Bringing more Americans safe, affordable, sustainable clean energy since 1982.
More than 1.2 million homes and businesses in the U.S. are now powered with solar energy as a result of IREC’s national leadership to advance best practices that make clean renewable energy accessible and affordable for more Americans.

Policymakers in nearly every state rely on IREC’s independent expertise and decision-making tools to advance smart, proactive policies that benefit energy consumers and support strong markets.

More consumers are empowered with the tools they need to navigate and understand the solar process through IREC’s uniquely independent Be Solar Smart Consumer Checklist and Consumer Clean Energy Bill of Rights.

The bar is raised for education and job-ready training in clean energy and allied industries as a result of IREC’s national leadership on workforce quality standards development and credentialing.
More than 300,000 firefighters nationwide have access to online and in-person solar training to support confident, swift decision-making in an emergency situation where solar technology is present.

Thousands of local building and electrical code officials are adding skills to more efficiently issue solar permits, which ultimately translates to consumer savings.

Hundreds of colleges, industry training centers and veteran solar training programs teach to best practices for high quality solar training developed by the IREC-led Solar Instructor Training Network (SITN).

Academia, industry and government are working together to train the next generation of electric utility professionals for increased renewable energy on the electric grid of the future.

“These transformative results are built upon IREC’s foundational work shaping the nation’s clean energy future since 1982.”

Larry Shirley, IREC Board Chair
I have yet to see the Interstate Renewable Energy Council shy away from any barrier or battle. For 35 years, IREC’s tough hide and reasoned outlook has tackled long-term, entrenched brick walls, as well as easier-to-fix corrections to move renewable energy from the sidelines into the mainstream.

While sometimes tempted to stretch boundaries, IREC follows certain themes and targets to keep to a focused strategy capturing the basic principles of relevancy, inclusiveness and open communication channels.

When IREC sat at the lead table creating the PV-COMPACT in 1993, we billed the interaction of utilities, regulators, industry, consumer advocates and state governments as a collaboration. In hindsight, what it did was bring collaborative communication to these often adversarial groups and created the forum to understand diverse views and debate such rules as net metering. We had some heated discussions, but they were more often over drinks and dinner rather than the formality of a board or hearing room. Today, IREC continues to engage stakeholders to ensure a realistic understanding and stronger resolution to issues and actions.

When IREC convened the lead table building a workforce quality-assessment foundation through credentialing, we insisted that all stakeholders be involved. This was not easy and often divergent constituencies and strong feelings delayed timelines, but ultimately resulted in progress. Industry, unions, governments and practitioners butted heads, and competency standards prevailed. Today consumers can use trusted credentialing schemes to make wise purchasing decisions.

One of IREC’s earliest challenges was to reframe the value and understanding of renewable energy from the technical theater into communities of users. Our Workshop-In-A-Box and Going Solar campaigns gave engaging and informative show-and-tell tools to parks, neighborhoods and schools so that solar wasn’t a distant technology but a down-to-earth, street-smart solution.

Limited resources are common in the nonprofit world. Couple tight budgets with the need for door-to-door state action and a resource allocation conflict arises. The publication of model rules and policies is an effective way to addresses this challenge. IREC has used the “model” method many times – for net metering, interconnection, storage, and community solar. Consider what it takes to put together a best practice as a model: it’s a two-way street combining input from the field and thought leadership. It includes stakeholder vetting. Shelf lives vary and models need updates reflecting experience and market changes. IREC proves that fair and rational models work by stretching limited resources into scalable and effective action.

An underlying thread through IREC’s history tells the ongoing story of consumer access and protection. I can’t think of any topic on IREC’s agenda that hasn’t had its core consumers. IREC has been occupied with consumer equity from its early days of credentialing and workforce competency, to fair consumer compensation for on-site generation and easy hook-up to the grid. Along with multiple scorecards rating state policies and rules, other recent outputs such as the Clean Energy Consumer Bill of Rights and the Consumer Checklist give citizens on-the-spot purchasing information.

IREC’s 35-year timeline offers an impressive list of impacts and outcomes. These measurable achievements are directly attributable to staff who apply their imagination, vigor, brain power, and verve to construct stackable blocks of policy models, workforce best practices and consumer tools. IREC has the good fortune of tapping influencers with exceptional talent. IREC has always been an easy ship to turn around, responding to changing market and political circumstances, but without losing its moral and cultural compass.

