

Criteria for Sector Selection – Manufacturing SECTOR		
San Diego/Imperial Counties Region		
	Evidence	Document
Sector Relevance to Region		
Employment Potential		
Relative Growth	A 13% job growth in advanced manufacturing, representing approximately 22,200 jobs projected between 2010 and 2020.	Internal draft - "Advance Manufacturing " - Research Partnership for San Diego Workforce Partnership and SDICCCA
Absolute Growth	Currently there are approximately 350,000 manufacturing related jobs in the region with an expected growth of another 13,000 over the next six years.	Internal draft - "Advance Manufacturing " - Research Partnership for San Diego Workforce Partnership and SDICCCA. SANDAG Report 2012
Regional Concentration	This sector is represented throughout the San Diego and Imperial sectors	Based on SANDAG 2012 Report and CACT-SD database of industries
Number of jobs projected (replacement/new)	22,200 jobs projected between 2010 and 2020. The manufacturing sector includes a wide range of occupations and service areas from food manufacturing to maritime to clean tech. The resurgence of in-sourcing and the focus and commitment from the white house including a \$135 billion budget for research and development in this sector has created a surge of employment and overall growth in this sector.	Internal draft - "Advance Manufacturing " - Research Partnership for San Diego Workforce Partnership and SDICCCA. SANDAG Report 2012
Financial Value	Advanced manufacturing even in its most narrow definitions represents 41 billion of San Diego's Gross Regional Product, which is 23% of the total GDP	Internal draft - "Advance Manufacturing " - Research Partnership for San Diego Workforce Partnership and SDICCCA
Number of companies/EMPLOYMENT TOTAL	Currently there are approximately 350,000 manufacturing related jobs in the region with an expected growth of another 13,000 over the next six years.	Internal Draft BW Research
Sales Volume/Investment	Advanced manufacturing even in its most narrow definitions represents 41 billion of San Diego's Gross Regional Product, which is 23% of the total GDP. Clean tech which is also included in the manufacturing cluster represents over \$1.9 billion investment in San Diego.	Based on SANDAG 2012 Report
Need for training to expand workforce in high skill/high wage jobs.		
<i>Identified skills gap</i>	Because the manufacturing sector is so broad this is a challenging assessment. Currently there appears to be an under	Internal draft - "Advance Manufacturing " - Research Partnership for San Diego Workforce

	supply of production workers, that category includes assemblers and fabricators; machinist, welders, CNC operators, metal and plastic. In addition to this group there is a great need to prepare individuals who are in manufacturing related fields for sub-sector specific training. For instance an engineering student is encouraged to select blue tech/maritime, utilities, clean tech, bio manufacturing etc. and then have some specific training and education that prepares them for the nuances of that field.	Partnership and SDICCCA. SANDAG Report 2012 DSN Manufacturing Advisory Council
<i>“Living” wage potential</i>	This sector offers a wide range of salaries with the average landing around \$60,000. The Bio-manufacturing related jobs average above \$100,000 per year. Both Cleantech and Aerospace, Navigation and Maritime have higher than average annual salaries. Precision Manufacturing is showing as slightly higher than average and Apparel manufacturing and microbreweries are showing slightly lower but still sustainable wages.	SANDAG REPORT 2012
<i>Can be met by community college</i>	The community college is equipped to meet the needs, particularly in the production worker gap. Currently City College has the only community college program leading to an Associates Degree. However, there is non-credit and fee based options that have developed partnerships with other community colleges and four year universities to address the growing need in manufacturing. There are now multiple machinist programs working to decrease the great gap in machinist in our county.	DSN Regional Study and Internal draft research report
<i>Need for incumbent worker training</i>	There has always been a great need for incumbent worker training and various community colleges have been serving the incumbent worker for years. CACT-SD hosts trainings for approximately 300 incumbent workers from various sub-sectors each year. There is a growing need and movement toward the development of more stackable certificates that include overlays to address the nuances of specific sub-sectors within the sector.	DSN Regional Study
Potential Career Pathway development and alignment in the region		
<i>Evident career ladder</i>	Career ladders are evident in advanced manufacturing in both the CTE and Academic program side throughout the region. Those areas include engineering, robotics, clean tech field,	

	biomanufacturing, machining, and construction.	
<i>Articulation potential</i>	Most colleges in region have programs related to advanced manufacturing with inclusion of all its sub-sectors. There are construction academies, engineering academies, robotics programs, energy academies, machine shops, and a maritime academy within the local high school programs..	College catalogs and program websites for all colleges in the region. District CTE list of high school programs.
<i>WBL (Work Based Learning) – apprenticeship/internship</i>	Varied trainer and apprenticeship programs, including San Diego City College, Mira Costa, Cuyamaca, San Diego Miramar College,	College catalogs and program websites
Ability to support other sectors		
<i>Advanced Manufacturing</i>		CACT Report; communication with San Diego Regional Clean Fuels Coalition
<i>Advanced Transportation – Renewable Energy</i>	Wide range of overlap, for example over 700Biomanufacturing firms in region – an important portion of which address biofuels; also new product companies in region such as Transpower – integrating electric vehicle with heavy duty vehicle technology	CACT Report; ATRE report
<i>Agriculture, Water, & Environmental Tech</i>	According to SANDAGS 2012 report on manufacturing related traded clusters food manufacturing is one of the largest manufacturing subsectors in our region. In addition Environmental training has become an integral part of the manufacturing program and represents an increasing request for training and support from our manufacturing partners	CACT Report
<i>Energy (Efficiency) & Utilities</i>	The manufacturing and engineering programs like that at City College include HVAC, Electrical, Solar. In addition green manufacturing and green energy have been integrated into all of City College’s manufacturing related programs.	CACT Report, City College Website
<i>Global Trade & Logistics</i>	Global Trade and logistics are key partners to the manufacturing sector	CACT-SD/City College & Southwest College
<i>Health</i>	Medical device manufacturing is a robust industry in the San Diego Region	SANDAG 2012
<i>ICT/Digital Media</i>	There is great overlap between ICT and manufacturing. Computer and Software related occupations are one of the fastest growing fields in advanced manufacturing.	Internal draft - "Advance Manufacturing " - Research Partnership for San Diego Workforce Partnership and SDICCCA
<i>Life Sciences/Biotech</i>	Bio-Manufacturing is one of the 5 key manufacturing sub-sectors as identified by SANDAG.	SANDAG 2012 Traded Clusters Report

<i>Retail/Hospitality/Tourism “Learn andEarn”</i>	Clothing, microbrewers and sporting manufacturing are also part of San Diego’s strong manufacturing sectors	SANDAG 2012 Traded Clusters Report
<i>Small Business</i>	Nearly 95 percent of businesses in San Diego County are small businesses. It is therefore imperative that we understand the challenges they face in doing business and adding jobs in our region. Most business will start as a sole proprietor and many machining, welding, HVAC, electrical and engineering professionals will either work for a small business or work as consultants/contractors or small business owners themselves. As a result CACT-SD at San Diego City College operates the San Diego Technology Incubator supporting small business start ups.	SANDAG, CACT Report

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