



THE ACADEMY OF ELECTRICAL CONTRACTING

PAPER PRESENTED BY FELLOW
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Net Zero and Beyond:
Utilizing Your Training Center as a
Business Development Tool

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On June 3, 2016, NECA Los Angeles County and IBEW Local 11 officially dedicated the nation's largest net zero commercial building retrofit, their Net Zero Plus™ Electric Training Institute. As was stated in a press release distributed by the NECA chapter and local union, the 144,000 square foot educational facility trains approximately 1,500 electrical apprentices and thousands of journeymen annually for careers at the forefront of the electrical industry. The facility is a demonstration center and a living laboratory on advanced and emerging clean energy technologies, and it showcases the future of smart energy efficiency design, micro grid system integration, energy storage solutions, building resiliency in the wake of natural disasters or grid interruptions, and a myriad of integrated electrical technologies and controls.

The dedication program, which was attended by more than 400 Los Angeles government, business, and community leaders featured Los Angeles Mayor Eric Garcetti, Speaker of the California State Assembly Anthony Rendon, Rear Admiral Mark Rich, Commander of USN Region Southwest, Center for Sustainability CEO Len Hering, RADM-USN, Ret., White House Associate Director for Natural Resources, Energy & Science Ali Zaidi, former Chairman of the Federal Energy Regulatory Commission Jon Wellinghoff, and Los Angeles County Supervisor Hilda Solis.

"The International Brotherhood of Electrical Workers Local 11 and the Los Angeles National Electrical Contractors Association formed a partnership to develop the NZP-ETI with the mission to provide world-leading electrical training and have nationally recognized programs of excellence in training," said Marvin Kropke, Business Manager of IBEW Local 11.

"Through this partnership and in cooperation with utilities and private companies, IBEW Local 11 and LA/NECA are pioneering the Net Zero Plus program to transform commercial markets by employing the newest electrical technologies and training the most skilled workforce in the United States."

"Many buildings in Los Angeles were developed prior to California state energy codes and consume far more energy than is actually needed. This NZP-ETI is a great example of a collaborative model for building high performance and net zero buildings by providing the building industry a roadmap of how to design, build, operate, and evaluate the advanced buildings," commented Los Angeles Mayor Eric Garcetti.

The energy, environmental, economic and community benefits of this multi-million dollar retrofit includes:

- 51% reduced total energy consumption
- 185,000 KWh/yr. more energy produced than consumed
- 520 metric tons/yr. reduction of CO2
- 1,500 individuals trained each year for long term careers in the energy industry
- A resource for architects, developers, and building owners to learn about the integration of advanced technologies
- Enhanced grid stability and improved natural disaster and emergency response solutions
- NZP-ETI maintains a goal of 50% veteran enrollment in each new apprenticeship class as well as a comprehensive outreach program encompassing disadvantaged communities throughout Los Angeles County

“We are preparing the electrical industry of the future with transformational training to help them serve their customers through energy cost reduction strategies, strategies for realizing new revenues, managing costs and increased reliability, investments in energy independence, and a model for achieving sustainability goals. Our member contractors and workforce are receiving classroom education, jobsite training as well as developing integrated energy solution capabilities in renewable energy, battery storage, and micro grid technologies. This state-of-the-art training enables our contractors and workforce to design, safely install, and maintain complex energy systems,” said Jim Willson, Executive Director of Los Angeles NECA.

The NZP-ETI will earn the International Living Future Institute’s net zero energy certification and will be verified a net zero building by the New Buildings Institute. In addition, it was built to USGBC’s LEED Gold standard.

In addition to the building retrofit and dedication event, our labor-management cooperation committee sponsored and funded a one-hour PBS documentary entitled “*Building Below Zero.*”

This documentary, which will be aired by SoCal PBS this summer, highlights the rapid changes the building and electrical industries in California and across the nation are facing. The documentary provides an overview of the process of retrofitting high performance and net zero buildings from design to execution. The documentary features interviews with high ranking officials such as Secretary of Energy Moniz, NREL Lab Director, Bryan Hannegan, Los Angeles Mayor Eric Garcetti, scientists from Lawrence Berkeley Laboratory and Stanford

Linear Accelerator as well as Rear Admiral Mark Rich, Commander of USN Region Southwest and Rear Admiral Len Hering, USN-Ret.

As you can see, our chapter, local union, and training trust committed a tremendous amount of resources in terms of time and money towards this project. The next logical question (and one we asked ourselves many times) is why? And what do you expect to accomplish?

In our jurisdiction, NECA and the IBEW have an overall positive image by construction end users, public entities, and local communities. For the past 15 years, our labor-management cooperation committee has hired several business development representatives to enhance our perception in the marketplace and to create jobs and market share. These individuals have done an excellent job in accomplishing these goals and have taken our industry to the next level in terms of innovative ways to create work opportunities.

Again, the question remains: If the industry is moving in the right direction, why do this extensive of a project, especially considering our training facility has already installed some emerging technologies including 400 kW of rooftop solar and a micro grid?

I guess the simple answer is to get to the next level. The chapter and the local union have made a commitment to control the majority of electrical work in Los Angeles County. As an industry, we believe this project, in conjunction with the focus of utilizing the training facility as a business development tool, will get us closer to achieving our goals and objectives.

I would like to interject here one of the most important points in this paper: Each market area is unique. Consequently, what is relevant

and innovative in one jurisdiction might not translate to another. We decided to pursue Net Zero because our state was moving in that direction by policy (all new commercial installations must be net zero by 2030) and, due to high energy costs, California is considered a leading market for installations of cutting edge technologies to produce, store, and reduce energy consumption. California also has ambitious legislative goals for 50% renewables and a 50% reduction of energy in all buildings by 2030. However, other markets may have other drivers.

