

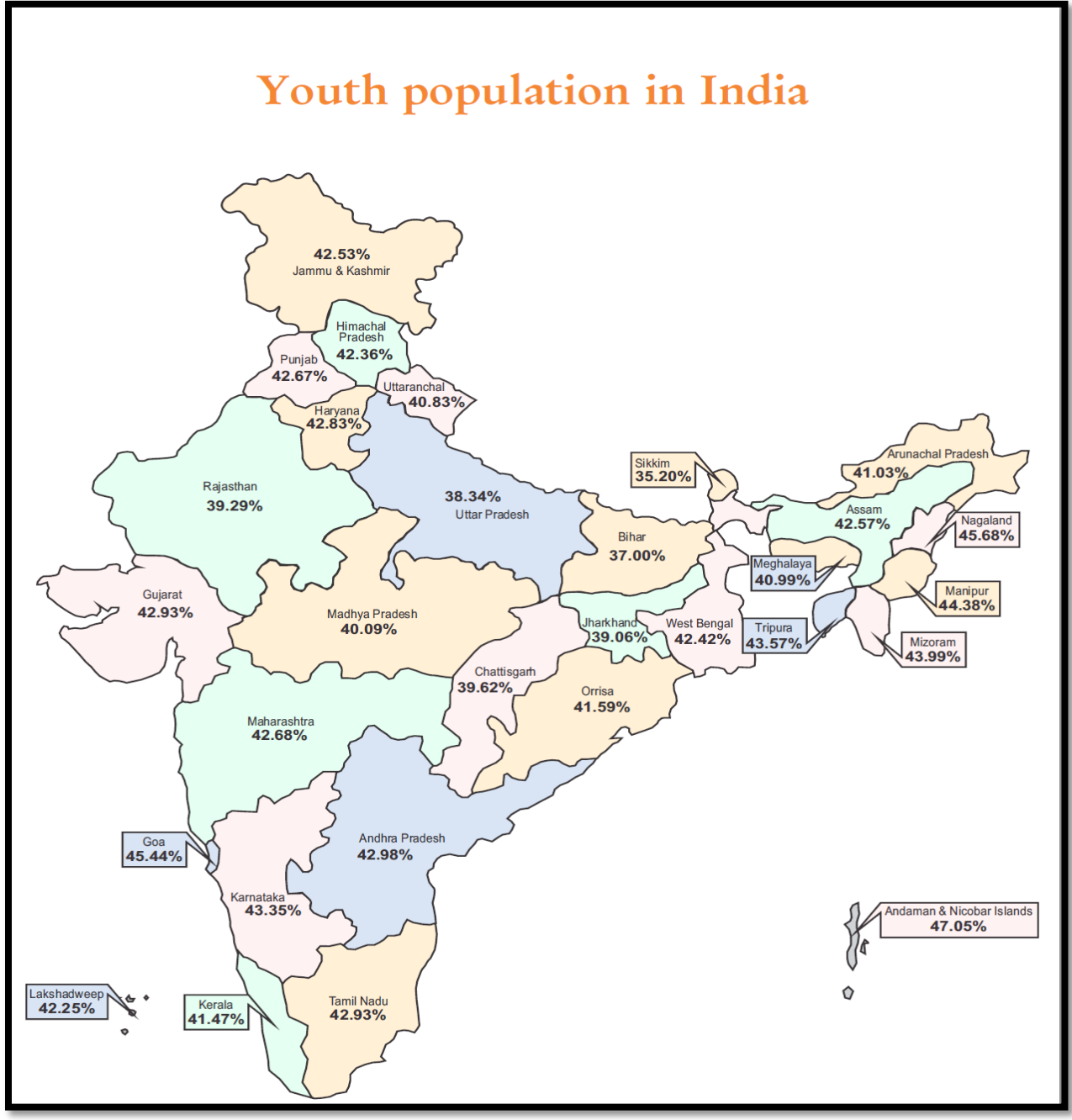
## Schneider Electric India Foundation's "Strategic Skill Development Program "

A Case Study on transforming lives of underprivileged youth through "Electrician Training"

*Let us remember:  
one book, one pen;  
one child and one teacher;  
**can** change the world*

