Chicago Climate Action Plan
Strategy 2: Clean and Renewable Energy Sources

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Environmental Law & Policy Center
Climate Change Solutions for U.S. and German Cities
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# Renewable Energy Working Group (REWG)

## Working Group Members

**Chairs:** Suzanne Malec-McKenna, Howard Learner

- Said Al-Hallaj, SunPhocus
- Travis Bradford, Prometheus
- Daniel Cheifetz, Indie
- John Conley, SunPower
- Andy Cukurs, Suzlon
- Peter Duprey, ACCIONA
- Declan Flanagan, Lincoln Renewable
- Dick Munson, Recycled Energy
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- Robert Graham, Jenner & Block
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- Michael Polsky, Invenergy
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- Chuck Shanabruch, Clean Energy Resource Group
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## Steering Committee

- Suzanne Malec-McKenna, DOE
- Michael Collins, Bain & Company
- Howard Learner, ELPC
- Dennis Vicchiarelli, WBC

## Project Team

- Environmental Law & Policy Center
- Chicago Department of Environment
- Bain & Company
- Center for Neighborhood Technology

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Protecting the Midwest’s Environment and Natural Heritage
Clean & Renewable Energy Sources Strategy - Chicago Option Set

Centralized generation
(in front of the meter)

Distributed generation
(behind the meter)

Leverage the
IL Renewable Portfolio Standard

Build renewable energy

Buy renewable energy

Build clean & renewable energy

Buy renewable energy

Protecting the Midwest's Environment and Natural Heritage
2020 Emission Reduction Targets

IL RES Implementation and Chicago DG (High Penetration)
GHG Reductions 2009-2020

- Implementing the IL RES
- CHP
- C&I Retrofits
- Solar PV
- C&I Retrofits
- Geothermal
- C&I Retrofits
- Solar PV
- Residential Retrofits

Distributed Generation in Chicago

Full Implementation of the IL RES

Protecting the Midwest’s Environment and Natural Heritage
Architecture of Recommendations

State Policy Advocacy

**Focus on Utility-Scale Generation**

Full Implementation of the Illinois Renewable Energy Strategy (RES)

- Support a graduated solar “ramp-up” schedule to ensure the solar component of the RES (6% in 2015) is achieved at reasonable cost.
- Support a REC procurement process that keeps compliance costs low and maximizes in-state energy purchases – *long term contracts*.

**Focus on Distributed Generation**

- Net Metering – Support expanding the size of facilities eligible for retail-to-retail rate net metering from 40KW to 2MW.
Chicago Distributed Generation
Catalyze Pathbreaking “Marquee” Projects

• **Catalyze path-breaking, high-profile “Marquee” projects** to create replicable implementation blueprints.
  – Convene stakeholders and identify innovative projects
  – Provide technical assistance
  – Help assemble attractive financing packages
  – Eliminate logistical barriers
  – Help train Chicago’s workforce and educate the public
  – Publish and disseminate project blueprints and assistance packages to high-impact sectors
• **Target high-impact sectors:** commercial, industrial, institutional and multi-family residential

• Apply project blueprints and assistance packages developed through the Marquee Project Initiative

• Integrate renewable energy requirements into the City’s Green Matrix program and other existing initiatives

• Build awareness among key decision makers
• **Lay the groundwork for mass market penetration** of clean and renewable energy sources.
  
  - Assess the viability of adopting local regulations and code changes. Evaluate and consider adopting the following:
    
    • A voluntary property-assessed clean energy (PACE) financing program designed to alleviate the barrier of up-front costs
    
    • Energy efficiency and CHP/renewable energy feasibility assessment requirements, triggered at the point-of-sale
    
    • Building energy code amendments that would require new or substantially renovated buildings to supply some portion of their energy needs through distributed generation
  
  • Reduce logistical barriers (permitting)
  
  • Protect investments (solar access)
Projected 2020 GHG Reductions

IL RES Implementation and Chicago DG (High Penetration)
GHG Reductions 2009-2020

- Implementing the IL RES
- CHP
- Solar PV
- Geothermal C&I Retrofits
- Solar Thermal C&I Retrofits
- Solar Thermal Residential Retrofits
- New Construction C&I
- New Construction Residential

Distributed Generation in Chicago

Full Implementation of the IL RES

Protecting the Midwest’s Environment and Natural Heritage
<table>
<thead>
<tr>
<th>Scenario</th>
<th>Retrofit Sector</th>
<th>Technology</th>
<th>Penetration Assumptions</th>
<th>Estimated reduction MMTCO\textsubscript{2}</th>
<th>Installed Capacity</th>
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<tbody>
<tr>
<td>High</td>
<td>Residential (1,2,3 family)</td>
<td>Solar Thermal</td>
<td>5% or 36,290</td>
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<td>CHP</td>
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<td>Medium Penetration Scenario Total</td>
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<td>Low</td>
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<td>CHP</td>
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<td>50 MW</td>
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<td>Low Penetration Scenario Total</td>
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Explore Building Code Changes

High Market Penetration Scenario Assumptions:

• 50% more efficient buildings
• 35% of energy consumption from zero carbon DG
• 90% penetration rate for new construction
Aggressive Implementation Timeline

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### Advocacy Recommendations

- Advocate for long-term contracts for REC procurement
- Support amendments to rate-impact caps
- Support new transmission capacity

- Advocate for interim targets for the solar carve-out
- Advocate for interim targets for a REIG market
- Advocate for amendments to IL’s net metering provisions
- Work to identify and correct specific interconnection problems within Chicago’s network grid
- Support efforts to integrate CHP into the IL EEPS
- Support efforts to integrate solar hot water into Illinois' natural gas efficiency programs
- Advocate for clean energy-friendly tariff design at the ICC
- Continue to participate in efforts to develop smart grid infrastructure
- Investigate and evaluate standard offer contracts for DG

### Direct Action Recommendations

#### Catalyze path-breaking, high-profile “Marquee” projects

- Assemble stakeholder group and identify marquee projects.
- Develop financing packages to enable implementation using catalyst funds and loan guarantees, as available from federal, state, local sources.
- Develop, package, and disseminate project blueprints high impact sectors, as described below.

#### Create a Renewable Energy Manager Position within Chicago DOE

- Establish a community, decision-making and accountability structure
- Maximize the amount of Chicago-sourced clean & renewable energy procured by the City to meet 20% target. Bundle renewable installations with energy-efficiency upgrades of municipal facilities.
- Create a Renewable Energy credit purchase program to allow Chicago residents and businesses to invest directly in Chicago-sourced renewable energy.
- Increase awareness among target sector consumers by sponsor roadshows for important sector forums.
- Lay the groundwork for mass market penetration

- Assess the viability of adopting local regulations and code changes to accelerate penetration of solar & renewable energy. Evaluate and consider adopting the following:
  - A voluntary property-assessed clean energy financing program designed to alleviate the barrier of up-front costs.
  - Energy efficiency and C&RG renewable energy feasibility assessment requirements, targeted at the point-of-sale.
  - Building energy-code amendments that would require every new or substantially renovated building to supply a portion of their energy needs through DG.
  - Adopt a solar access protection ordinance.
  - Integrate renewable energy requirements into the City’s Green Matrix program.

### Reporting Requirements

Submission of progress reports. Metrics: clean & renewable energy installed capacity by sector and technology, MMCO2e reduced.

### Administrative Recommendations:

- Create a Renewable Energy Manager Position within Chicago DOE
- Establish a communication, decision-making and accountability structure
- Track progress
- Make adjustments
Thank You!

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