

ENERGY WORKFORCE **SECTOR STRATEGY**



Advisory Council

March 28, 2013

Agenda

- Why We're Here
- Recap of 2012 Findings
- Review 2013 Plan
- Guidance Needed
 - *Regional Working Groups*
 - *Recruitment*

2013 Theme: Building Momentum

Why We're Here

- Help CA achieve carbon reduction mandates through workforce training & education (all levels)
- Strengthen linkages between industry and education
- Provide advice & counsel to the EWSS team on plans and goals

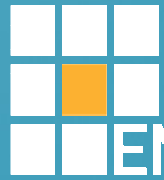
New Advisory Council

Advisory Council

- *Provide program-specific direction (e.g. new courses)*
- *Assist in developing the Sector Strategy*
- *Create platform for collaboration*
- *Assure responsiveness to industry workforce needs*
- *Leverage education and training resources*
- *Participate in skills panels to define training requirements*
- *Build career pathways to meet industry needs for the Sector*

Executive Committee

- *Provide leadership for EWSS*
- *Recommend goals and direction for the Advisory Council*
- *Ensure voice for key stakeholder groups*



ENERGY WORKFORCE **SECTOR STRATEGY**



2012 Findings

2012 EWSS Accomplishments

Profile of Top-Performing Professionals

53 Surveys,
20 Interviews

PEC Course Inventory

Projection of Labor Market Demand 2012-16

EMSI Research

Foundation for 2013 and Beyond

Identification of Employers' Priority Needs

67 Interviews

eesectorstrategy.com

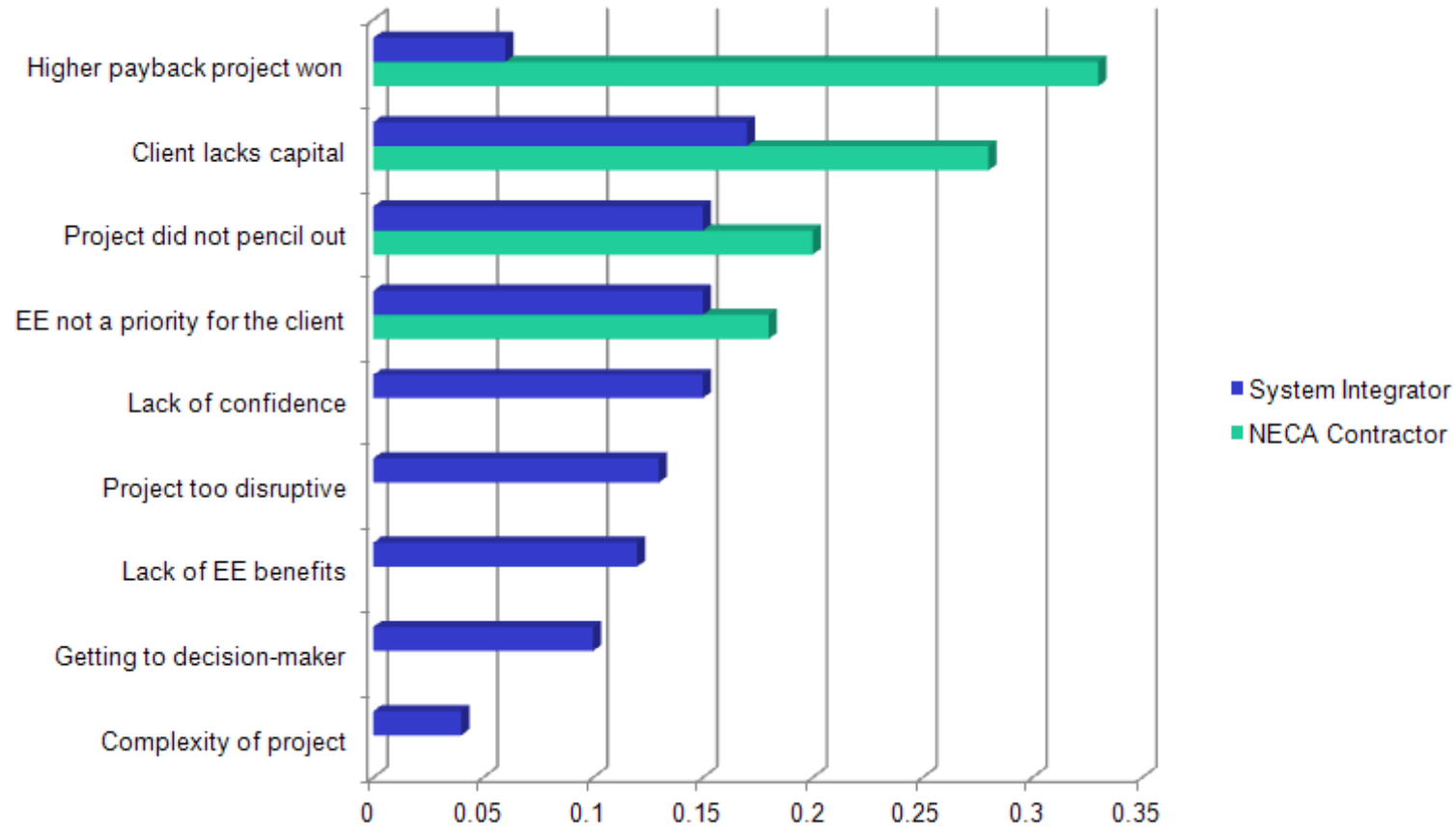
Inventory of Community College and CSU Programs