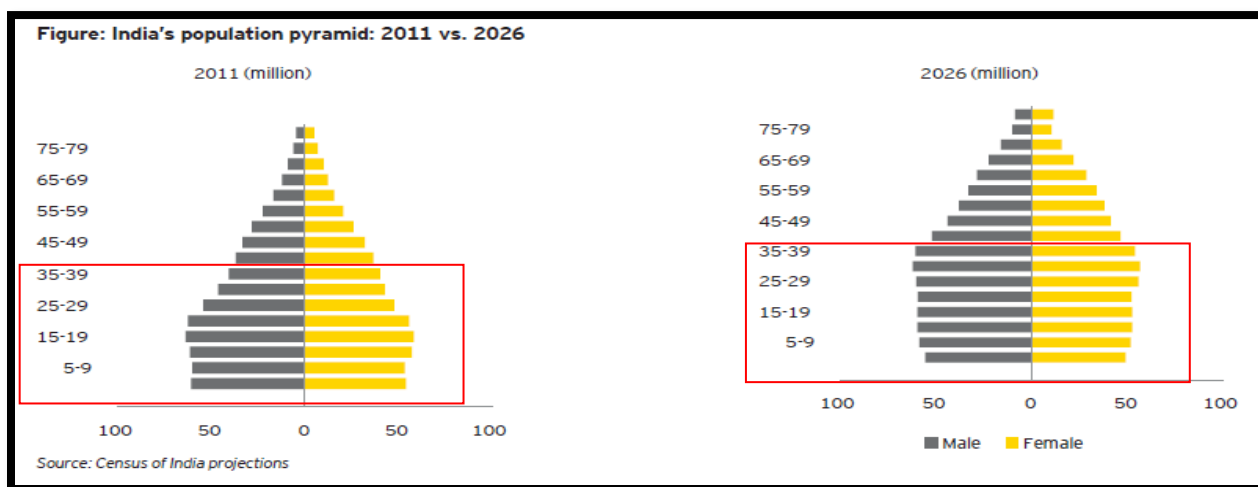
*- Malala Yousafzai*

# Youth population in India



## Background on the Skill Gap Challenge and Youth Unemployment

India is expected to reach to the population of 1.4 billion and be one of the most populous nations by 2025<sup>1</sup>. The population pyramid of country is expected to “bulge” across the 15–64 age brackets over the next decade thereby increasing the working age population from approximately 761 million<sup>2</sup> to 869 million during 2011–2020<sup>3</sup>. As a result, until 2020, India will be experiencing a period of “demographic bonus,” where the growth rate of the working age population would exceed that of the total population<sup>4</sup>. **Around 64% of India’s population is expected to be in the age bracket of 15–59 years by 2026, with only 13% of the total aged above 60 years.**



This increase in the share of youth population due to demographic ‘dividend’ or the ‘youth bulge’ seems to be one of the sources of future economic growth in India. However, their high proportions in the labor force indicate that the problem of youth unemployment and underemployment would remain serious policy issue for many more years to come in India.

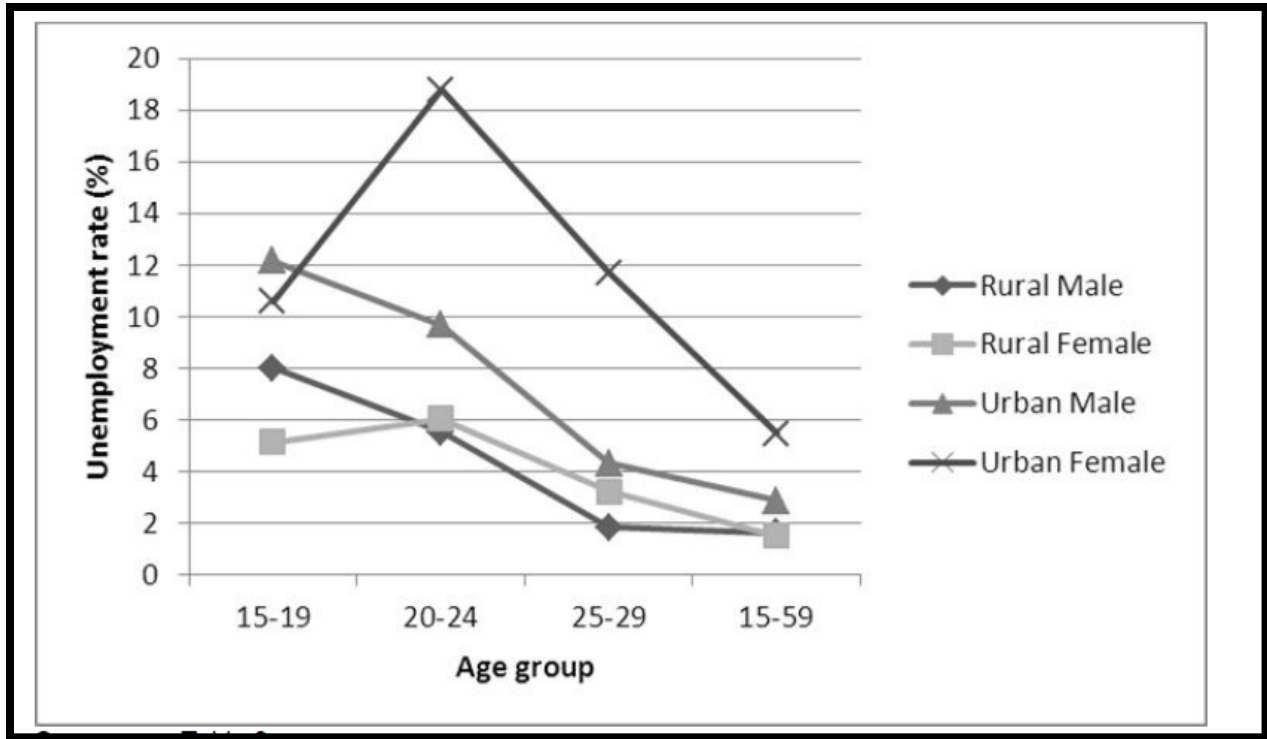
**Table 1: Labour force participation rate (%) of youth and adults, 2009-10**

