrained region on its grid. This move will save LIPA ratepayers \$84 million by deferring – and potentially eliminating the need for – expensive transmission grid investments.

SB 1332 CLEAN Program met with considerable demand

A new CLEAN Program launched by Imperial Irrigation District (IID), California's sixth largest utility, is off to a strong start. Since opening the program in September 2012, IID has received applications for new renewable energy capacity that more than doubles the program's current size – signaling significant demand for WDG.

IID launched its 13 MW program in compliance with Senate Bill (SB) 1332. This Clean Coalition-sponsored law required California's larger publicly owned utilities to initiate CLEAN Programs by July 1 of this year and pay developers full value for their energy, which includes locational and environmental benefits. IID's CLEAN Program pricing averages 7.5 cents per kilowatt-hour and prices rise as high as 10.4 cents for generation during peak hours.

The early success of IID's program shows that WDG solar has reached a form of "grid parity" for IID ratepayers, where the full value pricing for renewables matches the cost for independent developers to deploy new generation. Despite SB 1332's modest 13 MW program size requirement for IID, there is nothing preventing the utility from expanding its program to accommodate the proven demand to develop even more cost-effective clean local energy.

New California law sets grid planning precedent

California Governor Jerry Brown recently signed into law Assembly Bill (AB) 327, which mandates that the state's largest investor owned utilities proactively plan for a distributed power system. The new law brings together years of Clean Coalition work and marks a significant step forward in smarter grid planning by ensuring that California ratepayers are protected from unnecessary investments in the outdated centralized power paradigm.

The law acknowledges that distributed energy resources (DER) – such as distributed generation, energy storage, demand response, and advanced inverters – increasingly offer a cost-competitive alternative to transmission-dependent, conventional generation. And modernizing the grid with DER can deliver additional benefits, including greater system efficiency and increased reliability. As these benefits are further analyzed, quantified, and monetized, the deployment of DER will continue along its rapidly accelerating trajectory.



To prepare for this shift, AB 327 requires California's largest utilities to plan their grids for DER. Specifically, AB 327 requires that Pacific Gas & Electric, Southern California Edison, and San Diego Gas & Electric take the following three actions:

1. Submit plans to the California Public Utilities Commission (CPUC) that identify optimal locations for the deployment of distributed resources.
2. Propose policies and programs to achieve this deployment.
3. Include any necessary distribution grid spending to accomplish their plans in their next general rate case.

In the same manner that the Clean Coalition expanded its Rule 21 interconnection reforms to the national level, AB 327's required actions set an important precedent for the rest of the country. This Clean Coalition victory highlights that proactively planning for distributed resources can reduce unnecessary investments in central generation and

Clean Coalition will present this AGRION conference.

[January 29, 2014 | Fast Ramp and Intra-Hour Market Incentives | San Francisco, CA](#)

Stephanie Wang, Policy Director for the Clean Coalition, will present at the Fast Ramp and Intra-hour Market Incentives conference taking place from January 29-30, 2014 in San Francisco, CA.

[February 4, 2014 | Solar Power Generation 2014 | San Diego, CA](#)

Craig Lewis, Executive Director of the Clean Coalition, will present at the Solar Power Generation 2014 conference taking place from February 4-5 in San Diego, CA at the Marriott Del Mar.

[February 12, 2014 | 7th Annual Storage Week | San Francisco, CA](#)

Craig Lewis, Executive Director of the Clean Coalition, will present at the 7th Annual Storage Week conference taking place from February 11–13 in San Francisco, CA.

[April 9, 2014 | SolarTech West Coast 2014 | Los Angeles, CA](#)

Craig Lewis, Executive Director of the Clean Coalition, will present at the SolarTech West Coast 2014 conference taking place from April 9–11 in Los Angeles, CA.

See the Clean Coalition [website](#) for additional upcoming events.

Recent Regulatory Filings

[CPUC | Clean Coalition Comments on Alternate Resolution E-4559 | November 27, 2013](#)

This filing provides Clean Coalition support for the adoption of Alternate Resolution E-4559 rather than Resolution E-4559.

[Los Angeles County | Planning & Zoning for Renewable Energy | November 26, 2013](#)

This filing provides Clean Coalition joint comments with the Sierra Club and

transmission, while also preparing the grid to be cleaner, more efficient, and more resilient.

A model for clean community power

In collaboration with Pacific Gas & Electric (PG&E) and in support of the city of San Francisco's goal to achieve a 100% renewable electricity supply, the Clean Coalition is bringing a groundbreaking project to life in San Francisco.

The [Hunters Point Project](#), named after the substation that serves the Bayview and Hunters Point areas of San Francisco, will prove that clean local energy can reliably meet at least 25% of the community's total electric energy needs. This Project, sited in a historically disadvantaged area, will help PG&E meet its SB 43 mandate to bring clean local energy online in communities.

