
Building a green economy: workforce opportunities and challenges



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Outline

- Drivers of economic change towards a green economy
- Growth industries
- Vulnerable Industries
- Inform discussions of what the legislature and administration can do to promote both a low carbon and a good jobs economy



Drivers of Economic Change— what is steering us to green economy?

- AB 32 and companion policies— force structural change through regulations, thru higher energy prices, and a price on carbon
- Green innovation—venture capital/private investment
- ARRA –helps drive change through targeted public investment

Drivers of Economic Change

Jobs in California in 2006	17,000,000
AB 32 (ARB model for 2020)	100,000
Jobs in green-tech businesses (Collaborative Economics)	100,000
Economic crisis 2007-2009 (EDD)	-600,000
ARRA in California (recovery.gov)	396,000
Clean energy/green jobs 14% (apollo alliance)	[57,000]

Job growth (AB 32 and other policies)

- Savings to households from EE policies, spent throughout the economy (driver of ARB forecast)
- Job creation from substituting away from fossil fuel energy use:
 - Building EE, Renewables, alternative transportation, biofuels, transmission modernization, etc.

Construction: key sector for energy efficiency

- Feb 2007 employment: 912,000
- Feb 2009 employment: 681,000
- Seasonal, often low-wage, hazardous work
- More than 40% workers uninsured part of year
- Construction workers are 15% of CA chronically uninsured, 7.3% of workforce
- Source: EDD, CPI

High road or low road?

Source: CPS	Union (public, some commercial)	Non-union (residential, some commercial)
Weekly wages	\$1,014	\$668
Health insurance	89%	61%
Training	2-5 years	??

Coordination between apprenticeship and community colleges

- Lots of new programs, new certificates
- Some good models– pre-apprenticeship, continuing education, construction college– build on the strength of each system
- No overall framework for how different pieces of the state’s training and education programs fit together
- Efficiency regulations not always coordinated with workforce development

New coordination opportunities in the state

- Green Jobs Council -- charged with coordinating all green jobs training in state, including high school, community college, 4 year college, apprenticeship, preapprenticeship
- AB 118 – Sector approach to alternative transportation investments with explicit link to job training
- These are investments in planning and workforce development infrastructure that can last long after ARRA
- Should be done for energy efficiency, renewables as well. Each should have “master plan” for training and education

Vulnerable industries– heavy emitters

- Regulations and carbon pricing raise production costs
- If production is cut, what happens to workers?
- If new technologies are adopted, what kind of retraining do workers need? (ex. Biofuels in oil refineries?)

Industries with highest carbon content

NAICS	manufacturing industry name	Average Employment 2006
325	Chemicals	84366
311	Food	150179
327	Nonmetallic Mineral Products	47186
322	Paper	27553
324	Petroleum and Coal Products	14905
331	Primary Metals	25243
313	Textile Mills	12400
321	Wood Products	36420
	Total	398,252

Worker transition assistance

- Since leakage will probably be very small, we can afford to help workers
- Like TAA
- Retraining and bridges to retirement

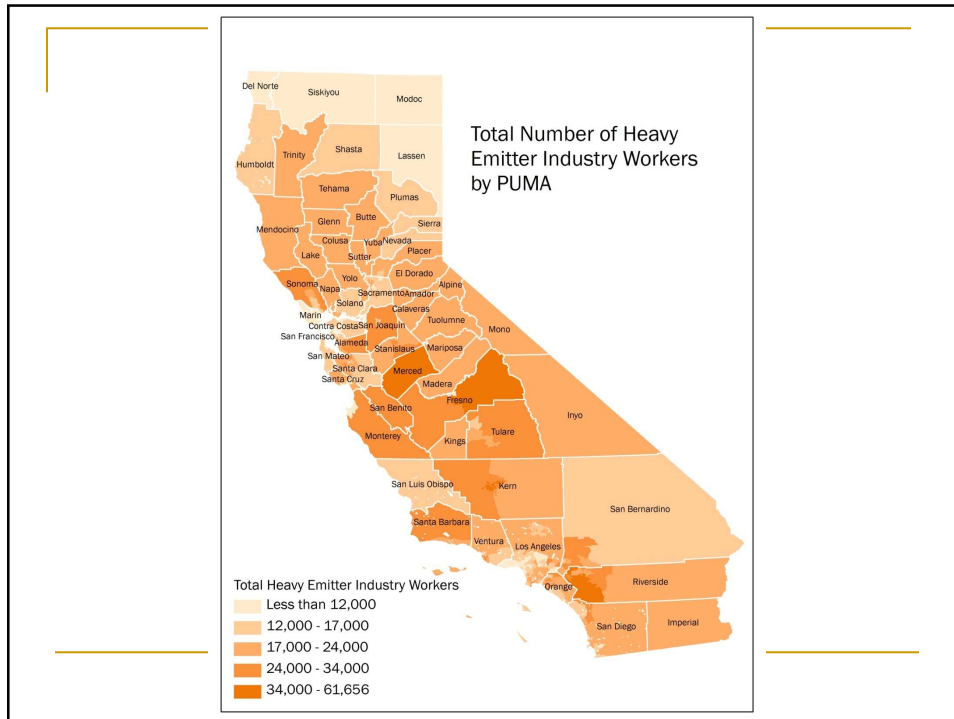
Heavy emitter industries

Heavy emitting industries	CA jobs	Union density
Construction	1,210,000	21%
Manufacturing (certain sectors)*	980,000	11%
Logistics & Transportation	260,000	36%
Agriculture, Livestock, Forestry	240,000	5%
Water, Waste & Sewage	70,000	41%
Electricity & Gas	60,000	42%
Mining & Extraction	20,000	17%
Cement & Lime	20,000	20%
All heavy emitter industries	2,860,000	16%
(New green products	100,000)	
All CA jobs	17,700,000	

* Electronics, pharmaceuticals, machinery, metals, minerals, paper products, textiles, wood products, transport equipment, food & beverages
Source: 2006 Quarterly Census of Employment and Wages; Current Population Survey; California Economic Strategy Panel

Median Wages for non-professional workers in heavy emitting industries

- Heavy emitters \$16.49 per hour
- All CA industries \$13.93 per hour



Conclusion

- Time of huge opportunity
- For growth industries, need to make sure we align workforce devt and specific industry policy to make sure we support the high road
- For vulnerable industries, need to pay attention to leakage, pay as much attention to workforce devt as technology devt, and provide transition assistance, including retraining, to dislocated workers