	Age category	Rural			Urban		
		Male	Female	Person	Male	Female	Person
Youth	15-19	39.0	19.5	30.4	26.3	8.5	18.3
	20-24	81.3	31.4	55.7	68.2	19.7	45.0
	25-29	97.5	40.4	67.5	94.7	22.2	59.1
	15-29	68.0	30.2	49.6	61.0	16.8	40.1
Non-youth	30-59	98.2	47.2	72.8	96.9	24.4	62.0
Total	15-59	84.8	39.9	62.6	80.9	21.0	52.3

Source: NSS 66<sup>th</sup> Round (2009-10), Schedule 10 - Employment and Unemployment

As highlighted in Table 1, a sizeable percentage of male population in the youth category is in the labor market.

**Youth unemployment rate (%) (usual status), 2009-10**



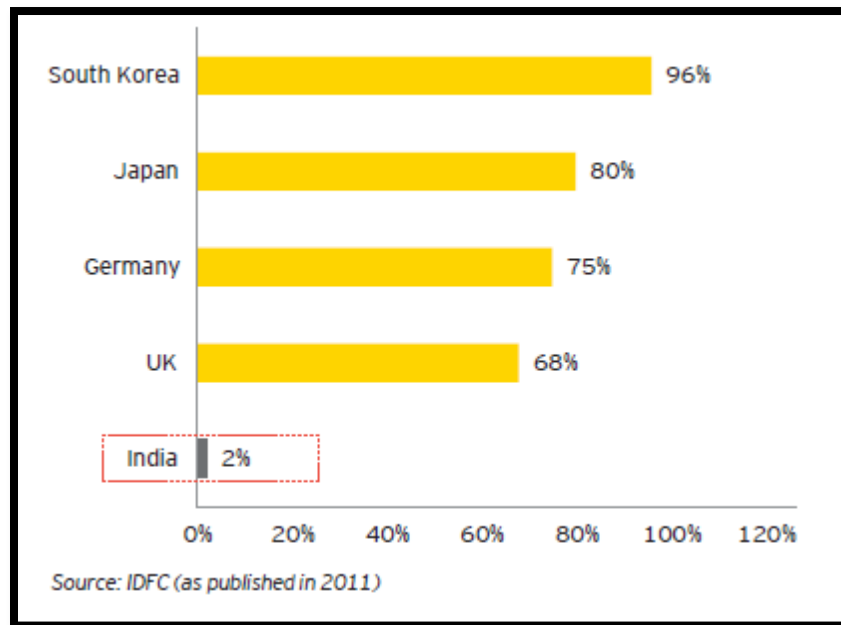
Such high unemployment rates reflect, at least partly, the mismatches between skills demand and supply. The skill levels of those who join the labor market early are low as they are often school drop-outs and haven't had the opportunity to undergo vocational training. The Government of India (GoI) has set a target to impart the necessary skills to 500 million people by 2022. However, some experts have raised concerns over the magnitude and achievability potential of this target. In this regard the Institute of Applied Manpower Research IAMR (a government think tank) has computed new skill gap figures to arrive at a *realistic* overall target. According to IAMR's analysis, the total number of people who need to be trained by 2022 ranges between 249 and 290 million across differing skill requirement scenarios<sup>5</sup>.

Even by alternative estimates, the country faces a considerable skill development challenge. Around 12 million people are expected to join the workforce every year over the next decade<sup>6</sup>. In contrast, the country has a total training capacity of around 4.3 million<sup>7</sup>, thereby depriving around 64% entrants of the opportunity of formal skill development every year. Moreover, net enrolment in vocational courses in India is estimated at around 5.5 million per year, while that in China is 90 million and in the US 11.3 million. Clearly, the country faces a major challenge of imparting "*employable skills*" to its growing workforce over the next few decades.