Jane Weissman was President/CEO of IREC for 22 years before stepping down in 2016. Her legendary vision, leadership and collaborative style positioned IREC as a nationally respected, independent leader in shaping our nation’s clean energy future.
Jane Weissman’s words remind us of the values that built IREC into the impactful organization we are today, with a strong and respected national presence. IREC’s mission – to increase access to sustainable energy and energy efficiency through independent fact-based policy leadership, quality workforce development and consumer empowerment – remains as critically relevant today as over the past 35 years.

In this report, you will read about some of IREC’s most important successes, framed in a list of Top 8 Results of IREC’s Impactful Leadership. And you will get a look at how our work continues to shape a clean energy future.

Today we see remarkable successes – just dreams 35 years ago. Sustainable energy sources represent 61 percent of all new electric generating capacity brought online in 2016. More than 1.3 million solar systems are now installed in the U.S., more than 1.2 million of which are residential, with 260,000 workers now employed by the solar industry. Clean energy systems are no longer small asterisks at the edge of the electricity grid. They are now central to the efficient operation of the complete grid.

But the rules and polices were developed based on low use of renewable energy technologies. They need to be updated to accommodate higher penetrations of clean energy on the electricity grid and to continue to increase consumer access. IREC is working to update these policies and develop new models so more customers can benefit from clean energy, easily, efficiently and affordably.

With political changes in Washington, we cannot assume that federal policies will encourage clean energy. Instead, state actions will determine the future growth of these technologies. This makes IREC’s historical state-based focus more critical than ever. Ultimately, individual states will make the rules and regulations that determine how easy it is for consumers to use and benefit from clean energy.

As sustainable energy use grows, the issues involved in its integration become more complex. Diverse stakeholders need to be part of the conversation in order for society as a whole to benefit. IREC is independent and not beholden to any one constituency, so we are uniquely positioned to facilitate these inclusive discussions.

IREC has worked diligently to build strong competency standards, develop quality training, and credential organizations and individuals who meet high industry-valued training standards. This work continues to be important for all sectors of the clean energy industry. And now, we see increased need for quality training in allied industries, so professionals such as electricians and local building inspectors, apartment maintenance personnel and firefighters are prepared for safe, smart interaction with solar and other clean energy technologies. Their competency in clean energy will help avoid barriers to progress, and instill consumer confidence in an industry growing so quickly.

As IREC works to implement a strong state regulatory framework and develop a skilled clean energy workforce, consumers are always front and center. We are creating easy to understand resources so they can make informed decisions, have a positive experience, and enjoy results that meet their expectations – so they get a fair deal as they invest directly in clean, sustainable energy, and as more is added to the electric grid for their use.

IREC’s transformative programs are on course toward our vision of a world powered by sustainable energy, where society’s interests are valued and protected. Our sincere thanks to our supporters, sponsors and partners who share our vision and make it possible.

Before becoming IREC President/CEO in 2016, Larry Sherwood was IREC VP/COO, instrumental in moving IREC’s mission and vision forward since joining IREC in 2002.
More than 1.2 million homes and businesses in the U.S. are now powered with solar energy as a result of IREC’s independent national leadership to advance best practice policies and state regulations that make clean renewable energy accessible and affordable for more Americans.

Addressing tomorrow’s challenges head on, IREC identifies and implements path-defining policy best practices that result in transparent, streamlined processes to connect to the grid and lower the costs of renewable energy for all ratepayers.

As a respected national expert, IREC unites diverse stakeholders to advance workable, win-win solutions that benefit people, the economy and the environment.

A leader on reform policies for fair, easier, affordable connection to the grid, IREC helped more than 30 states adopt interconnection model rules that result in a more cost-effective, streamlined process for customers.

Laying the foundation for shared renewable energy growth, IREC created the first Model Rules for Shared Renewable Energy Programs, while supporting the development of new programs and adoption of best practices in more than a dozen states.

With groundbreaking, proactive regulatory guidance on energy storage, IREC is helping to shape policies in states looking to support energy storage and optimize its benefits for consumers, utilities and the grid.

Actively engaged in five of the country’s leading grid modernization states, IREC is advancing proactive policies that will transform the electricity grid into a more flexible, resilient and clean system that benefits all consumers.

As a national leader on policies that enable solar access for low- and moderate-income energy customers, IREC is paving new pathways for equitable solar access in the country’s leading solar markets.

