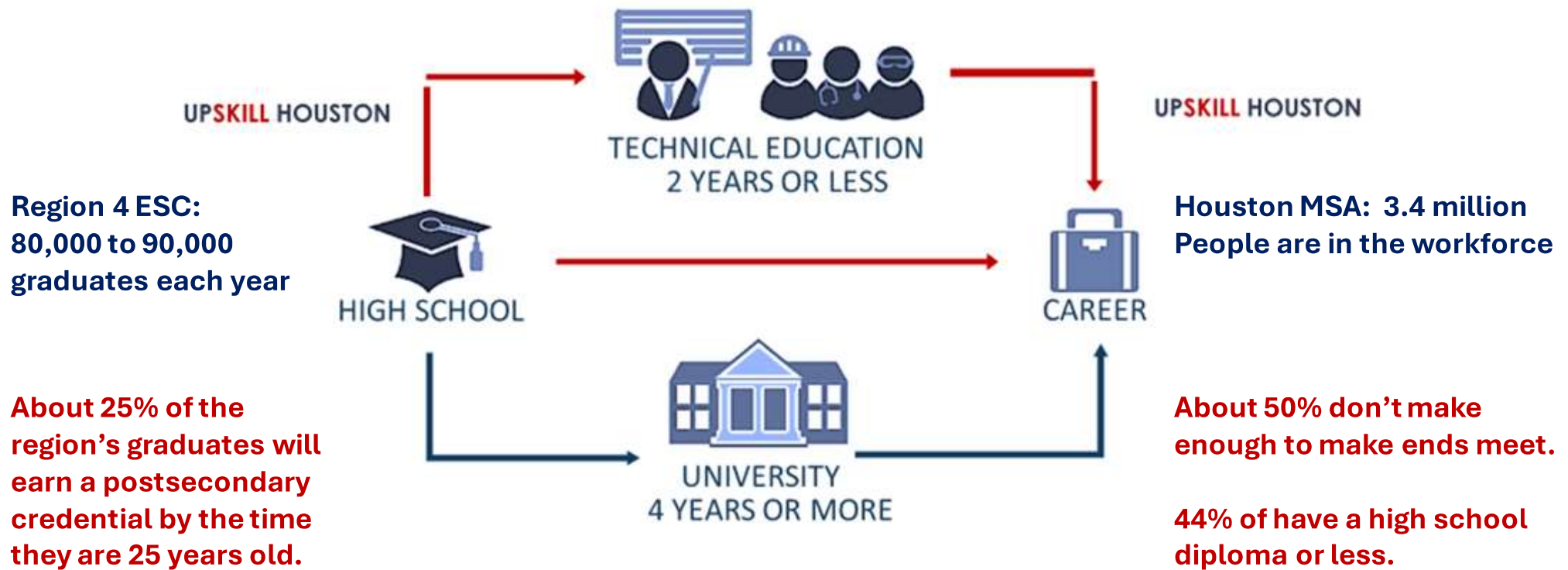
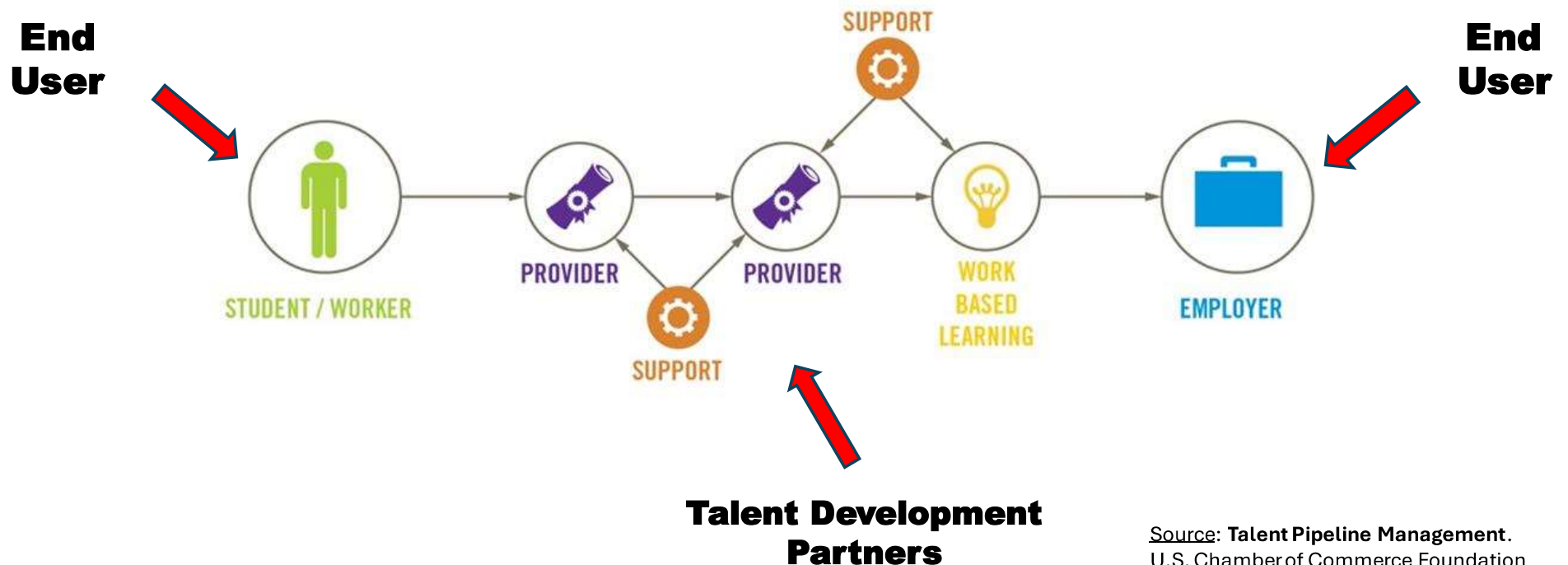