Multiple pointers indicate serious gaps between the output of skill development institutions and industry requirements. Out of around 0.4 million engineering students graduating every year in India, only 20% are readily employable<sup>8</sup>. By 2020, the country is expected to face a shortage of 13 million medium-skilled workers, posing a big impediment to labor-intensive sectors<sup>9</sup>. Around 93% of the Indian workforce is employed in the unorganized or informal sector, which lacks any kind of formal skill

development system<sup>10</sup>. Barely 2.5% of the unorganized workforce reportedly undergoes formal skill development, vis-à-vis 11% in the organized sector. Furthermore, only around 12.5% and 10.4% of the workforce in the unorganized and organized sectors, respectively, undergoes informal skill development. This indicates that around 85% of the workforce in the unorganized sector does not imbibe any form of skill development — formal or informal<sup>11</sup>.

Percentage of formally skilled workforce



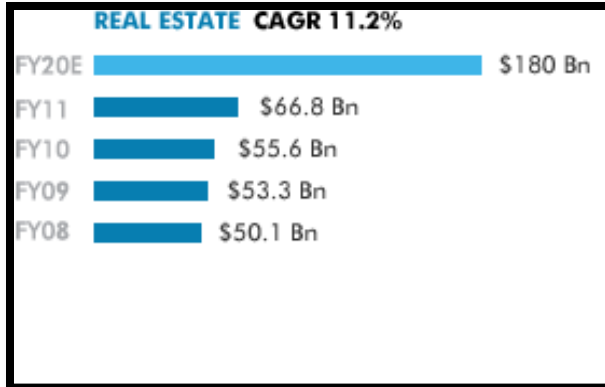
It is against this background that Schneider Electric Foundation India, decided to contribute to the solution of this major long term problem of skill development faced by the country.

### **Schneider Electric India Foundation’s “ Strategic Skill Development” Initiative**

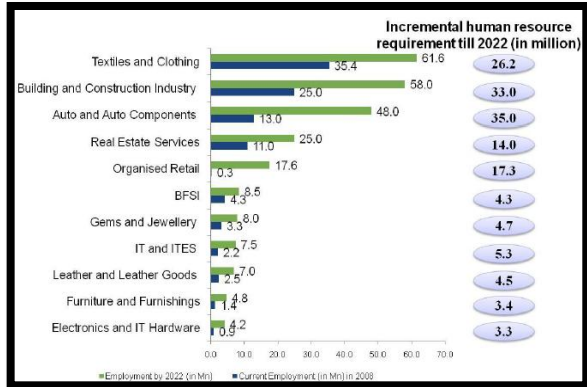
Schneider Electric wanted to contribute towards the solution of this major problem faced by Indian Youth and this thought has been the prime motivator behind the SEIF’s conscious movement in the direction of providing strategic skill development training to the unemployed youth. Company’s choice of “Electrician Training” as a skill development tool was guided by several considerations.

### **Why Electrician Training**

Prominent among them has been that Schneider Electric is an *Energy Management* company and has several man years of knowledge repository resident within the company including the especially designed training equipments which were designed and manufactured through Schneider Electric Ecosystem partners. Another consideration was that to engage the SE employees in its CSR activity, Electrical training was a preferred choice as a sizeable employee base comes from the Electrical Engineering background. Healthy growth trend in residential real estate and resultant demand for trained electricians was also one of the tipping points for choosing “Electrician Training”.



The market size of real estate in India is expected to increase at a CAGR of 11.2 per cent during FY2008-2020



Incremental human resource requirement in Building & Construction Industry till 2022 – 33 Million

As per a National Skill Development Corporation (NSDC) report the key skills in demand in Building & Construction Industry are Crane Operators, **Electricians**, Welders, Masons, Plumbers, Carpenters and Painters etc.

Another consideration for choosing “Electrician Training” is the limited availability of Electricians with required “Safety Focus”. As per a National Crime Record Bureau - NCRB report almost 8 people die every day because of electrocution. Another report from Oil Industry safety Directorate - OISD states that 42% of Fire occurs due to Electrical sources.

## Development Process of Course Content & Training Modules

Process Next step was to design the improved curriculum to address the concern areas of the of the existing courses, the benchmark of which has been Industrial Training Institutes- ITI, the government run Industrial training organizations. However, the course curriculum at ITI’s has not been keeping pace with advanced industrial technology over last several decades and has been missing the “Practical” aspect of theoretical knowledge.

