

# Estimating the Need for New Electricians 2012-2021

*A Report to the National Labor-  
Management Cooperation Committee*

The Construction Labor Research Council

## Introduction

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One of the most important aspects of strategic planning is a clear understanding of workforce composition, needs and projections. Quantifying these workforce characteristics for electricians is a valuable tool for management and labor to utilize in optimizing future business opportunities in the unionized electrical industry.

This study provides an overview of past IBEW employment patterns and estimated projections from 2012 – 2021 regarding the need for new electricians. For many years, the NECA-IBEW National Labor Management Cooperative Committee (NLMCC) has commissioned the Construction Labor Research Council (CLRC) to conduct this annual study. This report represents the 2013 version of the study.

There are two major sections to the report:

**Background** – Provides a synopsis of employment by IBEW district and total, including change in employment (percent and number of workers), as well as age distributions and demographic information about the departure age of IBEW workers. These data also support statistical analyses used to make projections about future worker needs.

**Projected Needs for New Electricians** – Offers estimated projections for IBEW employment from 2012 – 2021, by district and total. Projections are broken out into replacement and growth categories in order to provide additional insight into IBEW employment patterns, past and future. Alternative growth models also are shown.

### Source Data

The primary databases used in the study came from the National Electrical Benefit Funds (NEBF) and the Bureau of Labor Statistics (BLS) in the Department of Labor. The NEBF maintains records which track approximately 250,000 IBEW electricians by age, year, state, and other variables such as when they enter and/or leave the NEBF database. The study includes only individuals for whom contributions were made to the NEBF and whose birth year and state of residence were known. Note that this is not the same as the number of IBEW members because some people may be members without working, employed in another industry or otherwise not within the NEBF record system at the time of this study.

This study was made possible by the generous assistance of the NEBF staff in providing the needed information.

Data from BLS provide total electrician employment figures and the basis for growth projections for electricians. BLS is a respected federal agency and provides useful information commonly understood in everyday life such as the CPI and unemployment figures, as well as large data sets and complex reports for experienced researchers.

## **Interpretation of the Results**

Readers are cautioned to interpret and use this report in a prudent manner. While the analyses of the past in the report are historical and accurate, the estimated projections reflect our best professional judgment about what the future might hold. The methodology used is detailed and thorough. However, projections should be seen as tools, but not absolute truth, when planning for the future.

## **New for 2013**

Last year, in an effort to provide the IBEW, NECA and the users of this study with the best information possible, a number of improvements were made to this report, including a redesigned format, clearer color charts and graphs, more descriptive headings, and new data on IBEW worker age. This year we have added another useful chart which shows the change in IBEW worker count by age (Exhibit 7).

CLRC strives to provide NECA and IBEW with the best information possible to further promote the union electrical construction industry.

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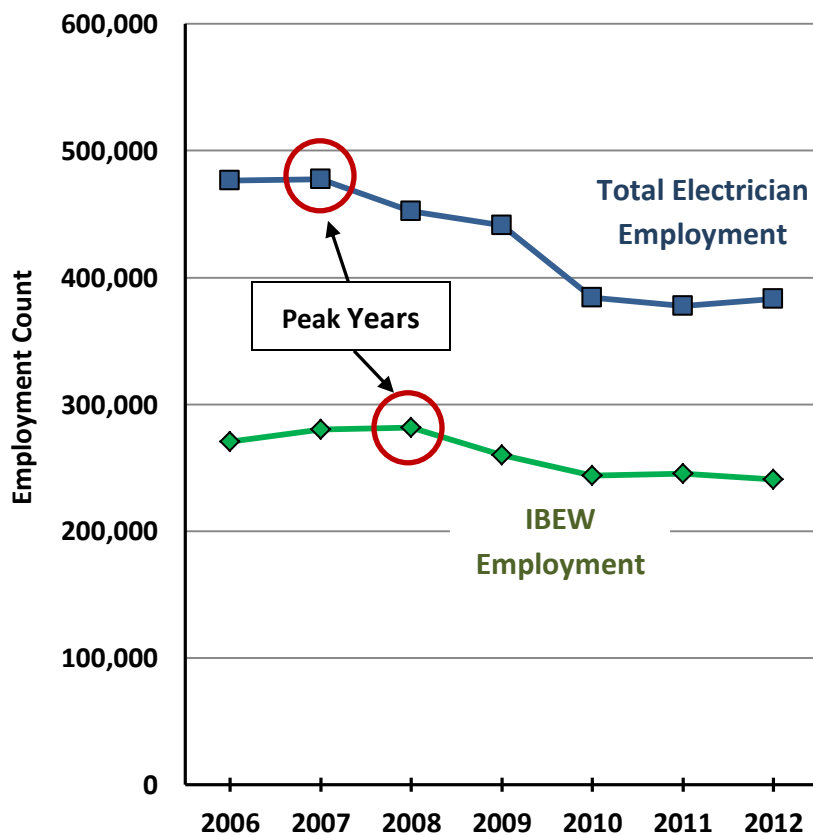
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## Background

This section provides a synopsis of employment patterns in the IBEW as a whole and for each district. These data also are referenced in the statistical computations performed to make projections about future worker needs for each district and total IBEW.