Develop “work-ready” pipelines of skilled talent

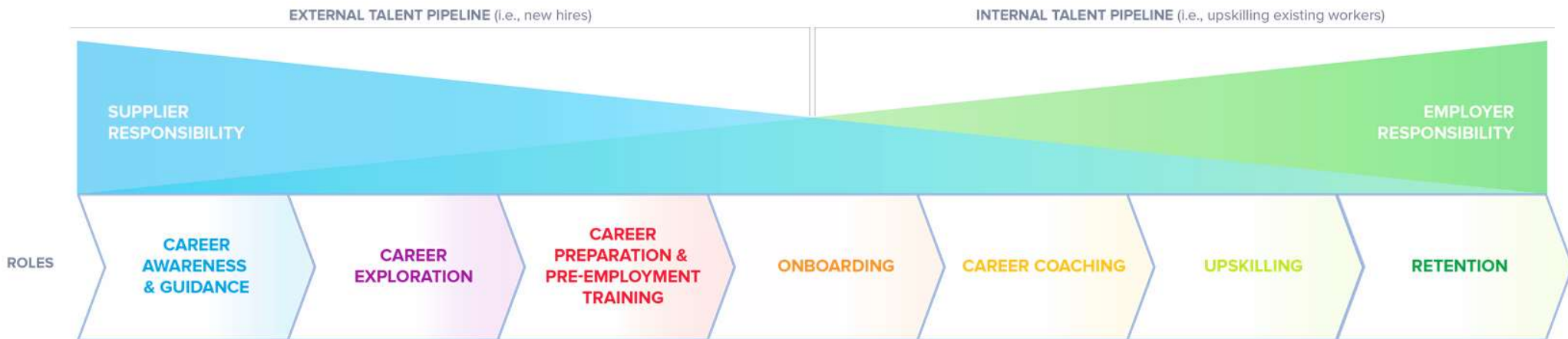


It takes a Team to align and support Students/Workers through the Education and Workforce Systems to get to an Employer