The team at SE studied the existing course material offered at ITI’s , conducted several focused group discussions with electrical contractors , interviewed several plant heads including SE’s own plants to understand the requirement and expectation of Industry from a *trained electrician*. (Annexure 3)

Most frequent concern area that was highlighted by various respondents was that the candidates coming into the employment stream severely lack the practical exposure and had no exposure to the safety and security procedures followed in the organized industry.

Based on the feedback secured, SE designed an improved curriculum backed up by a fully functional practical lab the equipments in which has been especially designed keeping in mind the market requirement for practical exposure. The curriculum was designed in such fashion that it would give the candidates the required exposure on the fundamentals of electrical engineering, household electrical installation training, industrial electrical installation training, safe handling of various tools & tackles and

most important the safe work practices. This course was designed for duration of 3.5-4 Months.(Annexure 4)

## **Deployment and Execution**

SEIF was very clear about the fact that *on ground* execution of the program is a highly specialized job and it would require the execution and mobilization skills of highly committed partner organizations for the deployment of this program. To overcome this challenge, SEIF collaborated with various corporate foundations and Not for Profit organizations of repute that were in the field of skill building of unemployed youth. SEIF provided them a fully functional electrical lab and highly developed course content which was tuned to the requirement of the market to facilitate the easy placement of the candidates post training.

## **State of Art 'Training of Trainers' Facility**

SEIF also arranged for the "Training of Trainers" at its state of the art training facility at Bangalore which was opened up in collaboration with Karnataka Government, Schneider Electric Foundation France and French Government. This two weeks residential training is provided to the Trainers free of cost, where our NGO Partners supports the boarding and lodging arrangements for incoming candidates.



## **Integration of SEIF's Teachers Mission Program**

To harness the resident pool of knowledge of Schneider Electric India's employees for the training program and to provide them an opportunity to contribute towards the CSR efforts of the organization, SEIF envisaged the Teacher's Mission program. In this program, the employees of SEI visit the various training centers and provide training to the candidates on various technical (related to training curriculum) and non-technical subjects like basic book keeping, time management, communication skills etc.



## **Challenges**

The challenges were many and were present at each stage of the project starting from devising the course content from scratch, building a working lab for the practical training, finding and collaborating with the like minded execution organizations, mobilization of the candidates, arresting the attrition rates, placement of the candidates etc.

However, these challenges were met and overcome with the *never say die* spirit of committed employees & volunteers of various partner organizations and SEIF employees and volunteers. Various best practices were adopted and the successful ones were translated to various centers, to the extent possible based on the availability of on ground physical and human infrastructure.

## **Translation of Best Practices**

SEIF acted as a catalyst and translation agent and unabashedly shared and translated the best practices of one centre and partner NGO with others. However, the deployment of those best practices was subject to the on ground constraints of deployment.

To arrest the attrition rates, wherever possible SEIF insisted on the residential programs for the candidates. Alumni were called in various programs and were asked to share their success stories with the trainees. Field visits in plants & factories and sites were organized to provide the trainees real life exposure of the working conditions. As mentioned earlier, SEIF Teacher's Mission program was integrated with Electrician Training Program to boost the aspiration level of trainees.

## **Conclusion**

SEIF's "Electrician Training Program" is our humble collaborative effort with our partner execution partners to bring the unemployed youth into the *productive work force* either through gainful employment or self employment route.

Going by the credo that "*Nothing is best enough that it can't be bettered*" we are ceaselessly working to improve the quality of the training program and keep it relevant to the market demand. For e.g. we are in process of introducing the modules on home security systems , inverter and ups maintenance and solar equipments as part of the electrician training program.



In the end, we would like to thank profusely to the dedicated employees and volunteers of our partner organizations to work with us in our endeavor to contribute to the growth of skilled workforce of our country.

### Annexure 1



<b>Salient Data Points Regarding the Program</b>		
<b>1</b>	Program Inception Year	2009
<b>2</b>	Number of Existing Partner Organizations	23
<b>3</b>	Number of Centers where this program is being run	215
<b>4</b>	Total candidates trained since the inception of program till 2014	34723
<b>5</b>	Total Teacher's Mission conducted since the inception of program till 2014	135
<b>6</b>	Total Train the Trainers conducted since the inception of program till 2014	41
<b>7</b>	Target for 2015 Electrician Training Program	18000
<b>8</b>	Target for 2015 Teacher's Mission	150
<b>9</b>	Target for 2015 Train the Trainers Program	150
<b>10</b>	Target for 2015 New Centers in 2015	25