### Exhibit 1 – Electrician Employment

*IBEW and total electrician employment trend: 2006 – 2012*

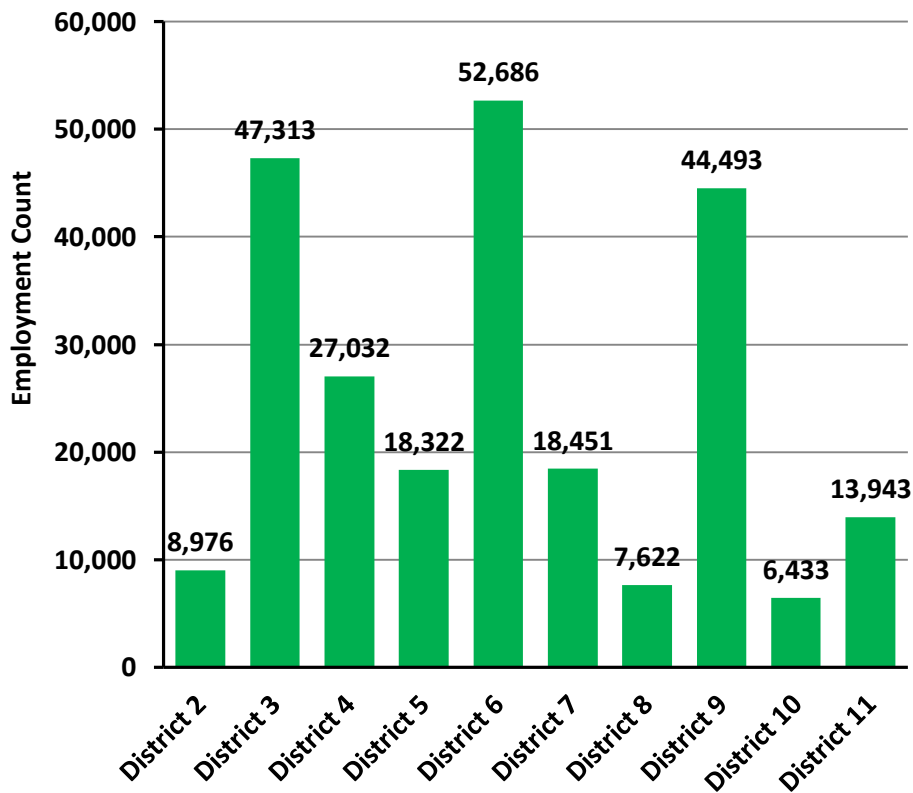


As shown in Exhibit 1, total electrician employment in the construction industry peaked in 2007 at 477,540. Employment for IBEW workers peaked a year later at 281,809. From these high points, the total electrician count has declined by 20 percent while IBEW employment has fallen by 15 percent.

These employment results present an interesting paradox: while employment has declined, market share has risen. Specifically, market share has gone from a low of 57 percent in 2006 to 63 percent in 2012 (according to the methodology used in this study), even though IBEW employment has declined during this time. This is because the total electrician employment has declined even more, as a percent, than union electrician employment.

**Exhibit 2 – IBEW Employment**

*Employment by district for the base period 2011*



Employment with the IBEW ranged from a low of 6,433 in District 10 to a high of 52,686 in District 6 (Exhibit 2). The “base year” 2011 represents the most current year for which reliable NEBF data are available (i.e., 2012 data were not fully finalized at the time this study was conducted).