While California is taking a leadership role in designing a more energy sustainable future, the fact is that there is a global energy revolution occurring right now and there is a lot of confusion regarding emerging technology and markets. Our training centers should reflect that, regardless of what is happening in each jurisdiction, our contractors and workforce are the subject-matter experts and energy solution providers for these new technologies.

Numerous other business development benefits can be achieved through these projects including:

1. Increased interest from building owners, engineers, academia, facility managers, public agencies (especially school districts), and legislators, to tour our training centers. In fact, Northern CA NECA Chapter and IBEW 595 have to be strategic in tour requests because of so many requests to visit their net zero facility.
2. When a specific group schedules a tour, we customize the presentation to focus on other benefits our industry provides through our training facilities. Those other benefits are often referred to in

some areas as our "best kept secrets" or, in our case, it's the "Plus" in Net Zero Plus. Some of these benefits are:

- a. We provide middle class careers (not jobs) with excellent benefits that are difficult to outsource. This theme is a home run with Republicans and Democrats this political season.
- b. We conduct outreach efforts with underserved and disadvantaged areas and we maintain a commitment to veterans.
- c. These facilities are funded primarily by contributions from contractors and IBEW members with very few government subsidies. Therefore, training expenses for apprentices and continuing education for journey level workers are minimal.
- d. These facilities function with the leadership of both labor and management trustees and in doing so, demonstrate cooperation and vision by business and labor.
- e. By observing the industry's professional commitment to technology and training, some of the lingering stereotypes of the unionized electrical construction industry are being changed.
- f. These retrofitted facilities receive increased interest from vendors and manufacturers to showcase their latest products. In our case, several have agreed to update our existing labs at substantially discounted costs.
- g. The ability to utilize the facility as "living labs" and "beta sites" for emergency technologies keeps our industry ahead of the curve in contractor and workforce training. This enables our industry to constantly bring in new user

groups for innovative tours. In fact, a critical part of the retrofit project is the installation of a conference room with display monitors that show real time energy production and usage throughout the facility.

Besides the more obvious marketing and business development opportunities listed above, this project has also been a great educational tool for our contractors in terms of economic modeling and finance/incentives. With all the various technologies incorporated on this job, there was considerable economic modeling of the cost/benefit analysis of renewables, energy storage, lighting controls, and automated demand response. Furthermore, in order to do this type of economic analysis there must be a comprehensive understanding of the customer's utility bill including tariff rates, demand charges, time of use rates, etc.

Incorporated in this modeling are also the various utility, state and federal tax credits, rebates, and incentive programs. Finally, we learned about the increased rental rates and appraised value of sustainable buildings. Knowledge and understanding of all these items is extremely valuable when discussing the costs and benefits of potential energy solutions with customers.

As with all things, there are some pitfalls mixed in with the many benefits, including:

1. The time and effort imposed on the training director. Like any construction job, these can all be consuming. Training directors are focused on all of the day-to-day facets of running a training program for apprentices and journey level electricians. The trustees must be

conscious of this and have the resources to put a team in place to assist.

2. These projects tend to be expensive; many of these newer technologies can be costly especially when they have not had the benefit of economies of scale. For example, when our trust originally installed its first solar array about 10 years ago, the cost of quality panels were over \$4/watt. With our latest expansion, the same types of panels were purchased well below \$1/watt. Similarly, the cost of batteries on our first micro grid project about four years ago was \$1,000/kWhr. The current lithium-ion batteries, which are a more efficient product, cost \$360/kWhr. The question is: How long do you wait if the costs of certain technologies are decreasing this rapidly? In the solar industry, our industry greatly benefitted by being early adapters in training and this has enabled our contractors and electricians to install millions of man-hours of work. We believe this will also be the case in the energy storage market.
3. It can be difficult to get construction financing from banks for these projects. Banks do not understand ERISA trusts, trust financing mechanisms, or even what we do in terms of training.

In conclusion, there are significant benefits and some hurdles NECA and IBEW representatives face when taking their training center to the next level and utilizing it as a business development tool. Our jurisdiction has discovered that when you showcase a state-of-the-art training facility which displays cutting-edge technology that resonates in your marketplace - combined with demonstrating our industry's commitment to quality training,

middle class careers, veterans and local community jobs, and safety – you have a winning formula and a powerful business development tool!

About Jim Willson

Jim Willson has been employed by the National Electrical Contractors Association, Los Angeles County Chapter since 1979. He has been the Executive Director for the Los Angeles County Chapter from 1992 to present.

Other Chapter responsibilities have included:

- Chairman of the Southern California IBEW/NECA Pension Trust.
- Chairman of the Southern California IBEW/NECA Health Trust.
- Chairman of the Southern California IBEW/NECA Labor-Management Cooperation Committee.
- Chief Negotiator for the Association in Collective Bargaining covering various Labor/Management Agreements.
- Management Trustee for the IBEW/NECA Electric Training Institute covering Los Angeles County. This joint labor-management training committee involves apprenticeship training, journeyman, continuing education, and safety.

Mr. Willson has been on numerous other NECA Committees including Energy Solutions, Government Relations, and Industry Safety. He has been honored with NECA's "Association Executive Distinguished Service Award", the Lew Wasserman "Spirit of Democracy Award" from the Miguel Contreras Foundation, and is a Fellow of the Academy of Electrical Contracting, the highest honor given by the National Electrical Contractors Association.

Mr. Willson earned a Bachelor of Arts in Political Science and Economics from Denison University, and a Masters in Business Administration from the College of William & Mary.

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