16 Strategic Programs

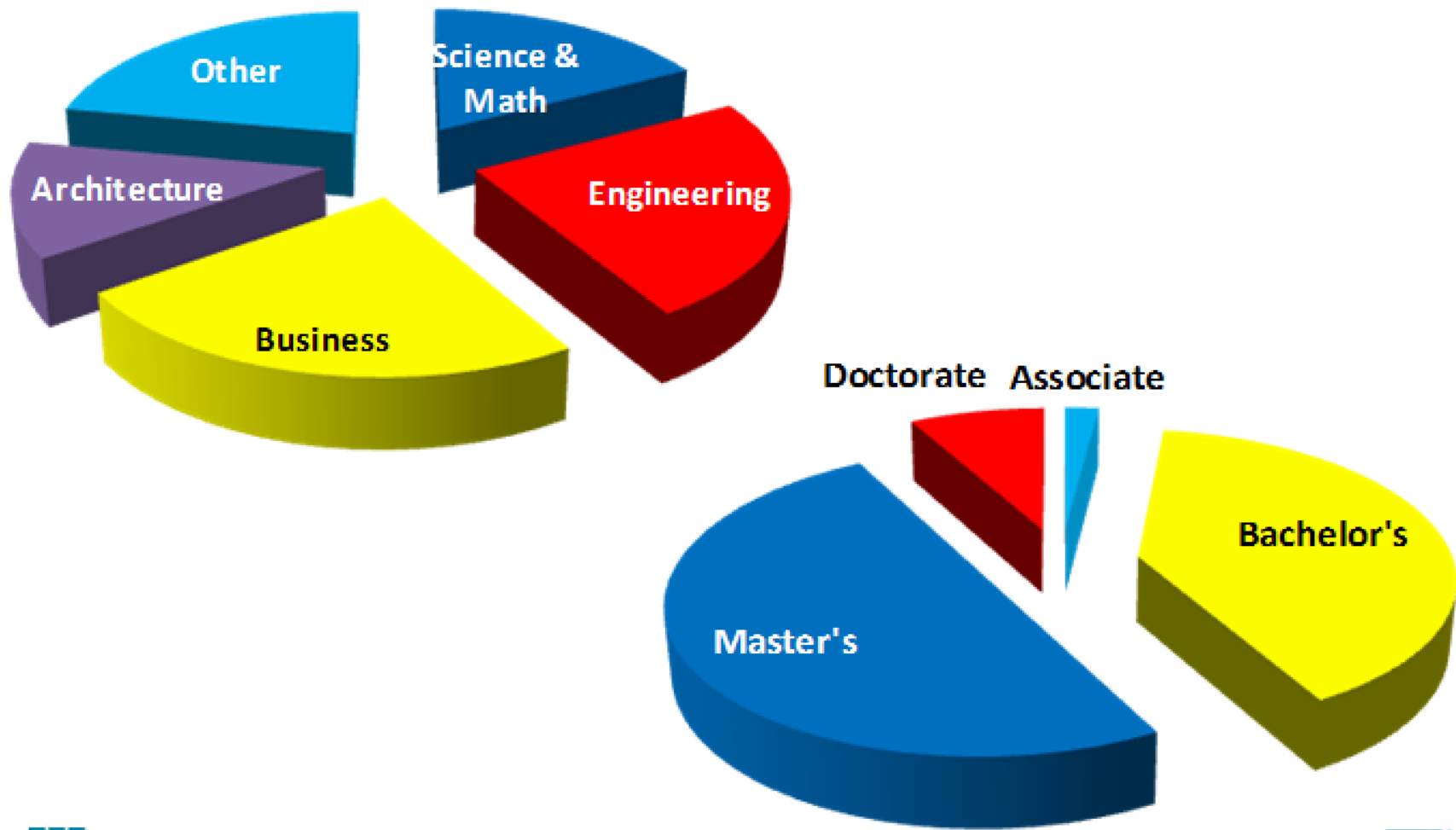
2012 Findings

- Barriers to Market Adoption
- Top-Performance Characteristics
- Geographic Distribution of In-demand Jobs
- Job Openings Mapped to College Programs