**Exhibit 3 – Electrician Employment Change**

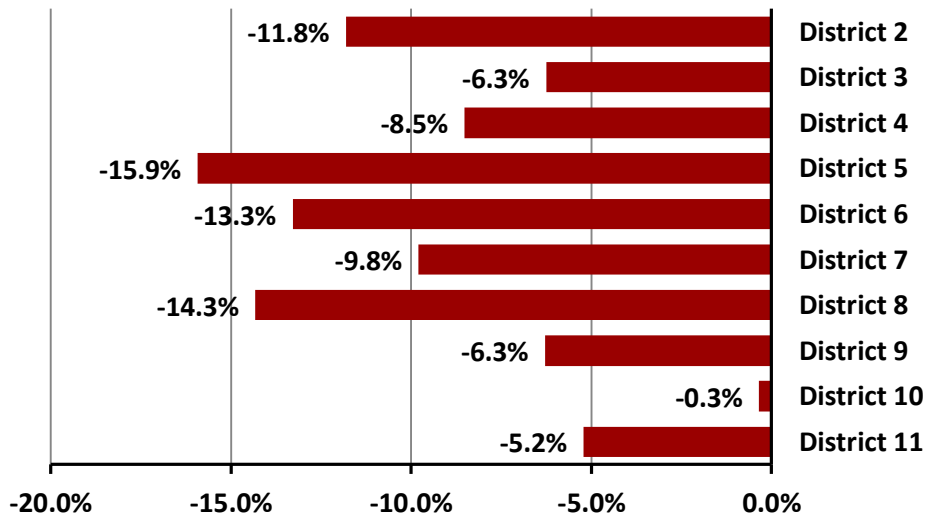
*IBEW and all electricians actual and projected average annual growth/decline*

Actual average annual IBEW employment change for the five year time period 2006 through 2011 was -1.5 percent, based on NEBF records. During this same time, the count for all electricians declined at a -2.3 percent average annual rate. However, for the most recent years analyzed, 2010 – 2011, IBEW membership actually grew by 0.6 percent. Moreover, the forecast from BLS is stronger than the recent past, with a projected 2.8 percent average annual growth rate until 2020, for a total increase of 32.1 percent for 2010 – 2020.

	Actual 2006-2011	Projected 2010-2020
<b>IBEW</b>	-1.5%	2.8%
<b>All Electricians</b>	-2.3%	2.8%

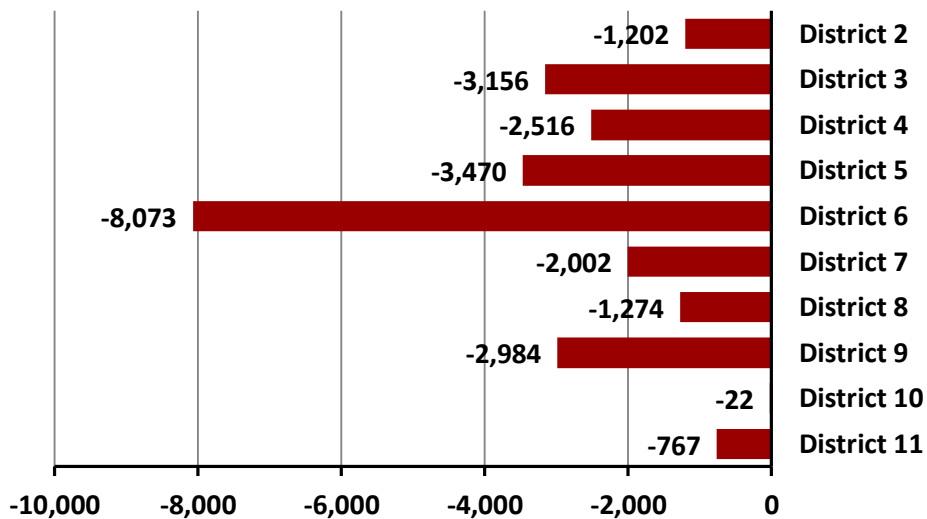
**Exhibit 4 – Percent Change in IBEW Employment**

*Net percent change in IBEW employment by district: 2006 – 2011*



**Exhibit 5 – Numerical Change in IBEW Employment**

*Net employee count change in the IBEW by district: 2006 – 2011*



As Exhibits 4 and 5 illustrate, every district had a net loss of workers from 2006 – 2011, ranging from -0.3 percent for District 10 to -15.9 percent for District 5. However, for more recent years—2010 to 2011—only four of the ten districts lost workers and the largest loss was only -2.5 percent. In fact, District 10 actually gained 6.5 percent, the largest increase during this time.