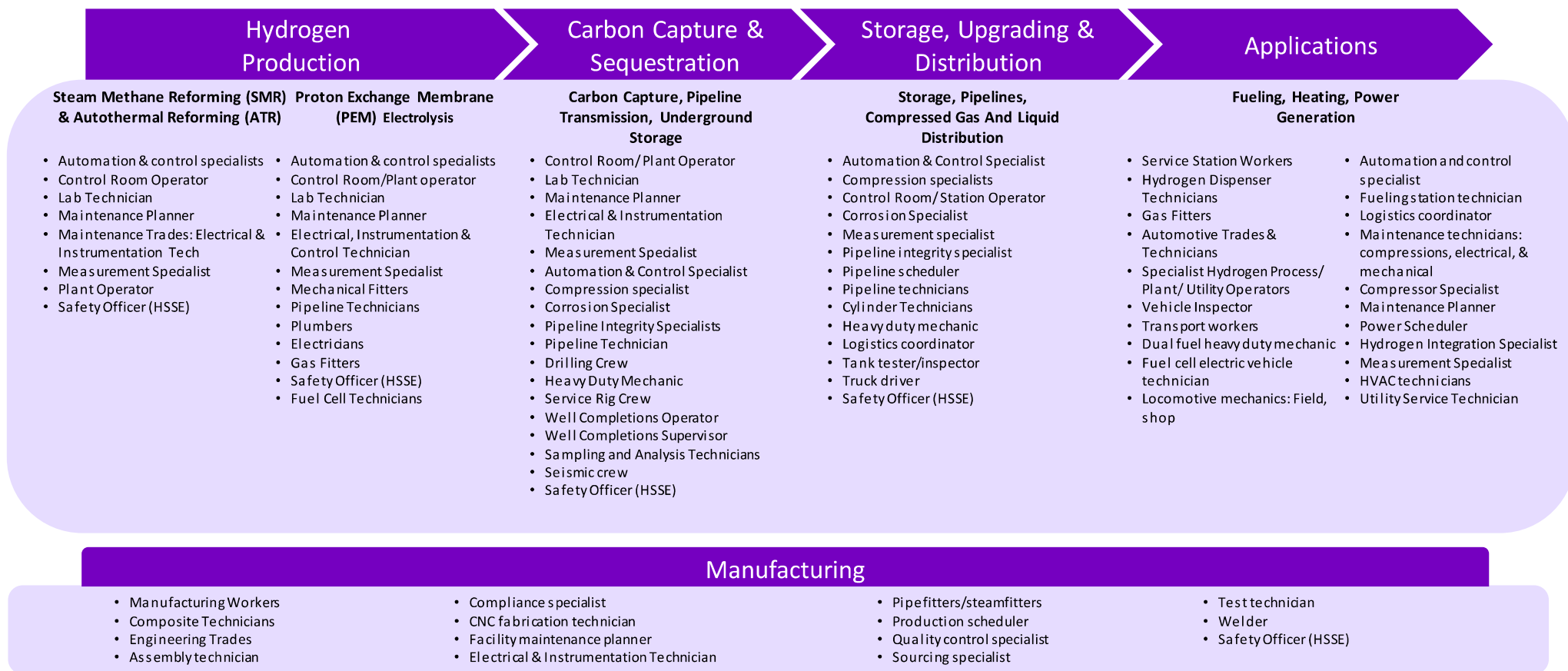
Source: Talent Pipeline Management.
U.S. Chamber of Commerce Foundation