### Reference Table

<u>Sr. No</u>	<u>Reference</u>
<b>1</b>	"India to be most populous country by 2028: UN report," The Hindu website, <a href="http://www.thehindu.com/todays-paper/tp-national/india-to-be-mostpopulous-country-by-2028-un-report/article4816016.ece">http://www.thehindu.com/todays-paper/tp-national/india-to-be-mostpopulous-country-by-2028-un-report/article4816016.ece</a>
<b>2</b>	"Skilling India – The Billion People Challenge," CRISIL, November 2010, p.1
<b>3</b>	"India to have 28 pc of world's workforce soon," IBN Live website, <a href="http://ibnlive.in.com/news/india-to-have-28-pc-of-worlds-workforcesoon/112213-3.html">http://ibnlive.in.com/news/india-to-have-28-pc-of-worlds-workforcesoon/112213-3.html</a>
<b>4</b>	"Population Projection and its Socio-Economic Implications in India: A StateLevel Projection Till 2020," International Institute for Population Sciences(IIPS)
<b>5</b>	"Training 500 mn people by 2022 unrealistic: Govt think-tank IAMR," Economic Times website, <a href="http://articles.economictimes.indiatimes.com/2013-06-07/news/39815423_1_skill-development-skill-gap-ck-prahalad">http://articles.economictimes.indiatimes.com/2013-06-07/news/39815423_1_skill-development-skill-gap-ck-prahalad</a> ,
<b>6</b>	"India's Economy Leaves Job Growth in the Dust," Bloomberg website, <a href="http://www.bloomberg.com/news/2013-03-14/india-s-economy-leaves-job-growth-in-thedust.html">http://www.bloomberg.com/news/2013-03-14/india-s-economy-leaves-job-growth-in-thedust.html</a> ,
<b>7</b>	Twelfth Five Year Plan (2012-17) Economic Sectors , Planning Commission , March 2013 ,69
<b>8</b>	"A mere 2% of Indian workers are formally skilled," NSDC website, <a href="http://www.nsdcindia.org/pdf/2per-indian-workers.pdf">http://www.nsdcindia.org/pdf/2per-indian-workers.pdf</a> , accessed 12 August 2013
<b>9</b>	"Indians can dominate workforce of future, but may lack the skills," Live Mint website, <a href="http://www.livemint.com/Politics/v2ITlh85LIREkkco31aAhK/Indians-candominate-workforce-of-future-but-may-lack-the-s.htm">http://www.livemint.com/Politics/v2ITlh85LIREkkco31aAhK/Indians-candominate-workforce-of-future-but-may-lack-the-s.htm</a>
<b>10</b>	"Skill Development Initiatives in India," ISAS Special Report-National University of Singapore, July 2013, p.6
<b>11</b>	"eskill Development", Advisor to the Prime Minister (NSDC), Pg.5
<b>12</b>	Reference Reports <ol style="list-style-type: none"> <li>1. Assessing the Economic Impact of India's Real Estate Sector – A CREDAI and CBRE Initiative</li> <li>2. State of Urban Youth , India 2012 – IRIS Knowledge Foundation and UN Habitat Report</li> <li>3. FICCI and iMACS report on Skill Development landscape in India and Implementing Quality Skills Training August 2010</li> <li>4. KPMG report " Indian Real Estate Opening Doors"</li> <li>5. Youth Employment and Unemployment: an Indian perspective ; An ILO report March 2013</li> <li>6. Paper on Youth Employment and Unemployment ; Indira Gandhi Institute of Development Research , Mumbai</li> <li>7. EY and FICCI report "Reaping India's promised demographic dividend –industry in driving seat"</li> </ol>

## Annexure 2

### Market Survey Questionnaires for developing the Training Content

Sr. No	Topic	Attachment
1	Market Segmentation and Electrician Questionnaire	 Market segment + Questionnaire for elec
2	Electrical Contractor Questionnaire	 Questionnaire for Contractors.xls