Barriers to Market Adoption



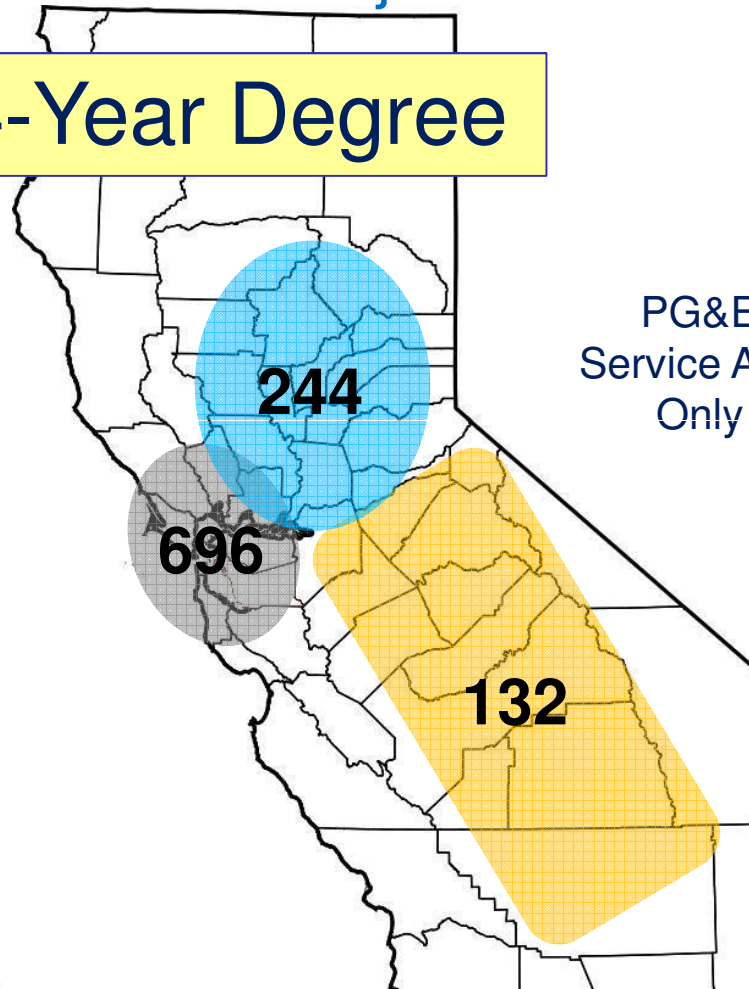
Profile of Senior Energy Professionals



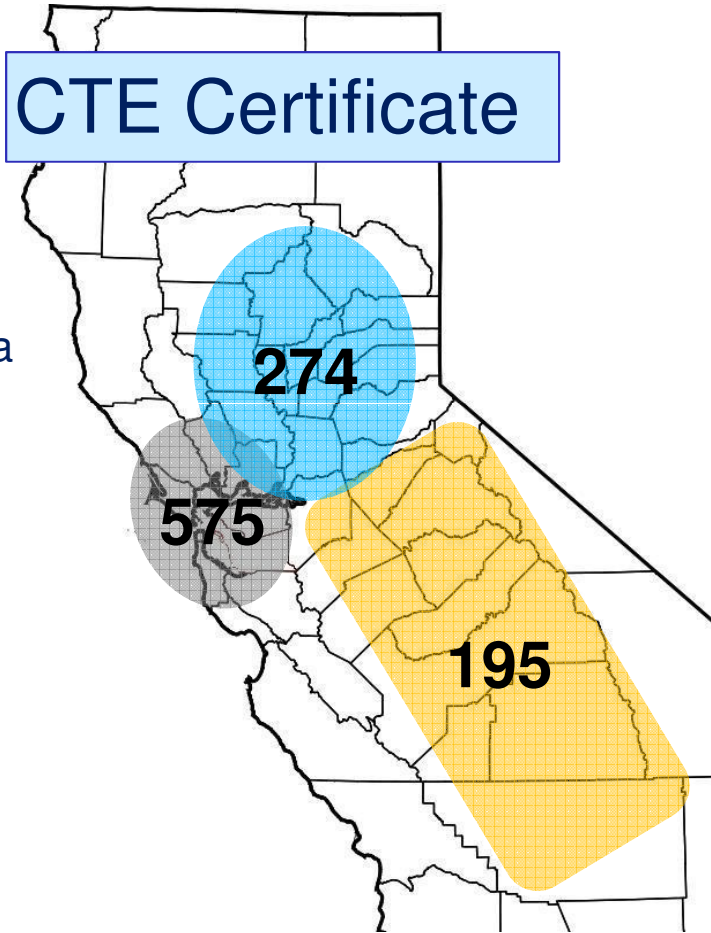
Annual Distribution of Job Openings

Projected for 2012 - 2016

4-Year Degree



CTE Certificate

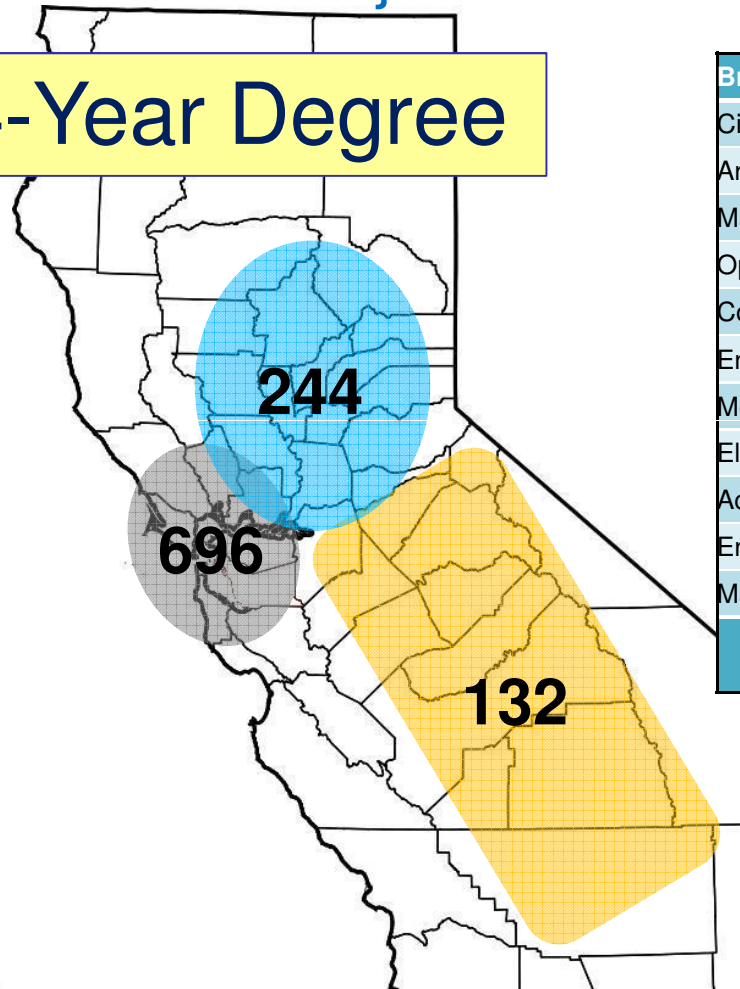


PG&E
Service Area
Only

Annual Distribution of Job Openings

Projected for 2012 - 2016

4-Year Degree

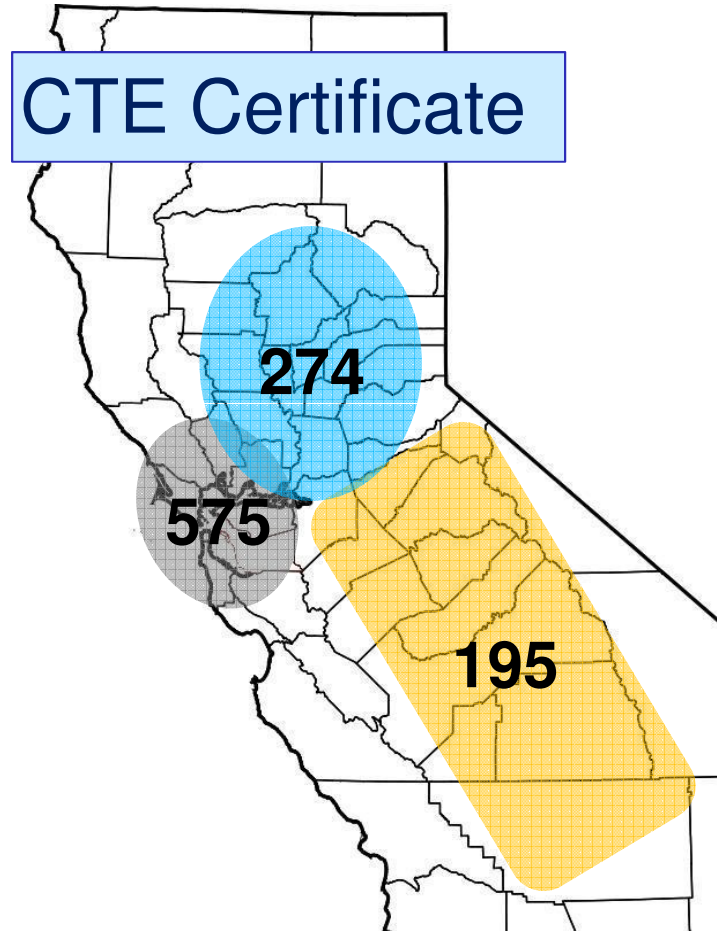


Brief Description	Bay	North	Valley	Total
Civil Engineers	216	70	32	318
Architects	162	47	16	225
Managers	70	25	11	106
Operations Managers	51	20	11	82
Cost Estimators	40	20	10	70
Engineers	41	17	7	65
Mechanical Engineers	36	14	14	64
Electrical Engineers	24	14	7	45
Accountants	21	8	8	37
Environmental Engineers	16	5	10	31
Management Analysts	19	4	6	29
	696	244	132	1,072

Annual Distribution of Job Openings

Projected for 2012 - 2016

Brief Description	Bay	North	Valley	Total
Electricians	149	86	75	310
Plumbers	109	44	26	179
Carpenters	94	46	20	160
Construction Supervisors	86	43	21	150
Construction Managers	46	20	15	81
HVAC Installers	32	13	20	65
Construction Inspectors	32	12	9	53
Sheet Metal Workers	27	10	9	46
	575	274	195	1,044

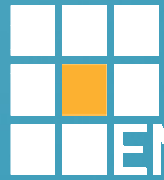


Profile of Recent Job Postings

Description	Postings
Electrical Engineers	248
Maintenance & Repair Workers	115
Mechanical Engineers	78
Industrial Engineers	76
First Line Supervisors of Mechanics, Installers & Repairers	62
Heating & Air Conditioning Mechanics & Installers	59
Construction Managers	48
Electricians	46
First Line Supervisors of Construction Trades & Extraction Workers	41
Engineering Managers	38

Notes:

- Postings 11/2012-2/2013; San Francisco Bay Area
- Source - CA Community Colleges Centers of Excellence



ENERGY WORKFORCE **SECTOR STRATEGY**

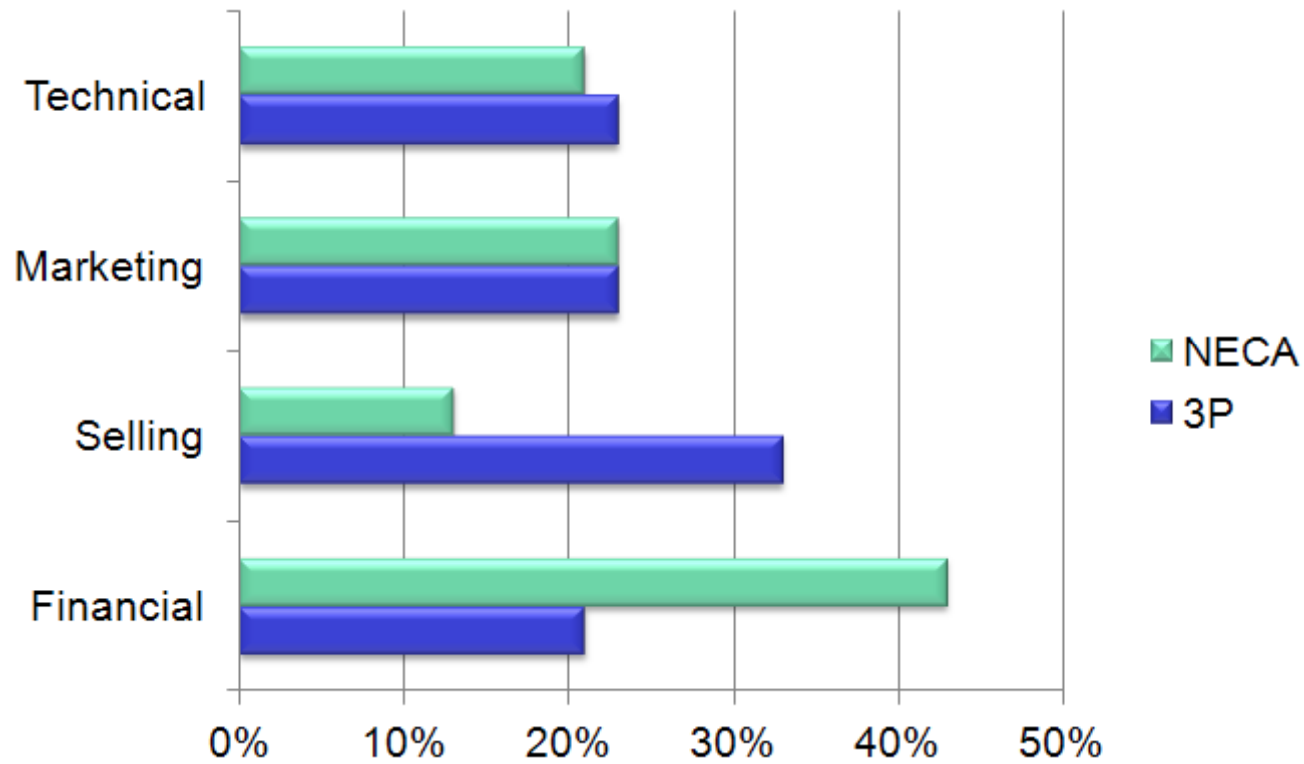


2013 Plan

Key Deliverables

- Business Development Course
 - *Address barriers to market adoption*
- Career Pathway Development
 - *Expand pipeline for recruiting*
- Resource Portal
 - *Education & training programs*
 - *Recruiting source*
- Integration with Other Initiatives
 - *IOUs' HVAC strategy*
 - *CALCTP / Western Cooling Center*

Business Development Course



CSU Programs

Highest Relevance to Energy Efficiency

Cal State Chico

- Civil Engineering
- Electrical & Electronic Engineering
- Mechanical Engineering
- General Construction

San Francisco State

- Civil Engineering
- Mechanical Engineering
- Electrical & Electronic Engineering

CSU East Bay

- General Engineering
- General Construction

San Jose State

- Civil Engineering
- Electrical & Electronic Engineering
- General Engineering
- Mechanical Engineering

Sacramento State

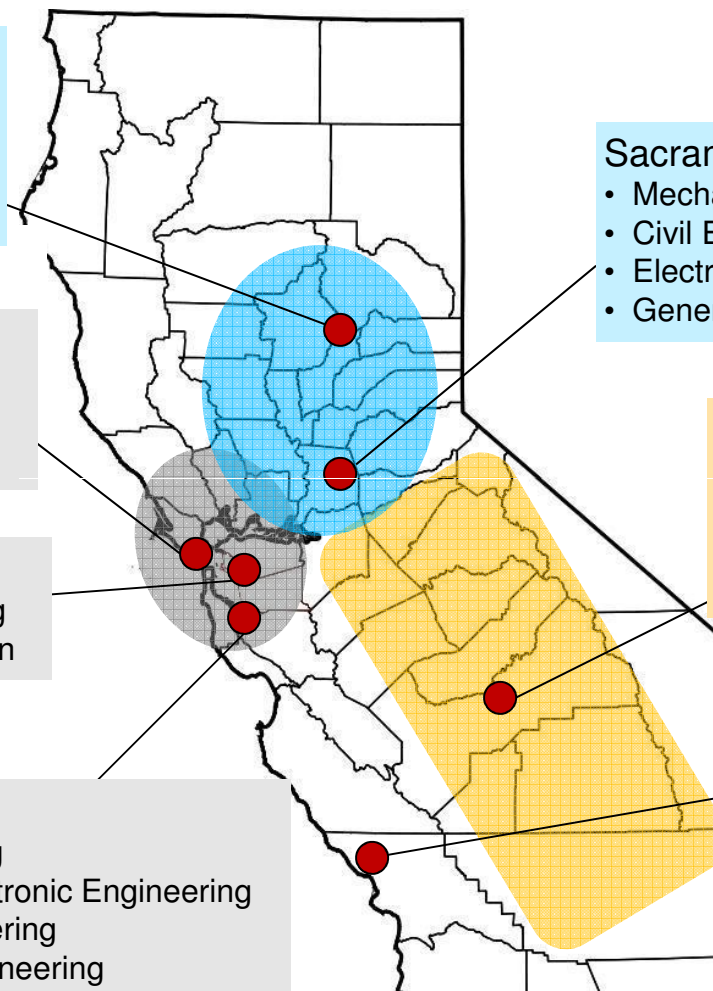
- Mechanical Engineering
- Civil Engineering
- Electrical & Electronic Engineering
- General Construction

Fresno State

- Electrical & Electronic Engineering
- Mechanical Engineering
- Civil Engineering
- General Construction