The Value Stream



Source: Talent Pipeline Management.
U.S. Chamber of Commerce Foundation

Many middle-skilled jobs will be created across Houston's H₂ value chain

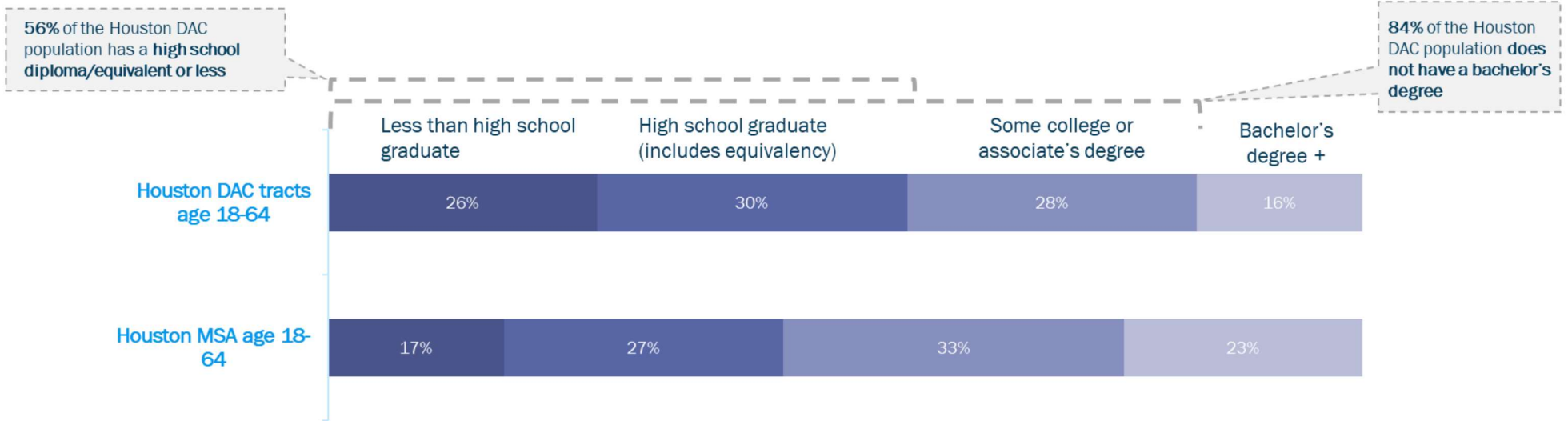


Source: 1. Accenture analysis, 2. Hydrogen Program Plan, [Department of Energy](#), 3. Assessing the Workforce Required to Advance Canada's Hydrogen Economy, [The Transition Accelerator](#)

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Educational attainment of Houston's DAC population should guide the selection of top priority, middle-skill H2 roles


DACs vs Houston MSA Educational Attainment



Source: Educational Attainment, [US Census Bureau](#)

DAC members have the skill base for H₂ jobs, connecting the dots is the next step

Job	BLS Title	Description ¹	Education Pathways ^{1,2}
Automotive Service Technicians and Mechanics	Automotive Service Technicians and Mechanics	Repair and maintain vehicles	Technical program preferred, High school diploma or equivalent
Bookkeeping, Accounting, and Auditing Clerks	Bookkeeping, Accounting, and Auditing Clerks	Maintain financial records and ensure accuracy of financial transactions	No formal educational credential, high school diploma or equivalent
Carpenters	Carpenters	Construct and repair building frameworks and structures	Apprenticeship or OTJ training
Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	Set up and operate machines that coat, paint, or spray products and surfaces	High school diploma or equivalent
Computer Numerically Controlled Tool Operators	Computer Numerically Controlled Tool Operators	Use computer-controlled machines to produce precision metal parts and components	High school diploma or equivalent
Construction Laborers	Construction Laborers	Assist in physical construction tasks on job sites	No formal educational credential, high school diploma or equivalent
Control and Valve Installers and Repairers	Control and Valve Installers and Repairers, Except Mechanical Door	Install and repair control and valve systems used in various industries	High school diploma or equivalent
Dispatchers	Dispatchers, Except Police, Fire, and Ambulance	Coordinate transportation or emergency services	High school diploma or equivalent
Electrical, Electronic, and Electromechanical Assemblers	Electrical, Electronic, and Electromechanical Assemblers, Except Coil Winders, Tapers, and Assemble Finishers	Assemble electrical and electronic components	High school diploma or equivalent
Electricians	Electricians	Install and maintain electrical systems in residential, commercial, and industrial settings	High school diploma or equivalent, apprenticeship or vocational school
First-Line Supervisors of Office and Administrative Support Workers	First-Line Supervisors of Office and Administrative Support Workers	Supervise and coordinate the activities of administrative and clerical staff	High school diploma or equivalent
First-Line Supervisors of Retail Sales Workers	First-Line Supervisors of Retail Sales Workers	Supervise and coordinate the activities of retail sales staff	High school diploma/GED or Associate's degree

 Source: 1. Occupational Outlook Handbook, [Bureau of Labor Statistics](https://www.bls.gov) 2. LaborInsights

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Skills for H₂ jobs and targeted DACs significantly overlap