## Annexure 3

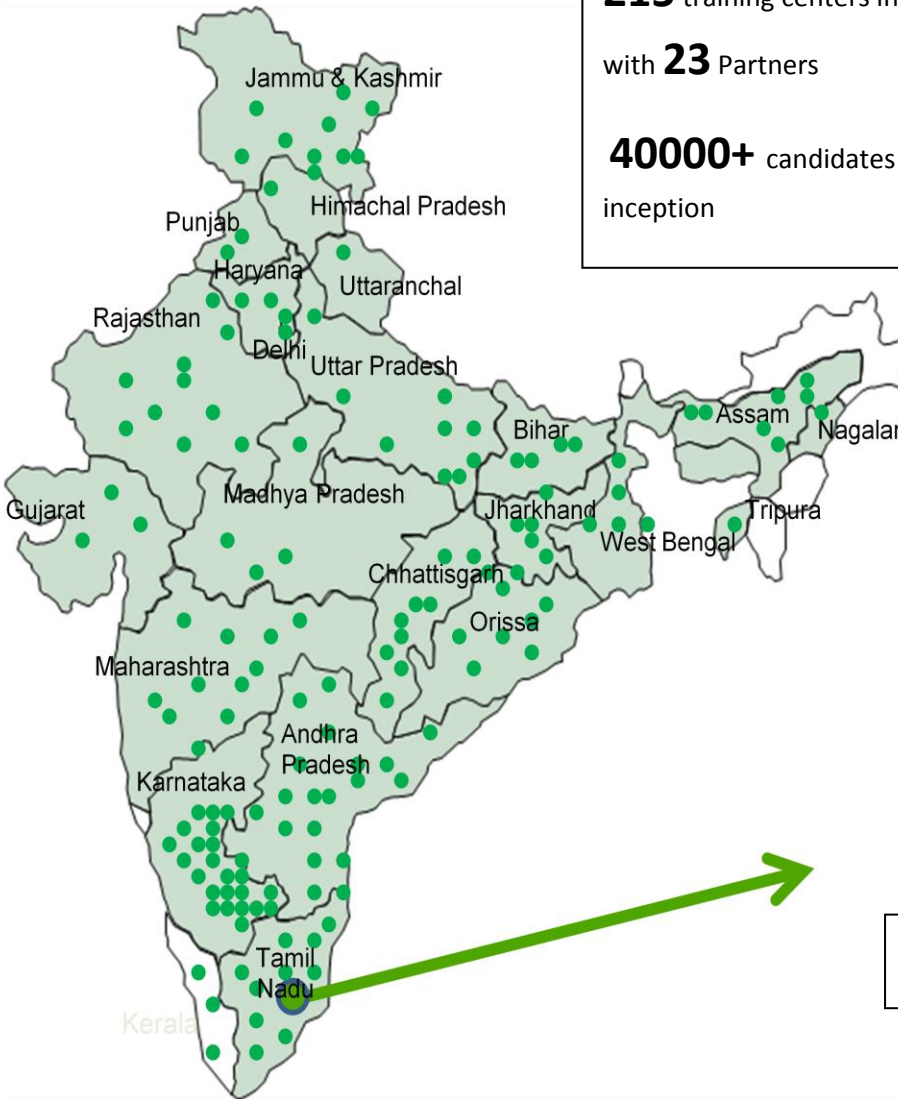
### Day Wise Schedule for Electrician Training

DAY WISE SCHEDULE FOR ELECTRICIAN TRAINING		
SL NO	TRAINING CONTENT	Day
1	<b>Introduction to Wires</b>	Day 1
1.1	Different types of wires and cables	
1.2	Guages for Wire and Cable	
1.3	Identifying the colour Uses of Wires	
1.4	Wires and Cables Safety Tips	
2	<b>Introduction to Tools</b>	Day 2
2.1	Usage of tools	
2.2	safety precautions while using tools	
3	<b>Cable Joints and Terminations</b>	Day 3
3.1	Crimping and Skinning of cable	
3.2	Preparing wire joints - Straight and T Joints	
3.3	Soldering the joints	
3.4	Preparing terminations	
4	<b>Basic concepts on electricity and Electrical Accessories</b>	Day 4
4.1	Electrical accessories and its ratings and uses	
4.2	Ohms Law, Voltage, Current and Resistance	
4.3	Phase, Neutral and Earthing points in a house	
4.4	Measurement of electrical parameters	
4.5	Series and Parallel connection	
4.6	Fire - causes and prevention	
5	<b>Connection of Electrical accessories</b>	Day 5
5.1	Introduction to electrical products	
5.2	Electrical Symbols	
5.3	Wiring diagram or layout	
5.4	Wiring of single tube light fitting	
5.5	Wiring of twin tube light fitting	
6	<b>Complete Wiring of a Single Room</b>	Day 6
6.1	Connection of 1 light with switch	
6.2	Electrical products - Energy meter, Fuse, Main Switch	
6.3	Function and Application of Meter, fuse and Main switch	
6.4	Miniature Circuit Breaker	
7	<b>Electric Shock</b>	Day 7
7.1	Causes of Shock, First Aid and Prevention	
8	<b>Earthing</b>	Day 8
8.1	Purpose of earthing	
8.2	Making of Earthing Pit	
9	<b>Single Room wiring Plan</b>	Day 9
9.1	Wiring Plan and Estimation	
9.2	Prices of electrical products and Accessories	
10	<b>WIRING OF 1 BHK HOUSE With 2 lights, 2 Tube lights, 3 Sockets &amp; 2 Fans</b>	Day 10
10.1	Parallel connection of 2 lights	
10.2	Fixing of tube light	Day 11
10.3	Connection of fan with regulator	
	Parts of Fan and fan control Function	
	Dismantling Fan and Fixing the fan	Day 12
10.4	Connection of socket with grounding	
10.5	How to make earthing & measuring the resistance	Day 13/14
10.6	Plan of wiring, estimation, costing & making	
	wiring of 1 BHK house as per diagram	
11	<b>WIRING OF 2 BHK HOUSE - Having 3 Fans, 2 Power Sockets, 4 Tube lights, 4 sockets, 6 Lights + Telephone &amp; cable socket</b>	Day 15
11.1	Wiring System	
11.2	Types of wiring and its advantages	Day 16
11.3	Earthing system	
11.4	Types of earthing System and Maintenance	
11.5	Testing of a wired system	Day 17
11.6	Testing of a wired system	
11.7	Fault Finding / Trouble shooting a 2BHK House	