“The work of IREC has been invaluable in moving renewable energy policy forward in Colorado. The publications and policy guidance that IREC has provided, has been essential, particularly as we focus on pathways for low-income customers to access and benefit from renewable energy.”

Joseph Pereira, Colorado Energy Office
In 2017 IREC continues to intervene in state regulatory proceedings in multiple states and launches three new renewable energy resources for state policymakers:

**Guiding Principles for Shared Renewable Energy Programs** provides five defining elements for robust shared renewable energy programs designed to enhance opportunities for consumer empowerment and expand access to the benefits of renewable energy for millions of consumers, including low- to moderate-income consumers.

**The National Shared Renewable Energy Scorecard** is a first-of-its-kind online policy assessment tool to help diverse stakeholders evaluate components of various shared renewable energy policies, rules, and/or program designs and compare them with established national best practices.

**Charging Ahead: An Energy Storage Guide for Policymakers** is a groundbreaking resource providing guidance for policymaking and regulations to support long-term growth of advanced energy storage technologies that optimize benefits to the grid, utilities, consumers and states.

These new tools support IREC’s many foundational resources listed on p.14.

IREC’s signature model rules and best practices offer well-vetted models for states to adopt to make it easier and more affordable for consumers to benefit from clean energy, while ensuring the modern utility grid remains safe and reliable.

IREC’s regulatory program brought the first round of net metering and interconnection policies and model rules to states across the U.S., leading the way for the clean energy transformation.

Today, IREC’s growing suite of resources help more states take action more quickly, standardizing clean energy markets.

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“The resources developed by IREC have provided states with the information and training necessary to accelerate clean energy deployment. Since its inception, IREC has been integral to the advancement of renewable energy technologies and best practices throughout the U.S.”

Stacy Miller, Minnesota Department of Commerce

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#2 Policymakers in nearly every state rely on IREC’s independent expertise and decision-making tools to advance smart, proactive policies that benefit energy consumers and support strong markets.

Drawing from its extensive experience in multiple states, IREC develops thought-leading policy guides and tools informed by objective research and real-world experiences. With these fact-based tools, policymakers can tackle complex issues, from net metering and interconnection to proactive grid planning, from solar storage to solar for lower income families and underserved communities.
More **consumers are empowered** with the tools they need to understand and navigate the solar process through IREC’s uniquely independent Be Solar Smart Consumer Checklist and Consumer Clean Energy Bill of Rights.

IREC’s consumer focus on fair and affordable clean energy policies enables a positive consumer experience, which continues to drive exponential industry growth and greater adoption of game-changing new technologies.

With more than 1.2 million residential solar installations now in the U.S., more consumers are sitting down with solar contractors and salespeople — facing unknown terminology, rules and conditions, and decisions.

IREC’s consumer protection tools empower consumers to Be Solar Smart so they enjoy a safe, fair, affordable solar installation, building consumer confidence in the evolving clean energy market.

**Clean Energy Consumer Bill of Rights** – guides government and other oversight organizations on consumer protection practices regarding safety, warranties, contractual transparency, advertising and privacy.

**Resources** – where to find additional, detailed information on specific policies and practices a consumer may encounter when exploring clean energy technology.

**Be Solar Smart Consumer Checklist** – step-by-step guide simplifies the solar process, with questions to ask and facts to consider to secure a safe installation and a fair deal, protecting a consumer’s investment.

**In 2017**

IREC will continue to work with the solar industry, consumer advocates and direct-to-consumer outlets to put these and other consumer protection tools into the hands of more solar installers, local governments and consumers exploring solar.
I REC’s national leadership in workforce
development lays a foundation for the clean
energy economy through training standards and
credentials that foster a high quality workforce.

An ANSI-accredited standards developer
with a rigorous credentialing awards process,
I REC accredits clean energy training providers
and awards certifications for clean energy
instructors and master trainers. Credential holders
demonstrating them exemplify the very best practices, described in
I REC’s industry-validated, competency-based
national standards for technical content and
administrative/teaching practices.

More than 170 I REC credentials are held by training
organizations and instructors nationwide.

Beyond clean energy, I REC’s credentialing
expertise is expanding to other industry sectors
nationally. I REC is leading the expansion of
“micro-credentials” to document add-on skills
related to a worker’s primary job, such as an
electrician’s understanding of solar technology or
an apartment maintenance manager’s knowledge
of energy efficiency.