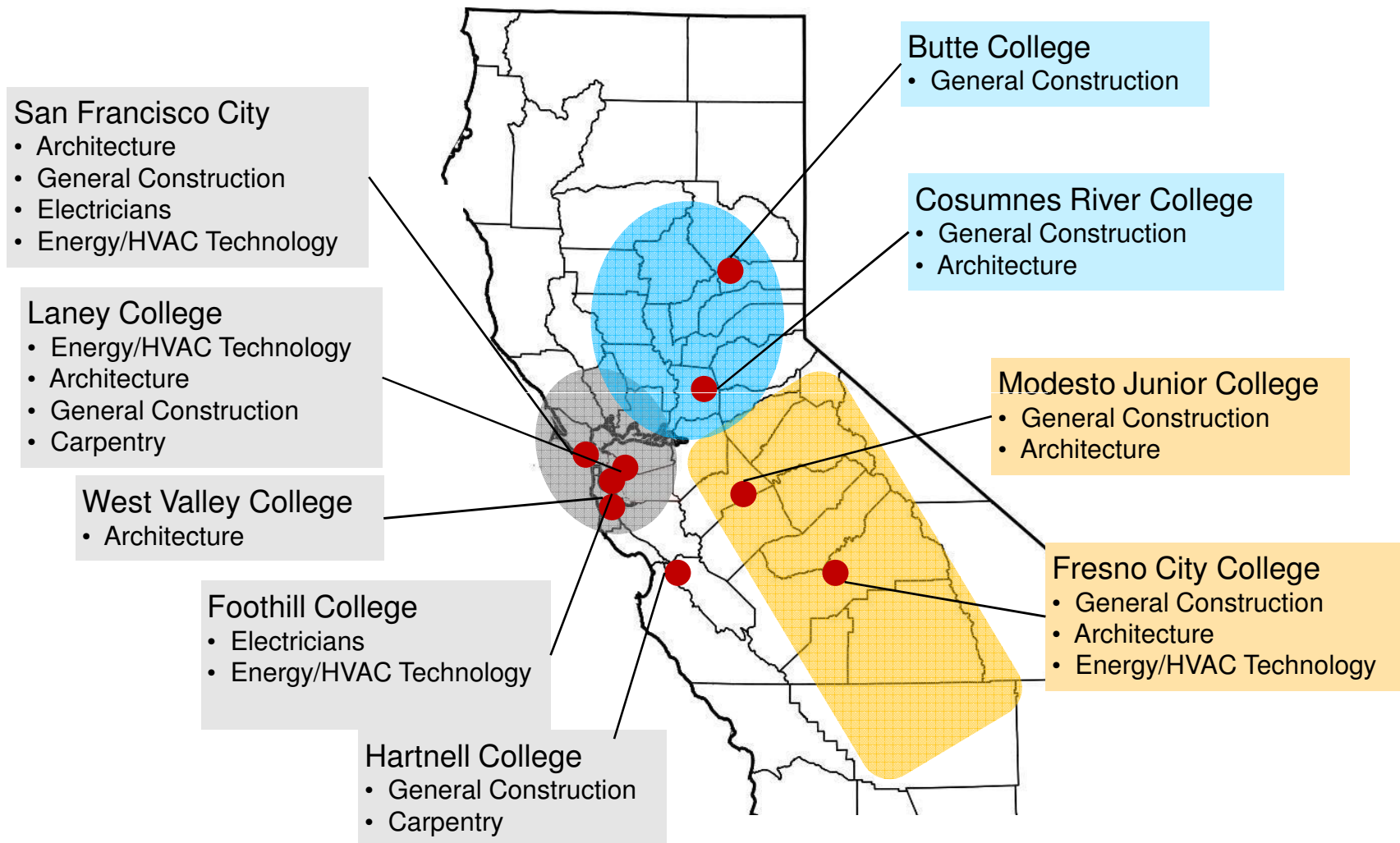
Cal Poly San Luis Obispo

- Architecture
- Mechanical Engineering
- Civil Engineering
- Environmental Health Engineering
- Electrical & Electronic Engineering
- General Engineering
- General Construction