**Exhibit 6 – IBEW Worker Age**

*Age distribution of IBEW workers: 2006 and 2011*

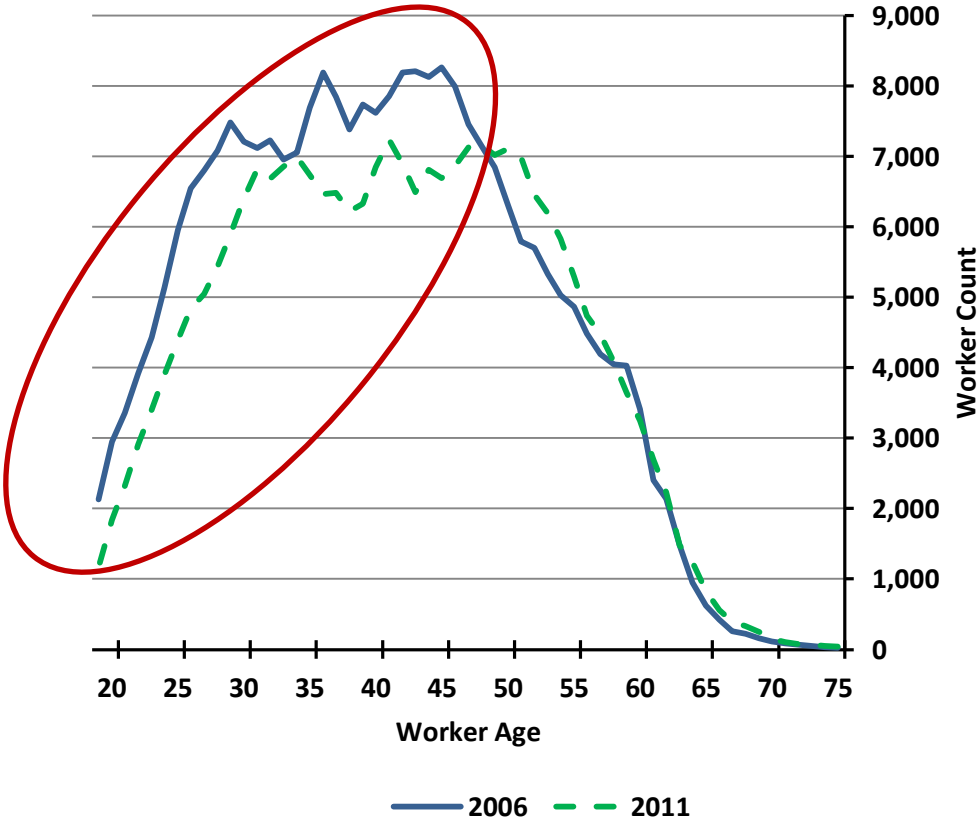


Exhibit 6 shows the distribution of IBEW workers by age in 2006 and 2011. This chart shows that there were fewer younger and more older workers in 2011 than in 2006. The average age in 2006 was 40.3 and in 2011 the average age had increased to 41.7.