Accounting & Finance	Accounting Budget Management Cost Management Expense Reporting Numeracy Purchasing	Technical Skills	Chemical Processing Cleaning Electrical Wiring Electronic Repair Equipment Calibration Equipment Maintenance Heavy Equipment Repair	
Data Management & Analysis	Data Analysis Data Entry Demand Forecasting Document Management		Hydraulics Instrumentation Maintenance Management Mechanical Equipment Maintenance	
Technology & Software	Digital Literacy Microsoft Excel Microsoft Power BI Python SAP SQL Tableau Software		Pipefitting Soldering Testing Welding Forklift Operation Hand Tool Operation	
Project & Time Management	Coordination Project Management Scheduling Time Management		Heavy Equipment Operation Machine Operation Physically Fit	
Operations Management	Inventory Management Logistics Production Planning Supply Chain Management		Quality Control and Assurance	Quality Assurance Quality Control Adaptability Collaboration Communication
	Training & Development		Interpersonal Skills	Customer Service Interpersonal Responsibility Supervision Teamwork
	Occupational Health and Safety			Problem-Solving Skills
Regulatory Compliance	Hazardous Analysis Hazardous Materials Identification System Incident Investigation Occupational Safety and Health Act Safety Safety Auditing Safety Training Workplace Safety Planning Risk Assessment		Hydrogen-Specific Skills	
	Compliance Auditing Internal Audit Regulations Enforcement			
	Regulatory Compliance			

We identified the skills and proficiencies required for our priority H₂ jobs and estimated the expected proficiency for each of the most common jobs held by those in DACs




Role	Accounting & Finance				Data Management & Analysis				Technology & Software			
	Accounting	Budget Management	Cost Management	Expense Reporting	Numeracy	Purchasing	Data Analysis	Data Entry		Demand Forecasting	Document Management	Digital Literacy
	<ul style="list-style-type: none"> No proficiency Entry Level Intermediate Experienced 											
Bookkeeping, Accounting, and Auditing Clerks	Experienced	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate
Cashiers	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate
Construction Laborers	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate
Customer Service Representatives	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate
Fast Food and Counter Workers	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate
Heavy and Tractor-Trailer Truck Drivers	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate
High School/GED/ Unemployed	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate
Inspectors, Testers, Sorters, Samplers, and Weighers	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate
Laborers and Freight, Stock, and Material Movers, Hand	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate
Landscaping and Groundskeeping Workers	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate
Maintenance and Repair Workers, General	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate
Miscellaneous Assemblers and Fabricators	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate
Office Clerks, General	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate
Receptionists and Information Clerks	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate
Retail Salespersons	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate
Shipping, Receiving, and Inventory Clerks	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate
Stockers and Order Fillers	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate
Waiters and Waitresses	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate
Welders, Cutters, Solderers, and Brazers	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate

DAC roles are matched to priority H₂ roles




H ₂ Role	Avg Salary ⁴	Risk of Automation	Employment Change	DAC Job Match	Match %	DAC Population Estimate	Avg Salary ⁴	Risk of Automation	Employment Change
 H ₂ Instrument and Electrical Technician	\$80k*	Med	8%	Electricians	74%	13K	\$53k	Low	14%
				Maintenance and Repair Workers, General	67%	11K	\$44k	High	14%
				Automotive Service Technicians and Mechanics	82%	5K	\$47k	Med	8%
				Computer Numerically Controlled Tool Operators	78%	2K	\$43k	Low	-2%
				Electrical, Electronic, and Electromechanical Assemblers, Except Coil Winders, Tapers, and Finishers	67%	2K	\$39k	Med	7%
 H ₂ Mechanical Technician	\$70k*	Low	11%	Construction Laborers	69%	28K	\$37k	High	19%
				Plumbers, Pipefitters, and Steamfitters	85%	9K	\$56k	Low	17%
				Automotive Service Technicians and Mechanics	85%	5K	\$47k	Med	8%
				Machinists	92%	4K	\$52k	Med	11%
				Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	83%	2K	\$40k	Low	12%
 H ₂ Operator	\$75k	Med	-19%	Operating Engineers and Other Construction Equipment Operators	76%	10K	\$48k	High	17%
				Plumbers, Pipefitters, and Steamfitters	80%	9K	\$56k	Low	17%
				Automotive Service Technicians and Mechanics	80%	5K	\$47k	Med	8%
				Service Unit Operators (wireline), Oil and Gas	83%	4K	\$48k*	High	19%
				Packaging and Filling Machine Operators and Tenders	61%	2K	\$33K	High	8%
 H ₂ & CCUS Rig Crew Hand	\$56k	High	19%	Construction Laborers	74%	28K	\$37k	High	19%
				Maintenance and Repair Workers, General	69%	11K	\$44k	High	14%
				Carpenters	76%	9K	\$48k	Med	15%
				Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	82%	2K	\$40k	Low	12%
				Control and Valve Installers and Repairers, Except Mechanical Door	79%	1K	\$50k	Med	15%