Community College Programs

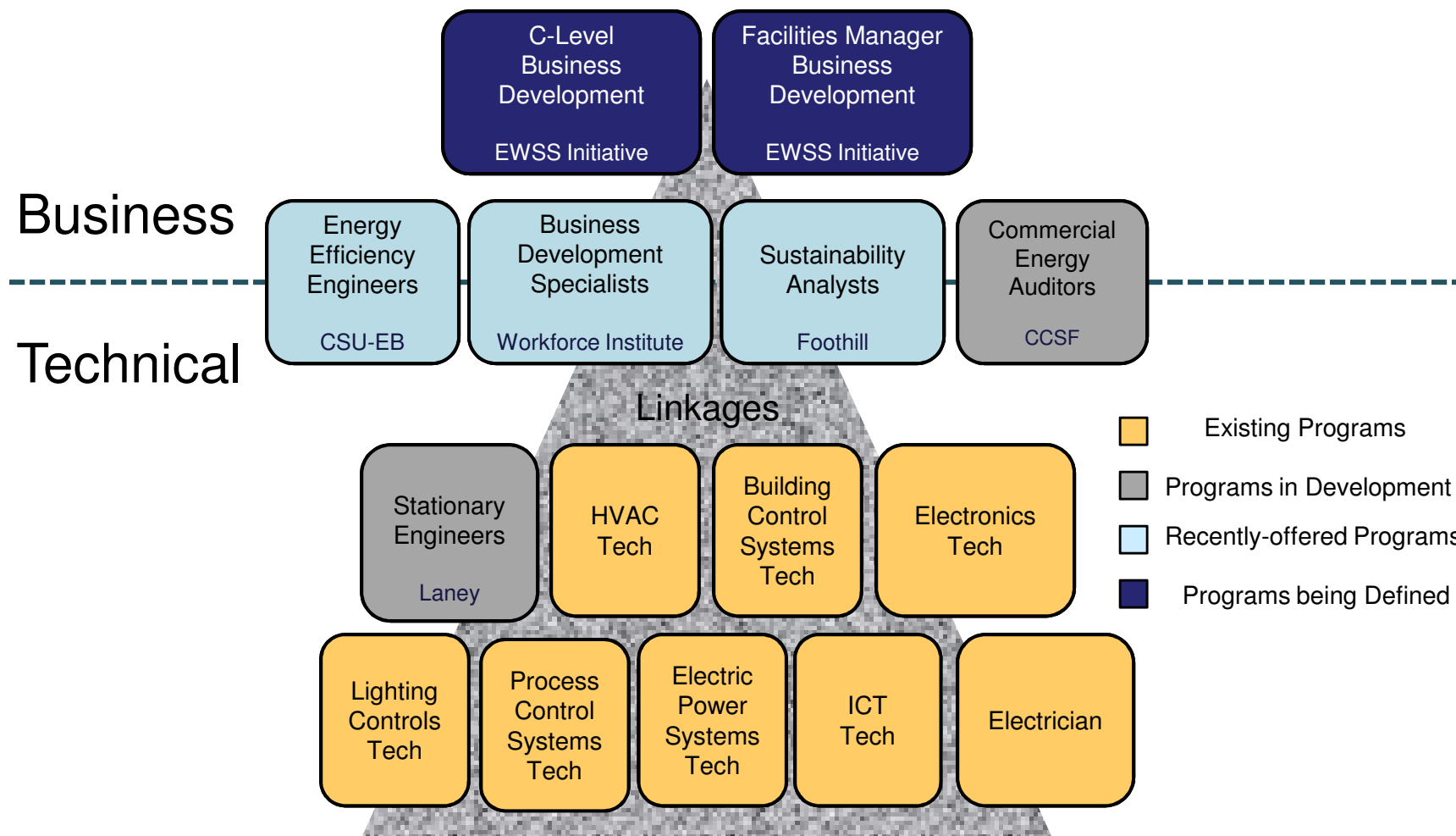
Highest Relevance to Energy Efficiency



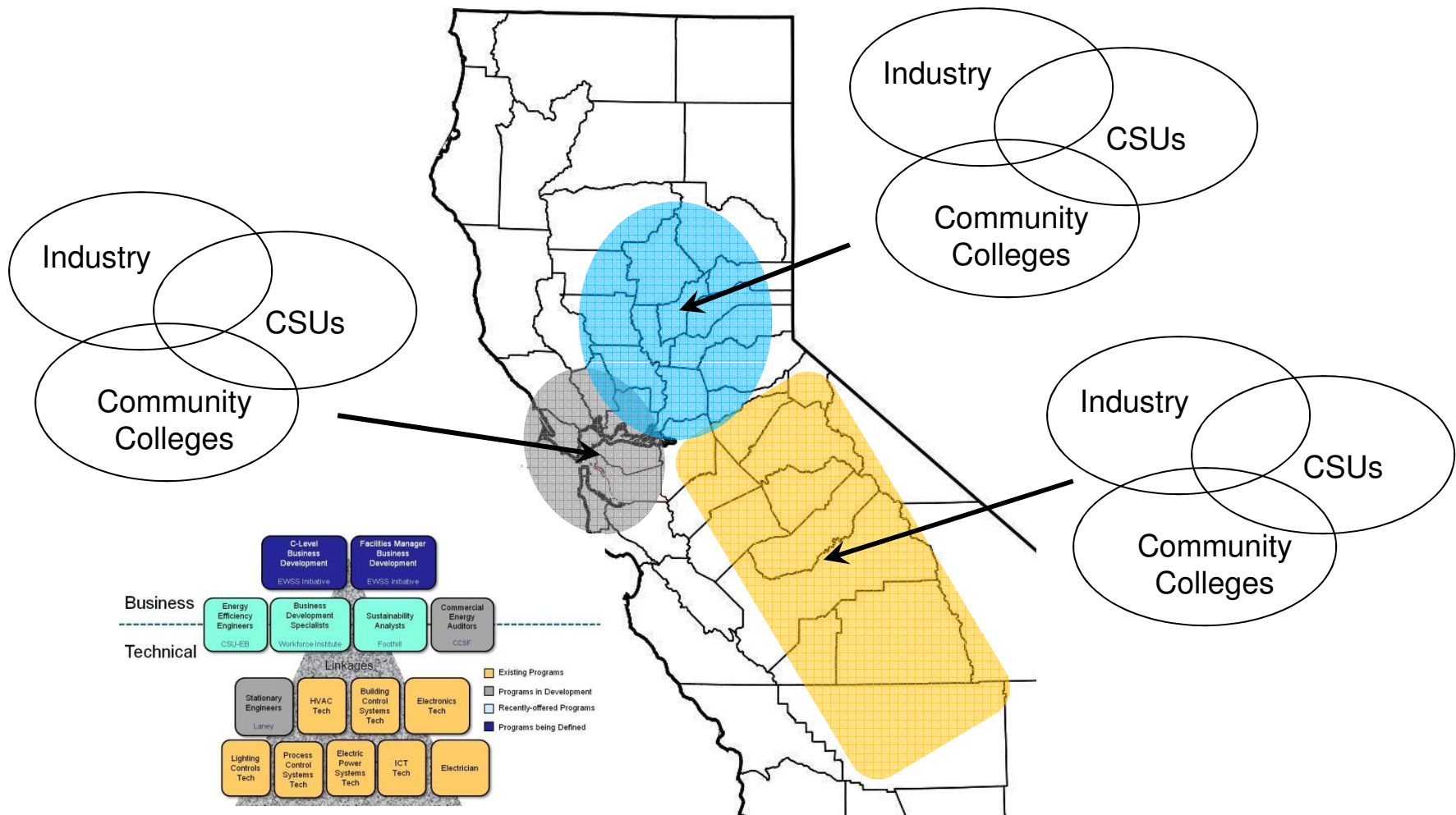
New Portal Content

- Career Pathways
 - *Tier 1 Colleges – programs and pathways*
 - *Education & training schedules*
 - *Opportunities for industry engagement*
- Recruiting Source
 - *Class graduation schedules*
 - *Link to resumes of graduates*
- Links to Other Programs
 - *IOU HVAC Strategy*
 - *CALCTP*
 - *Western Cooling Center*

Energy Efficiency Training Portfolio



Regional Alignment



Regional Prioritization

- Drive Market Growth
 - *Addressing Barriers*
 - *Capacity in Critical Jobs*
- Define Workforce Needs
 - *Incumbent Worker Up-skilling*
 - *New Employee Pipeline*
- Address Gaps
 - *Programs*
 - *Pathways*
 - *Subject Matter Expertise*
 - *Instruction*

Promote Regional Training



Professional Categories

Civil Engineers	318
Architects	225
General and Operations Managers	80
Construction Managers	79
Mechanical Engineers	64
Engineers, all other	62
Accountants & Auditors	31
Management Analysts	26
Environmental Engineers	25

CTE Categories

Electricians	309
Plumbers, Pipefitters, & Steamfitters	179
Carpenters	161
First Line Supervisors	129
Managers, all other	107
Cost Estimators	69
HVAC/R Mechanics & Installers	60
Construction & Building Inspectors	55
Sheet Metal Workers	45

Economic Modeling Specialists Inc., 2012

Adopt New Training Courses

Curriculum Available

- Integrated Energy Solutions
 - *120 hour course for engineers (CSU East Bay)*
- Commercial Energy Auditor
 - *Flexible course design for multiple applications (CCSF)*
- Energy Efficiency in Building Solutions
 - *80 hour course for Sustainability Analysts (Foothill)*