**Exhibit 7 – Change in IBEW Worker Count**

*Change in IBEW worker count by worker age: 2006 – 2011*

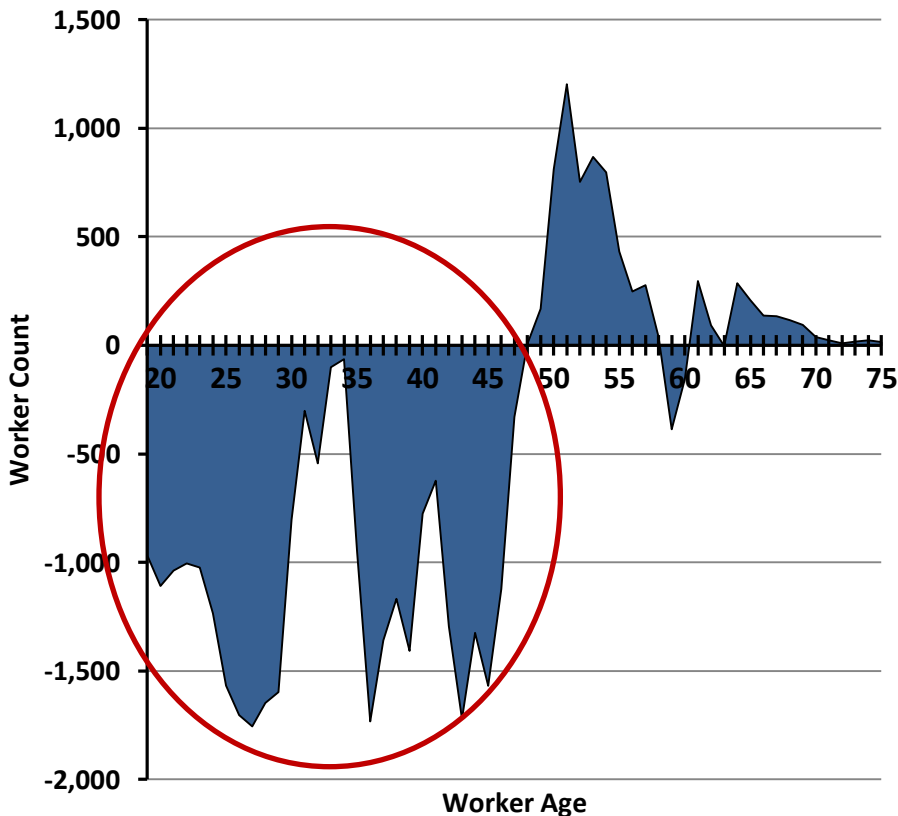


Exhibit 7 shows the change by age in the number of IBEW workers from 2006 – 2011. In other words, for each age from 19 to 75, how many workers did the IBEW add/lose during the five year span from 2006 – 2011? Analyses of the IBEW age distribution shows that the majority of worker losses occurred between ages 19 and 48, as shown by the blue areas in Exhibit 7. Increases in IBEW worker count occurred primarily in ages 49 and older.

The IBEW workforce fell by 25,310 for ages 19-75 from 2006 – 2011. Of this amount, 23,090 (91 percent) were under the age of 40. The losses in number of workers can be due to at least two reasons. First, younger workers could be leaving the IBEW. Second, fewer younger workers in 2011 could have joined the IBEW compared to 2006. Some of the losses may have been permanent while others could be temporary if workers return to the industry as the economy improves.

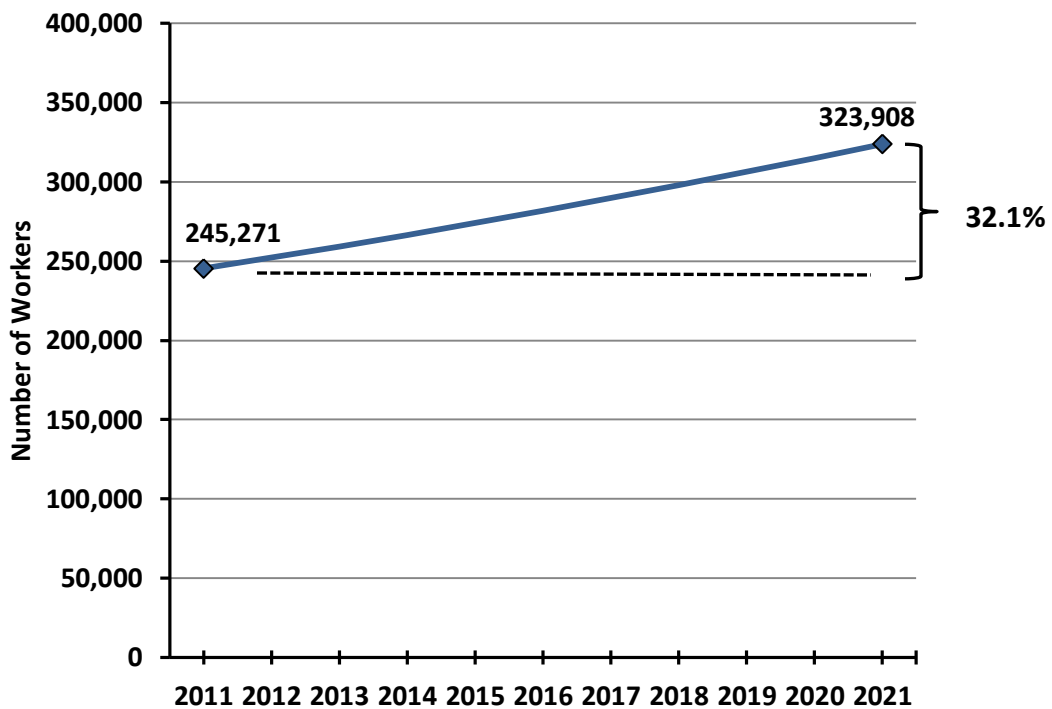


## Projected Need for New Electricians

The projected need for new electricians offers estimated projections for IBEW employment from 2011 – 2021, by district and total (based on BLS projections for all electricians). Projections are divided into replacement and growth categories in order to provide additional insight into IBEW employment patterns, past and future. Replacement needs arise when employees retire, leave the occupation, die, or otherwise depart. Growth represents increases in the marketplace due to new construction work.