	<b>WIRING OF 3 BHK HOUSE</b>	
12	Having 5 Fans, 3 power Sockets, 5 Tube lights, 6 Sockets, 7 Lights,+ Telephone & cable socket, 3 Emergency sockets ( Gen / UPS ) , 1 water pump	Day 18 - 20
12.1	Parallel connection of 5 lights	
12.2	Plan of wiring, estimation, costing & making connections as per diagram of 3 BHK house	
12.3	Fixing of MCB with auto level controller to pump~	
	<b>CONDUCTORS &amp; INSULATORS</b>	
13.1	Properties, types, uses, materials	Day 21 - 22
	<b>LODGE WITH 10 ROOMS</b>	
14	Having 11 fans, 15 Tube lights, 21 Lights, 12 Sockets, 11 Telephone socket & 4 power sockets, water pump ,10 indicating lamps with bell, 2 pole switch with indicator -10.	Day 24 - 26
14.1	Plan of wiring, estimation, costing & making connections as per diagram of 10 rooms lodge	
	<b>Lodge with 60 rooms ( each floor 15 rooms)</b>	
15	Having 70 Fans 70 Tube lights, 120 Lights, 130 sockets 65 Telephone sockets & Cable sockets, 60 power circuits, water pump, 60 indicator lamp with bell, 25 kva Gen set with change over switch	Day 27 - 32
15.1	Plan of wiring, estimation, costing & making connections as per diagram of 60 rooms lodge	
	<b>AC / DC / POLYPHASE</b>	
16.1	Basics, connections, differences , advantages etc	Day 33
	<b>MOTORS</b>	
17.1	Principles, parts construction	Day 34
17.2	Fixing of DOL starter for a 5 hp motor / Pump	Day 35 - 36
17.3	Fixing of Star - Delta starter for a 10 hp motor / pump	Day 37 - 38
17.4	Wiring of a small work shop Having 1 grinding machine of 1/2 hp motor, 1 Lathe machine of 2 hp motor, Vertical drilling machine with 1/2 hp motor, welding machine of 16 amps & 1 compressor of 1/ hp motor	Day 39 - 40
17.5	Wiring of flour mill - Having 3 machines. 2 machine for atta & 1 for chilli	Day 41 - 42
	<b>Maintenance of House and appartments</b>	
18.1	Fixing & connections of tube light, lamps, etc	Day 43
18.2	Fixing & repair of accessories	Day 44 - 48
	a) ceiling fan	
	b) Table fan	
	c) Geysar	
	d) Mixie	
	e) Wet grinder	
	f) Iron ( auto / non automatic)	
	g) kettle	
18.3	Changing of switches, MCBs, sockets, fuse..etc..	Day 49
18.4	Maintenance of monoblock pump, submercible pump with auto level controller	Day 50
18.5	Operation & maintenance of DG set	Day 51
18.6	Checking & correcting the problems of appliances from the shock	Day 52
	<b>Maintenance in Industry</b>	
19.1	Fixing of Twin tube light fitting, Sodium vapour lamp, Mercury vapour, lamp, Halogen lamp, Neon tubes etc..	Day 53 - 54
19.2	Operation & maintenance of DG set	Day 55
19.3	Maintenance of UPS, AC, Solar system	Day 56
19.4	Maintenance of motors of single & three phase	Day 57
19.5	Starters	Day 58
19.6	Maintenance of transformer	Day 59 - 60

**Annexure 4**

**Geographic Reach of the Program**




**215** training centers in **24** states  
with **23** Partners  
**40000+** candidates trained since  
inception



One Exclusive Women Electrician  
Training Centre in Chennai

**Annexure 5**

**Success Stories**

Sr. No	Program	Representative Success Stories
1	Schneider Electric India Foundation "Strategic Skill Development Program"	 Case studys-SEIF Electrician Training Pr