Regional Portal Updates

Create Broad Access to Information



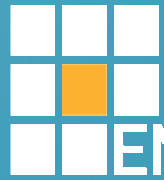
EWSS Team Contacts

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Utility Stakeholders

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Regulator, Industry Association Stakeholders

JD Stack, Workforce Incubator
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Industry, Contractor, Labor Stakeholders

Brad Hurte, Workforce Incubator
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Education Stakeholders



ENERGY WORKFORCE **SECTOR STRATEGY**



Thank You

Community College Program Intensity

EWSS Advisory Council Colleges		Units in Program Areas with Top 20 SOCs								
SOCs		47-2111	47-1011, 11-9021, 47-4011, 47-2211	17-1011	47-2031	49-9021	Total Units	Unique Job Count	Total Jobs	Units/Count *Jobs/1000
Annual Openings		331	261	225	201	63				Score
Community Colleges w/Tiered Programs	Region	1. Electricians	3. General Construction	5. Architecture	6. Carpentry	10. Energy/HVAC Technology				
Laney	Bay		103	104	69	105	381	4	750	71.44
Fresno City	Valley		118	108		114	340	3	549	62.22
Cosumnes River	North		130	74			204	2	486	49.57
Modesto Junior	Valley		90	60			150	2	486	36.45
San Francisco City	Bay	4	74	82		3	163	4	880	35.86
Butte	North		104				104	1	261	27.14
Hartnell	South		83		26		109	2	462	25.18
West Valley	Bay			100			100	1	225	22.5
Foothill	Bay	68				45	113	2	394	22.26

CSU Program Intensity

EWSS Advisory Council Colleges		Units in Program Areas with Top 20 SOCs										
SOCs		17-2051	47-1011, 11-9021, 47-4011, 47-2211	17-1011	13-1051, 17-2141	17-2071	17-2199	17-2081	Total Units	Unique Job Count	Total Jobs	Units/Count*Jobs/1000
Annual Openings		330	261	225	152	85	62	27				Score
CSUs w/Tiered Programs	Region	2. Civil Engr	3. General Constr	5. Architecture	8. Mech Engr	9. Electrical & Electronic Engineering	11. General Engr	13. Environmental Health Engineering				
San Luis Obispo	South	156	142	173	158	154	151	156	1090	7	1142	177.83
Sacramento	North	106	99		129	101			435	4	828	90.05
Chico	North	109	93		102	105			409	4	828	84.66
Fresno	Valley	67	53		129	130			379	4	828	78.45
San Jose	Bay	103			92	103	98		396	4	629	62.27
San Francisco	Bay	99			99	99			297	3	567	56.13
East Bay	Bay		120				143		263	2	323	42.47

Community College Pathway Candidates

College	Related SOCs	Rank		Contacts	
Laney	47-2031	5	Carpenters	Nick Kyriakopedi	Department Chair
	11-9199	6	Managers, all other	Peter Waring	Building Performance instructor
	11-1021	7	General and operations managers	Barbara Widhalm	NSF Project Manager
	47-1011	10	Heating, air conditioning, and refrigeration mechanics and installers	Peter Crabtree	Dean of Instruction
	49-9021	13	First-line supervisors/managers of constr. trades and extraction workers	Larry Chang	
	47-4011	14	Construction and building inspectors		
	13-2011	18	Accountants and auditors		
Fresno City	47-2111	2	Electricians	Natalie Culver-Dockins	
	47-2152	4	Plumbers, pipefitters, and steamfitters	Christopher Whiteside	CTE Dean
	47-2031	5	Carpenters		
	11-9199	6	Managers, all other		
	11-1021	7	General and operations managers		
	47-1011	10	First-line supervisors/managers of constr. trades and extraction workers		
	49-9021	13	Heating, air conditioning, and refrigeration mechanics and installers		
	47-4011	14	Construction and building inspectors		
	13-2011	18	Accountants and auditors		
Cosumnes River	17-1011	3	Architects, except landscape and naval	Ryan Connally	Professor, Construction Management
	11-9199	6	Managers, all other	Bob Johnson	Dean, Careers and Technology
	47-1011	10	First-line supervisors/managers of constr. trades and extraction workers		
	13-2011	18	Accountants and auditors		

Community College Pathway Candidates

College	Related SOCs	Rank		Contacts	
Modesto	47-2152	4	Plumbers, pipefitters, and steamfitters	Pedro Mendez	CTE Dean
	47-2031	5	Carpenters		
	47-1011	10	First-line supervisors/managers of constr. trades and extraction workers		
	47-2211	15	Sheet metal workers		
	13-2011	18	Accountants and auditors		
San Francisco	47-2111	2	Electricians	Gerald Bernstein	Director, ATTE
	47-2152	4	Plumbers, pipefitters, and steamfitters	Wendy Miller	Program Coordinator
	47-2031	5	Carpenters		
	11-9199	6	Managers, all other		
	11-1021	7	General and operations managers		
	47-1011	10	First-line supervisors/managers of constr. trades and extraction workers		
	49-9021	13	Heating, air conditioning, and refrigeration mechanics and installers		
	13-2011	18	Accountants and auditors		
Butte	11-9199	6	Managers, all other	Denise Adams	Dean, Student Learning
	47-1011	10	First-line supervisors/managers of constr. trades and extraction workers		
	47-4011	14	Construction and building inspectors		
	13-2011	18	Accountants and auditors		

Community College Pathway Candidates

College	Related SOCs	Rank		Contacts	
Hartnell	47-2111	2	Electricians	Michael Thomas	CTE Dean
	47-2152	4	Plumbers, pipefitters, and steamfitters	Atallah Zahi	EWD/Adv Tech Dean
	47-2031	5	Carpenters	John Anderson	Faculty
	47-1011	10	First-line supervisors/managers of constr. trades and extraction workers		
	47-4011	14	Construction and building inspectors		
	47-2211	15	Sheet metal workers		
	13-2011	18	Accountants and auditors		
West Valley	17-1011	3	Architects, except landscape and naval	David Esmaili	CTE Dean
	11-9199	6	Managers, all other		
	13-2011	18	Accountants and auditors		
Foothill	47-2111	2	Electricians	Catherine Ayers	Project Manager
	47-2152	4	Plumbers, pipefitters, and steamfitters	Robert Cormia	Instructor
	11-1021	7	General and operations managers	Reg Duhe	Dir, Bus & Ed Partnerships
	47-1011	10	First-line supervisors/managers of constr. trades and extraction workers	John Mummert	CTE Dean
	49-9021	13	Heating, air conditioning, and refrigeration mechanics and installers	Peter Murray	EWD/Adv Tech Dean
	13-2011	18	Accountants and auditors		