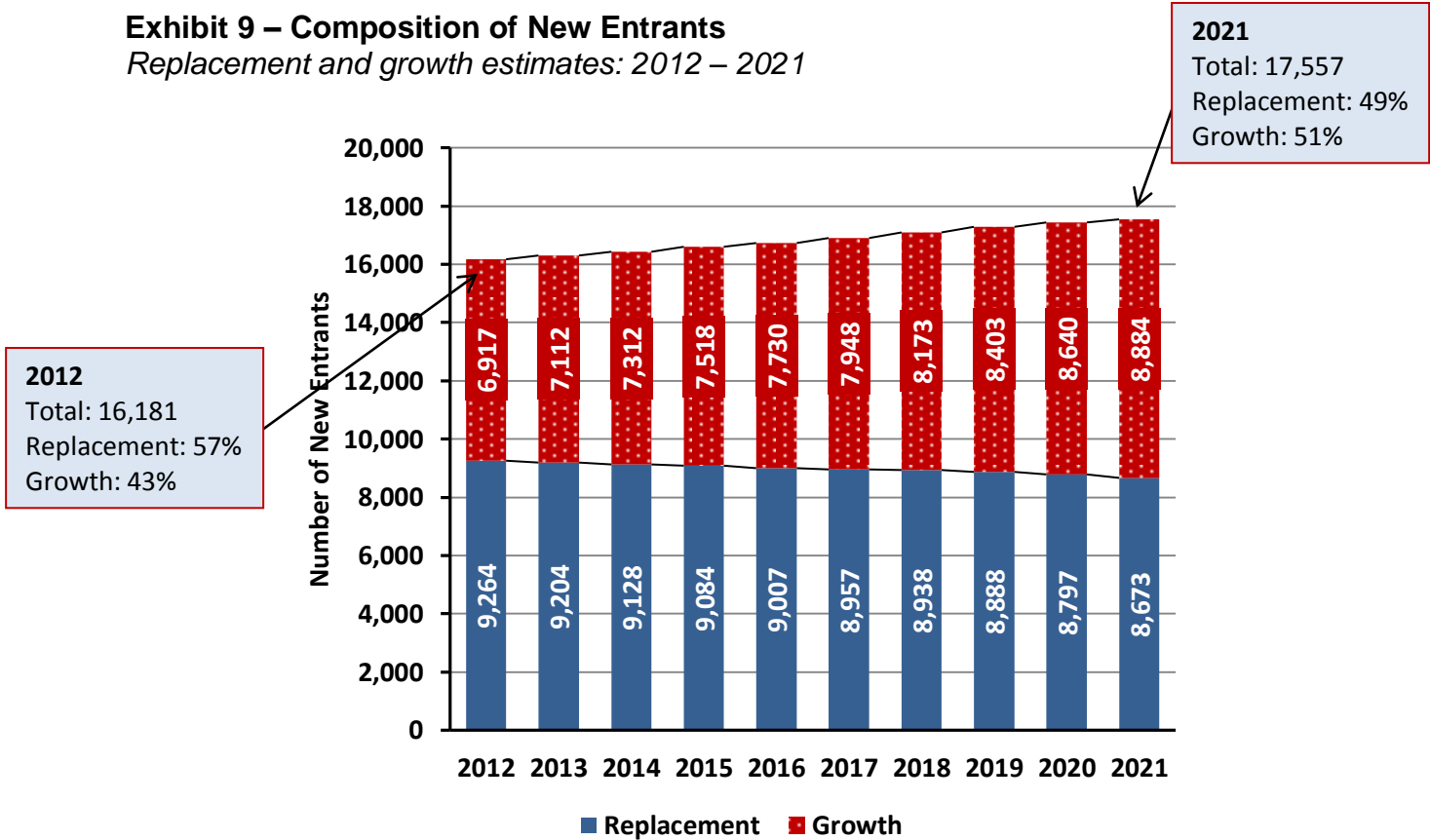
*The most significant finding is that in spite of disappointing growth during the past five years, the future looks better for electricians. The challenge remains, however, for the union segment of the electrical industry to exceed the nonunion segment in these estimated growth patterns.*

**Exhibit 8 – Employment Projections**  
*Estimated employment count for IBEW: 2011 – 2021*



The total United States electrician workforce is expected to increase by 32.1 percent from 2011 – 2021, as shown in Exhibit 8. If this growth occurs for union electricians, there will be a need for 78,637 more workers than currently are in place today. The average annual increase needed is approximately 2.8 percent for the IBEW.

**Exhibit 9 – Composition of New Entrants**  
 Replacement and growth estimates: 2012 – 2021



New entrants are needed for two reasons: 1) to replace those who leave the electrical occupation, and 2) to meet growth needs in the industry. As shown in Exhibit 9 above, in 2012, 16,181 new entrants will be needed to meet the replacement and growth needs of the union electrical industry and by 2021, 17,557 new entrants will be needed.