Policymakers and utility executives demand empirical evidence that proves large penetrations of clean local energy can result in a reliable grid. As part of the Project, the Clean Coalition is modeling the entire Hunters Point substation area – which covers approximately 20,000 residences and businesses – to determine the optimal locations to build 50 MW of new, local renewable capacity. To develop this model, the Clean Coalition is first identifying the most valuable locations in a community to deploy large amounts of clean energy. Then, using sophisticated software tools and techniques, the organization will model the power flow on the local grid – starting with baseline power and then accounting for substantial generation from local renewable assets.

As the final step in the modeling process, the Clean Coalition balances and optimizes the power flow using dynamic grid solutions such as advanced inverters, energy storage, and demand response. Once complete, this Project will prove that any distribution grid can support significant penetrations of renewable energy while integrating dynamic grid solutions. The end result is a modern, reliable grid that seamlessly integrates high penetrations of local renewable generation while keeping power, voltage, and frequency in balance. Ultimately, these projects will provide policymakers and utility executives with the empirical evidence needed to embrace clean local power with confidence.

In addition, the Clean Coalition is conducting an impact analysis of the project to determine the expected economic, energy, and environmental benefits. These community energy solutions grow local economies by increasing private investment, creating jobs, stabilizing energy prices, and keeping energy dollars close to home. Projects like Hunters Point result in smarter, cleaner, and more resilient power systems – serving as a model for any community seeking high penetrations of clean local energy.



Guiding California towards a modern, dynamic grid

The Clean Coalition is spearheading a bold effort to educate California officials about how dynamic grid solutions will best position the state to meet its Renewable Portfolio Standard (RPS) and AB 32 greenhouse gas reduction goals.

Through active intervention at the state's key regulatory bodies, the Clean Coalition is shaping critical proceedings on demand response, electric vehicles, flexible capacity, resource adequacy, advanced inverters, and replacing the San Onofre Nuclear Generating Station.

Currently, many policymakers associate reliability and integration cost issues only with

Audubon Society on an ordinance amending Title 22 – Planning and Zoning – of the Los Angeles County Code related to the establishment of regulations for small-scale renewable energy systems, objecting to restrictive definitions of wholesale DG, and recommending alternative language.

[CEC | Electricity Infrastructure Costs of Distributed Generation | November 5, 2013](#)

This filing provides Clean Coalition comments in response to the staff workshop: Electricity Infrastructure Costs of Distributed Generation.

[CPUC | Resource Adequacy \(R.11-10-023\) Flexible Capacity – Use-limited resources | October 31, 2013](#)

This filing provides Clean Coalition and DECA informal comments related to Treatment of Use-Limited Resources in the Draft Staff Proposal for Qualifying Capacity and Effective Flexible Capacity Calculation Methodologies for Energy Storage and Supply-Side Demand Response & Resources Adequacy Workshop (R.11-10-023).

[CPUC | Informal comments on staff proposal re: Qualifying Capacity and Effective Flexible Capacity | October 22, 2013](#)

This filing provides Clean Coalition and DECA informal comments on the staff proposal, expressing some caution over the proposed probabilistic modeling methodology and urging a switch to “perfect resource” concept instead of “perfect generator”.

[CPUC | Comments on Demand Response Rulemaking | October 21, 2013](#)

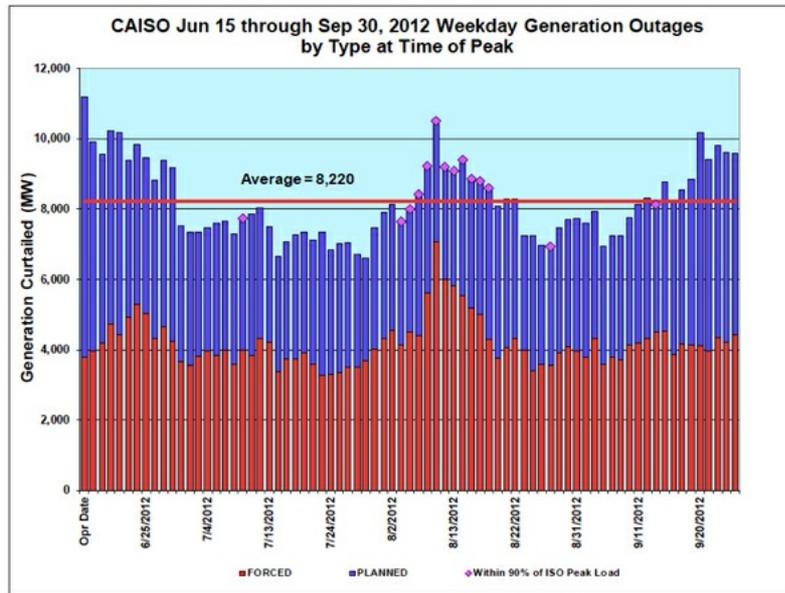
This filing provides Clean Coalition comments on Demand Response Rulemaking and Scope of Proceeding.