“If market growth in the solar sector is
to continue in a safe and sustainable
way, quality workforce training for
industries that touch solar is imperative
in order to enhance their expertise.”

IREC President and CEO Larry Sherwood

In 2017
Partnering with the National Apartment Association’s Education
Institute (NAAEI), I REC is developing a micro-credential
program for apartment maintenance technicians to learn and
certify their knowledge for planning, procuring and managing
energy efficiency upgrades and retrofits in apartments. The
micro-credential builds on an existing larger, well-established
apartment maintenance credential.
Exponential growth in solar means more firefighters are coming into contact with solar installations when responding to emergencies.

Partnered with the International Association of FireFighters (IAFF), IREC created a unique, interactive online solar training specifically for firefighters, with 14 scenario-based video tutorials. The no-charge online format makes the training accessible, so more firefighters learn about responding to solar-equipped structures.

“In PV systems are becoming more prevalent in our communities and firefighters need to understand how to safely work around them. This program provides awareness to the hazards and the operational procedures required to shut down the systems safely . . . and will benefit firefighters around the world.”

Derek Alkonis, Los Angeles County Fire Department

More than 300,000 firefighters nationwide have access to online and in-person solar training to support confident, swift, safe decision-making in an emergency situation where solar technology is present.
Local building code officials are encountering solar technologies more frequently and in more communities. To be most effective and efficient when issuing solar permits, and to ensure safety, they need to know more about plan reviews and inspections for structures with solar.

Partnering with the International Code Council’s Solar Rating and Certification Corporation (ICC-SRCC) and the International Association of Electrical Inspectors (IAEI), IREC launched an updated Photovoltaic (PV) Online Training for Code Officials in 2016, featuring seven lessons that cover key points and common installation mistakes. A “capstone” lesson then offers a game-based 3D model for roof-mounted residential PV installation.

While originally designed for code officials, the training is increasingly used by electrical and general contractors, PV installers and others who can benefit from the self-paced, online format, with content designed by a prestigious working group of subject matter experts.

More than 5,000 code officials have engaged in the online training since it launched four years ago.

“I was impressed by the information about the importance of even the smallest part used for solar installations. Sometimes the training we get for various codes cannot begin to cover all aspects of or possibilities for a given job. This course helps to fill in the gaps.”

Linda Hansen, Tehama County (CA) Building and Safety

In 2017
New in-person training specifically for solar plan reviews is scheduled for local code officials at more than 45 locations across the U.S.
“To enable a skilled workforce to support the growth of solar deployment across America, the DOE’s Solar Instructor Training Network will support training programs at community colleges across the country that will assist 50,000 workers to enter the solar industry by 2020.”

President Barack Obama May 9, 2014

IREC is ensuring that our clean energy workforce is well trained to industry-validated standards — by training programs that teach the skills in demand by employers. These are key factors in closing the skills gap between education and industry.

In just five years, IREC partnered with 579 community colleges and training programs across the country; provided training to more than 1,000 certified solar instructors; and 35,882 students received training nationwide, all through the Solar Instructor Training Network (SITN). IREC was national administrator of the SITN, a U.S. Department of Energy SunShot Initiative from 2010-2015.

Today, thousands of veterans also have new solar skills that bolster prospects for long-term employment because solar technologies were incorporated into their existing education and training. IREC’s expertise led the development of the first solar training courses at military bases in 2015, when a pilot program was launched by the U.S. Department of Energy to train military personnel leaving the service.

In 2017
IREC’s trailblazing accomplishments through the SITN will continue to shape solar training programs for students, professionals and veterans across the U.S., as expanded national initiatives build on the successful foundation of the SITN.

#7 Hundreds of colleges, industry training centers and veteran solar training programs teach to best practices for high quality solar training developed by the IREC-led Solar Instructor Training Network.
Academia, industry and government are working together to train the next generation of electric utility professionals for increased renewable energy on the electric grid of the future.

GEARED is filling an urgent need for increased power system education, training and research for the electric grid of the future — with more distributed renewable energy and smart grid technologies. As national administrator, IREC unites industry, academia and government, creating a transformative network for learning, growth and leadership empowerment for tomorrow’s power engineering ideas.

- Building and inspiring the next generation of power system engineers.
- Educating current utility professionals for distributed generation and smart technologies.
- Ensuring the utility industry has a skilled workforce for future employment needs.