Interestingly, the proportion of people in these two categories changes over time. To illustrate, in 2012, over half (57 percent, 9,264) of new entrants will be for replacement and 43 percent (6,917) will be due to growth. By 2021 the growth proportion of the new entrants is anticipated to increase from 43 percent to just slightly over half, 51 percent (8,884 workers), and the replacement proportion will fall to slightly less than half (8,673). In other words, the growth and replacement components of new entrants needed for the union electrician occupation are moving in opposite directions.

This shift in the ratio of replacement to growth for new entrants is due to replacement projections based on the shrinking population of the IBEW since 2008. In other words, as the workforce becomes smaller, the number of replacement workers needed becomes fewer (even if departures as a percent remain the same over time). These figures also indicate that approximately 6 percent of the workforce will need to be replaced *each year*.

## Exhibit 10 – Employment Projections by IBEW District

*Estimated total employment for IBEW districts: 2011 – 2021*

District	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
District 2	8,976	9,229	9,489	9,757	10,032	10,315	10,606	10,905	11,213	11,529	11,854
District 3	47,313	48,647	50,019	51,430	52,880	54,371	55,904	57,481	59,102	60,769	62,482
District 4	27,032	27,794	28,578	29,384	30,213	31,065	31,941	32,841	33,768	34,720	35,699
District 5	18,322	18,839	19,370	19,916	20,478	21,055	21,649	22,260	22,887	23,533	24,196
District 6	52,686	54,172	55,699	57,270	58,885	60,546	62,253	64,009	65,814	67,670	69,578
District 7	18,451	18,971	19,506	20,056	20,622	21,204	21,801	22,416	23,048	23,698	24,367
District 8	7,622	7,837	8,058	8,285	8,519	8,759	9,006	9,260	9,521	9,790	10,066
District 9	44,493	45,748	47,038	48,364	49,728	51,130	52,572	54,055	55,579	57,147	58,758
District 10	6,433	6,614	6,801	6,993	7,190	7,393	7,601	7,815	8,036	8,263	8,496
District 11	13,943	14,336	14,740	15,156	15,584	16,023	16,475	16,939	17,417	17,908	18,413
<b>Totals</b>	<b>245,271</b>	<b>252,188</b>	<b>259,299</b>	<b>266,612</b>	<b>274,130</b>	<b>281,860</b>	<b>289,809</b>	<b>297,982</b>	<b>306,385</b>	<b>315,025</b>	<b>323,908</b>

Each IBEW district is projected to grow by 32.1 percent by 2021, *assuming union growth parallels total industry forecasted growth* (Exhibit 10). This translates to a net increase of 78,637 more workers for the IBEW. However, in reality there will be a need for many more than 78,637 new workers because there will also be replacement needs. In other words, both growth and replacement figures need to be considered when planning for future workforce needs.

## Exhibit 11 – New Entrants Projections by IBEW District

*Estimated number of new entrants for IBEW districts: 2012 – 2021*

District	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
District 2	636	634	634	638	638	646	655	665	668	671
District 3	2,792	2,828	2,870	2,925	2,990	3,072	3,154	3,242	3,317	3,388
District 4	1,702	1,729	1,756	1,784	1,811	1,834	1,855	1,876	1,899	1,912
District 5	1,447	1,432	1,410	1,396	1,378	1,357	1,346	1,338	1,325	1,309
District 6	3,783	3,814	3,826	3,848	3,868	3,888	3,915	3,939	3,940	3,945
District 7	1,283	1,284	1,285	1,288	1,291	1,289	1,299	1,305	1,311	1,313
District 8	597	596	593	588	583	587	584	579	572	565
District 9	2,715	2,762	2,810	2,855	2,896	2,935	2,971	3,007	3,039	3,065
District 10	367	369	377	387	373	375	391	389	402	409
District 11	860	867	879	894	908	925	941	952	963	981
<b>Totals</b>	<b>16,181</b>	<b>16,316</b>	<b>16,440</b>	<b>16,603</b>	<b>16,737</b>	<b>16,906</b>	<b>17,111</b>	<b>17,291</b>	<b>17,437</b>	<b>17,557</b>

Each year IBEW districts need to add new people to meet both replacement *and* growth needs. As Exhibit 11 shows, each year over 16,000 new workers will need to be added by the IBEW to meet projected growth of the industry. These new entrants will replace those who leave the IBEW and also meet growth expectations. The total number of new entrants needed from 2012 to 2021 is 168,578.