[CPUC | Clean Coalition Reply Comments on Energy Storage Proposed Decision | September 30, 2013](#)

This filing provides the Clean Coalition's reply comments on energy storage proposed decision.

renewables. For example, rather than following California's established Loading Order, the California Independent System Operator (CAISO) is pushing for procurement of fast-ramping natural gas plants to mitigate potential reliability issues illustrated by its 'Duck Chart' as California approaches its 33% Renewable Portfolio Standard.

In reality, all forms of generation – including nuclear and fossil fuel plants – face integration costs and reliability issues. While renewables have predictable variability, nuclear and fossil fuel power plants often shut down unexpectedly, forcing energy consumers to foot the bill for reserves and frequency response. The CAISO graph below illustrates how more than half the outages associated with fossil fuels are unplanned.



Source: CAISO Summer Loads and Resources Assessment

More than half of the outages associated with fossil fuels are unplanned

Relying on natural gas plants to integrate renewables is an unnecessary step backwards from the state's long-term energy and climate goals. The Clean Coalition has [modeled cost-effective dynamic grid solutions](#) – such as demand response, energy storage, and curtailment – to show their effectiveness integrating renewables and “Flattening the Duck” as California approaches its RPS goal. Similarly, the Clean Coalition continues its work ensuring that [advanced inverters](#) are treated as a cost-effective tool to optimize power quality, system reliability, and ratepayer economics through distributed voltage regulation.

The Clean Coalition's efforts continues to gain traction with high-level policymakers and utilities. A recent joint CAISO/North American Electric Reliability Corporation (NERC) report supports many of the Clean Coalition's proposed solutions. Recognizing this important perspective, the California Energy Commission (CEC) has invited the Clean Coalition to present this January on renewables integration. This presentation will help ensure that California policymakers clearly understand the opportunity of dynamic grid solutions.

Stanford Professor Mark Z. Jacobson joins Clean Coalition Board of Advisors

The Clean Coalition proudly welcomes Dr. Mark Z. Jacobson, Director of the Atmosphere/Energy Program and Professor of Civil and Environmental Engineering at Stanford University, to its distinguished Board of Advisors. Dr. Jacobson is a leading energy expert focused on how renewables can provide 100% of global energy needs, eliminating the need for fossil fuels.

Dr. Jacobson's work focuses on understanding severe atmospheric problems and assessing energy solutions. In 2000, he discovered that black carbon – the main component of soot aerosol particles – might be the second-leading cause of global warming after carbon dioxide. For this, he received the 2005 American Meteorological



[CEC | Clean Coalition Comments on Preliminary Reliability Plan for LA Basin and San Diego | September 23, 2013](#)

This filing provides Clean Coalition comments on the Preliminary Reliability Plan for the Los Angeles Basin and San Diego.

[CPUC | Clean Coalition Opening Comments on Energy Storage Proposed Decision | September 23, 2013](#)

This filing provides the Clean Coalition's opening comments on energy storage proposed decision.

See the Clean Coalition [website](#) for additional regulatory filings.

About the Clean Coalition

The Clean Coalition is a nonprofit organization whose mission is to accelerate the transition to local energy systems through innovative policies and programs that deliver cost-effective renewable energy, strengthen local economies, foster environmental sustainability, and provide energy resilience.

Society Henry G. Houghton Award and the 2013 American Geophysical Union Ascent Award. In 2009, Dr. Jacobson co-authored a *Scientific American* cover story on how to meet global energy needs with wind, water, and solar power. Dr. Jacobson's Stanford team subsequently developed comprehensive plans for the United States, the State of New York, and the State of California to be powered by virtually 100% renewables. He has also served on the Energy Efficiency and Renewables Advisory Committee to the U.S. Secretary of Energy.



Dr. Jacobson holds a B.S. in Civil Engineering with distinction, an A.B. in Economics with distinction, and an M.S. in Environmental Engineering from Stanford University. He received an M.S. in Atmospheric Sciences in 1991 and a PhD in Atmospheric Sciences in 1994 from UCLA. He has been on the faculty at Stanford since 1994.

Clean Coalition partners with Power Over Energy

The Clean Coalition is pleased to announce its partnership with Power Over Energy, an energy literacy initiative focused on educating, empowering, and motivating consumers to make smart decisions about electricity use.

The initiative is backed by a coalition of business, nonprofit, and government organizations united in the desire to increase awareness about the wide-reaching impacts of current energy consumption, the benefits of energy efficiency, and the importance of modernizing the power grid.

As a partner organization, the Clean Coalition will share lessons from proven policies and demonstrated solution with Power Over Energy's vast online network. This new forum will support the Clean Coalition's mission accelerating the transition to local energy systems through innovative policies and programs that deliver cost-effective renewable energy.

To learn more about the Power Over Energy campaign, visit www.poweroverenergy.org.

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