3 GEARED Consortiums represent universities, utilities and other industry partners:

- FEEDER Foundations for Engineering Education for Distributed Energy Resources led by University of Central Florida
- MARMET Mid-America Regional Microgrid Education Training Consortium led by University of Missouri Science and Technology
- GridEd The Center for Grid Engineering Education led by Electric Power Research Institute (EPRI)

“There is something exciting and challenging about power systems — about all the different energy sources and how this knowledge can lead to a better world for all of us.”

Monica Mercado-Oliveras, graduate student, University of Puerto Rico, Mayaguez

In 2017
These 2016 numbers will continue to grow.

- 15,590 students enrolled in GEARED-supported courses
- 511 GEARED-supported courses taught
- 64 new courses developed through GEARED support
- 13 existing courses modified through GEARED support
The nation’s clean energy economy is shaped by IREC’s fact-based research and expert insight on evolving clean energy regulatory and workforce development issues, trends and best practices.

As the clean energy industry experiences exponential growth, IREC remains focused on the consumer. Whether shaping state energy regulations to make new technologies accessible and affordable, or creating best practices for educating and credentialing clean energy workers, IREC’s independent contributions and insights serve to improve the quality and value of the clean energy experience for all.

**REGULATORY PROGRAM**

- **Shared Renewable Energy for Low- to Moderate-Income Consumers:** Policy Guidelines and Model Provisions – information and tools for shared renewables programs specifically designed to provide tangible benefits to low- and moderate-income (LMI) individuals and households.

- **Model Rules for Shared Renewable Energy Programs** – details components and considerations of shared renewables program design to assist stakeholders in developing programs that broaden renewable energy access to more consumers.

- **Deploying Distributed Energy Storage** – provides guidance and independent insight on the near-term steps states can take to support distributed energy storage, capture its full benefits and promote healthy markets.

- **State Shared Renewable Energy Program Catalog** – one-stop-shop for state programs across the country provides a detailed breakdown and description of program design components and compares state renewable energy programs alongside each other.

- **Easing the Transition to a More Distributed Electricity System** – landmark report on the national movement toward a more modern electricity grid offers five insightful approaches for state utility regulators to consider as they facilitate the transition through rules and regulations that govern the electricity system and electric utilities.

- **Model Interconnection Procedures** – these model rules reflect national best practices to facilitate the streamlined, safe and efficient interconnection of distributed energy technologies to the utility grid.

- **Integrated Distribution Planning** – a cutting-edge concept paper, developed in conjunction with Sandia National Laboratories, presents a more proactive approach to grid planning to support more robust, transparent, and forward-thinking integration of distributed energy resources on the grid.

- **Solar Market Pathways Community Solar Toolkit** – a suite of resources developed in partnership with the Institute for Sustainable Communities to guide development and investment in community solar, while equipping diverse stakeholders with tools to navigate policy issues, program design and implementation, as well as consumer and community engagement.

**WORKFORCE DEVELOPMENT**

- **Solar Career Map** – a highly interactive tool designed for workforce professionals, educators, policymakers and job seekers. It explores an expanding universe of solar-energy occupations, describing diverse jobs across the industry, charting possible progression between them, and identifying the high-quality training necessary to do them well.


- **Micro-Credentialing Case Study** – details a framework developed for the first clean energy micro-credential pilot, designed to add a new credentialing option for certified energy auditors, to expand their home health assessment expertise to include energy efficiency.


- **A Guide to Preparing Solar Permitting Checklists** – a brief handout to introduce permitting checklists to municipal permitting staff, and tips on drafting effective versions of the checklist for communities.

- **Field Inspection Guidelines for PV Systems** – details the most important aspects of a field inspection which can be performed in as little as 15 minutes, complete with illustrative pictures on the specific details of each step.
About the Interstate Renewable Energy Council

IREC is an independent national not-for-profit organization that envisions a world powered by clean sustainable energy, where society’s interests are valued and protected. IREC galvanizes nationwide adoption of sustainable and efficient energy through fact-based policy leadership, quality workforce development and consumer empowerment. Our work over the past 35 years propelled the incredible clean energy growth trends we are seeing today — building a strong foundation of clean energy state and national policy best practices and quality workforce training standards and programs.

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**Vision** - A world powered by clean sustainable energy where society’s interests are valued and protected.

IREC increases access to sustainable energy and energy efficiency through independent fact-based policy leadership, quality workforce development and consumer empowerment.

www.irecusa.org