CSU Pathway Candidates

CSU	SOC	Program Areas	Annual Openings	Credential		Contacts	
SLO	17-2051,17-2141,17-2071,17-2199,17-2081	Civil, Mech, Elec, and Genl Engineering	629	BS	MS	Debra Larson	Dean of Engineering
	11-9021,11-1021	General Construction, Business Mgmt	496		MS	Art MacCarley	Professor
	11-9021,11-9199,11-1021	General Construction, Business Mgmt	496	BS	MBA	Brian Tietje	Vice Provost
	11-9021,11-9199,11-1021	General Construction, Business Mgmt	496	Option		Rakesh Goel	Associate Dean of Engineering
	17-2051	Civil Engineering	330	BS			
	17-2051	Civil Engineering	330		Option		
	17-2051	Civil Engineering	330		MS		
	11-1021	Business Management	235	Option			
	11-9199,11-1021	Business Management	235		MPP		
	11-9199,11-1021	Business Management	235	Option			
	17-1011	Architecture	225		MS		
	17-1011	Architecture	225		MS		
	17-2141	Mechanical Engineering	152	BS	MS		
	17-2071	Electrical Engineering	85	BS	MS		
	17-2199	General Engineering	62		Option		
	13-2011	Accounting & Finance	32	Option			
	13-2011	Accounting & Finance	32	Option			
	17-2081	Environmental Engineering	27	BS			

CSU Pathway Candidates

CSU	SOC	Program Areas	Annual Openings	Credential		Contacts	
Sacramento	11-9021,11-9199,11-1021	General Construction, Business Mgmt	496	BS	MBA	Guido Krickx	Dean of Extended Education
	17-2051	Civil Engineering	330	BS	MS	Emir Macari	Dean of Engineering
	11-1021	Business Management	235	Option		Jenni Murphy	Sr. Dir. Strategic Comm & Emerging Markets
	11-9199,11-1021	Business Management	235		MPPA		
	11-9199,11-1021	Business Management	235	Option			
	17-2141	Mechanical Engineering	152	BS	MS		
	13-2011	Accounting & Finance	32	Option			
	13-2011	Accounting & Finance	32	Option	MS		
	13-2011	Accounting & Finance	32	Option	Option		
Chico	11-9021,11-9199,11-1021	General Construction, Business Mgmt	496	BS	MBA	Debra Barger	Dean of Extended Education
	11-9021,11-9199,11-1021	General Construction, Business Mgmt	496	Option		Mike Ward	Dean of Engineering
	17-2051	Civil Engineering	330	BS			
	11-9199	Business Management	235	Option			
	11-9199	Business Management	235	Option			
	11-9199,11-1021	Business Management	235	BA	MPA		
	17-2141	Mechanical Engineering	152	BS			
	13-2011	Accounting & Finance	32	Option			
	13-2011	Accounting & Finance	32	Option			
	13-2011	Accounting & Finance	32	Option			

CSU Pathway Candidates

CSU	SOC	Program Areas	Annual Openings	Credential		Contacts	
Fresno	17-2051,17-2141,17-2071,17-2199,17-2081	Civil, Mech, Elec, and Genl Engineering	629		MS	Walter Mizuno	Co-Director UCAM
	11-9021,11-9199,11-1021	General Construction, Business Mgmt	496	BS	MBA	Ram Nunna	Dean of Engineering
	11-9021,11-9199,11-1021	General Construction, Business Mgmt	496	Option		Lynnette Zelezny	Dean of Extended Education
	17-2051	Civil Engineering	330	BS	MS		
	11-1021	Business Management	235	Option			
	11-9199,11-1021	Business Management	235	BA	MPA		
	11-9199,11-1021	Business Management	235	Option			
	17-2141	Mechanical Engineering	152	BS	Option		
	17-2071	Electrical Engineering	85	BS	Option		
	13-2011	Accounting & Finance	32	Option	MS		
	13-2011	Accounting & Finance	32	Option			
San Jose	17-2051,17-2141,17-2071,17-2199,17-2081	Civil, Mech, Elec, and Genl Engineering	629	BS	MS	Ping Hsu	Dean of Engineering
	11-9021,11-9199,11-1021	General Construction, Business Mgmt	496	BS	MBA	Mark Novak	Dean of Extended Education
	11-9021,11-9199,11-1021	General Construction, Business Mgmt	496	Option			
	17-2051	Civil Engineering	330	BS	MS		
	17-2051	Civil Engineering	330		MS		
	11-1021	Business Management	235	Option			
	11-9199,11-1021	Business Management	235		MPA		
	11-9199,11-1021	Business Management	235	Option			
	17-2141	Mechanical Engineering	152	BS	MS		
	17-2071	Electrical Engineering	85	BS	MS		
	13-2011	Accounting & Finance	32	Option			
	13-2011	Accounting & Finance	32	Option	MS		
	13-2011	Accounting & Finance	32	Option			
	13-2011	Accounting & Finance	32	Option			
	13-2011	Accounting & Finance	32		MST		

CSU Pathway Candidates

CSU	SOC	Program Areas	Annual Openings	Credential		Contacts	
San Francisco	17-2051,17-2141,17-2071,17-2199,17-2081	Civil, Mech, Elec, and Genl Engr	629		MS	Susan Propst	
	11-9021,11-9199,11-1021	General Constr, Business Mgmt	496	BS	MBA	Wenshen Pong	Dir, School of Engineering
	11-9021,11-9199,11-1021	General Constr, Business Mgmt	496	Option		Sheldon Axler	Dean of Engineering
	17-2051	Civil Engineering	330	BS	Option	Jose Galvan	Dean of Extended Education
	17-2051	Civil Engineering	330		Option		
	11-9199	Business Management	235	BS			
	11-9199,11-1021	Business Management	235		MPA		
	17-2141	Mechanical Engineering	152	BS			
	17-2071	Electrical Engineering	85	BS			
	17-2199	General Engineering	62		Option		
	13-2011	Accounting & Finance	32	Option	MS		
	13-2011	Accounting & Finance	32	Option			
East Bay	17-2051,17-2141,17-2071,17-2199,17-2081	Civil, Mech, Elec, and Genl Engr	629	BS		Michael Leung	Dean, College of Science
	11-9021,11-9199,11-1021	General Constr, Business Mgmt	496	BS	MS, MBA	Saied Motavalli	Chair, Engineering
	11-9199,11-1021	Business Management	235	Option	MPA	Brian Cook	Dean of Extended Education
	11-9199,11-1021	Business Management	235	Option	Option		
	13-2011	Accounting & Finance	32	Option			
	13-2011	Accounting & Finance	32	Option	Option		
	13-2011	Accounting & Finance	32		MS		

Executive Committee

- Denise Adams – Butte College
- Jerry Bernstein - City College of San Francisco
- Darlene Besst – NECA
- Natalie Culver-Dockins – Fresno City College
- Harvey DeLorm – CSU Facilities Apprenticeship Program
- Chris Graillat – California Energy Commission
- Robert Marcial – PG&E Pacific Energy Center
- Kevin O'Brien – Energy Commercialization, Inc.
- Lisa Paulo – California Public Utility Commission
- Sheila Thomas – CSU Chancellor's Office