**Exhibit 12 – Composition of New Entrants Projections by IBEW District**

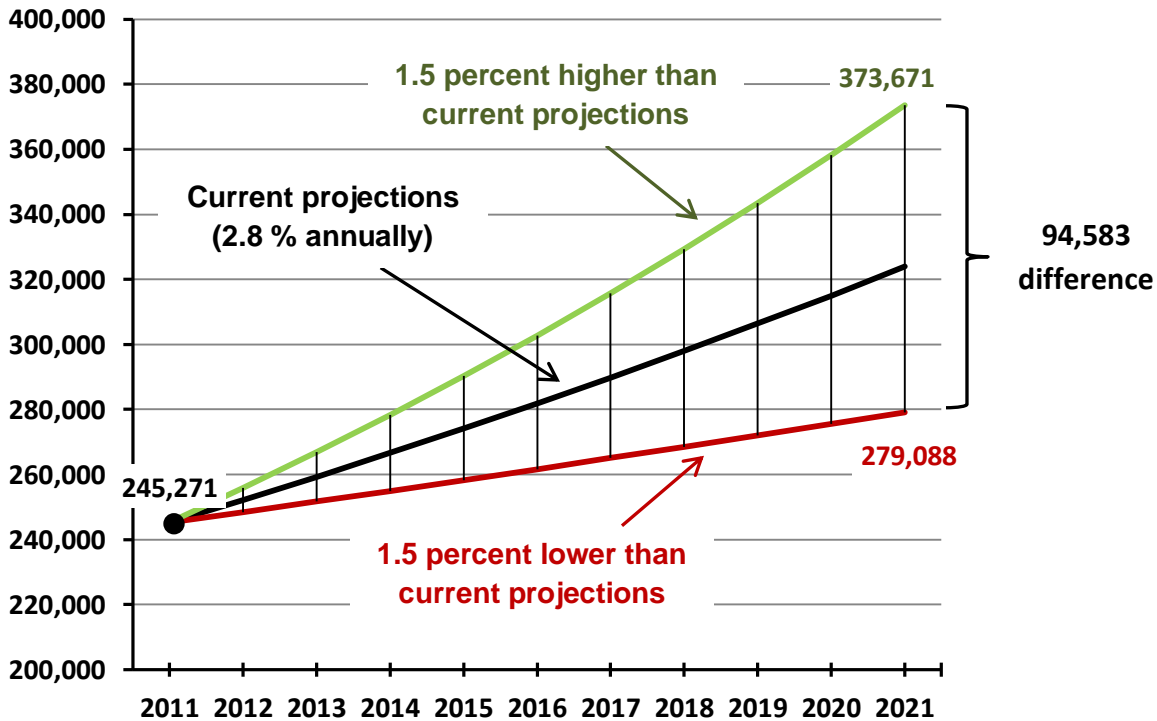
*Growth and replacement estimates for IBEW districts for select years: 2012 and 2021*

District	2012			2021		
	Growth	Replace	Total	Growth	Replace	Total
District 2	253	383	636	325	346	671
District 3	1,334	1,457	2,792	1,714	1,674	3,388
District 4	762	940	1,702	979	933	1,912
District 5	517	930	1,447	664	645	1,309
District 6	1,486	2,298	3,783	1,908	2,037	3,945
District 7	520	762	1,283	668	645	1,313
District 8	215	382	597	276	289	565
District 9	1,255	1,460	2,715	1,612	1,453	3,065
District 10	181	186	367	233	176	409
District 11	393	467	860	505	476	981
<b>Totals</b>	<b>6,917</b>	<b>9,264</b>	<b>16,181</b>	<b>8,884</b>	<b>8,673</b>	<b>17,557</b>

Exhibit 12 shows the number of new entrants needed—growth, replacement and total—in 2012 and 2021. For example, in 2021 there will be a need for 17,557 new entrants (see also Exhibit 11). Of these new entrants, 8,884 (51 percent) will be due to growth in the electrical industry and 8,673 (49 percent) will be needed to replace workers who leave the occupation (see also Exhibit 9).

**Exhibit 13 – Alternative Employment Projection Models**

*IBEW employment projections using different growth assumptions*



The projection used in this study is a 2.8 percent annual growth figure. This BLS value represents the best estimate for all electricians in the construction industry. However, the actual growth rate of IBEW electricians in the construction industry is likely to vary somewhat from this figure. As shown above in Exhibit 13, even small deviations of 1.5 percent higher/lower result in fairly dramatic differences, especially the farther out the estimate is projected. By 2021, there would be a 94,583 difference between the high and low variations of 1.5 percent from the current 2.8 percent model. Fortunately, projections will be updated each year, with the years that are closer to the projection date providing more accurate predictions than the out years.

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