Source: 1. LaborInsights, 2020 Average Texas Salary
 GREATER HOUSTON PARTNERSHIP. *Adjustment made from SME input and Accenture Analysis

Each H₂ role has a sizable candidate pool

H ₂ Role	Avg Salary ⁴	Risk of Automation	Employment Change	DAC Job Match	Match %	DAC Population Estimate	Avg Salary ¹	Risk of Automation	Employment Change
 H ₂ Welder	\$65k*	High	13%	Construction Laborers	60%	28K	\$37k	High	19%
				Maintenance and Repair Workers, General	65%	11K	\$44k	High	14%
				Welders, Cutters, Solderers, and Brazers	78%	8K	\$49k*	High	13%
				Automotive Service Technicians and Mechanics	74%	5K	\$47k	Med	8%
				Machinists	82%	4K	\$48k*	Med	11%
 H ₂ Maintenance Planner	\$85k*	Low	13%	Electricians	59%	13K	\$53k	Low	14%
				Maintenance and Repair Workers, General	57%	11K	\$44k	High	14%
				Plumbers, Pipefitters, and Steamfitters	66%	9K	\$56k	Low	17%
				Welders, Cutters, Solderers, and Brazers	52%	8K	\$51k	High	13%
				Production, Planning, and Expediting Clerks	55%	3K	\$52k	High	12%
 H ₂ Scheduler Logistician	\$92k	Low	17%	First-Line Supervisors of Retail Sales Workers	72%	12K	\$48k	Low	10%
				Shipping, Receiving, and Inventory Clerks	65%	7K	\$38k	High	8%
				First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors	76%	6K	\$54k*	Low	15%
				Production, Planning, and Expediting Clerks	82%	3K	\$52k	High	12%
				Dispatchers, Except Police, Fire, and Ambulance	59%	2K	\$41k	High	11%

DAC members can improve salaries through H₂

H ₂ Role	Avg Salary ⁴	Risk of Automation	Employment Change	DAC Job Match	Match %	DAC Population Estimate	Avg Salary ¹	Risk of Automation	Employment Change
 H ₂ Data Analyst	\$73k	Low	20%	Office Clerks, General	53%	19K	\$42k	High	4%
				First-Line Supervisors of Office and Administrative Support Workers	81%	12K	\$62k	Low	7%
				Bookkeeping, Accounting, and Auditing Clerks	60%	11K	\$45k	High	6%
				Tellers	71%	3K	\$31k	High	4%
				Food Service Managers	76%	1K	\$59k	Low	21%
 H ₂ Regulatory & Compliance Specialist	\$86k	Low	14%	First-Line Supervisors of Office and Administrative Support Workers	79%	12K	\$62K	Low	7%
				Bookkeeping, Accounting, and Auditing Clerks	51%	11K	\$45k	High	6%
				Operating Engineers and Other Construction Equipment Operators	57%	10K	\$48k	High	17%
				First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors	73%	6K	\$57k	Low	15%
				Service Unit Operators, Oil and Gas	71%	4K	\$54k	High	19%
 H ₂ Safety Officer/OHS Tech	\$70k*	Low	16%	Plumbers, Pipefitters, and Steamfitters	79%	9K	\$56k	Low	17%
				First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors	76%	6K	\$57k	Low	15%
				Service Unit Operators, Oil and Gas	81%	4K	\$54k	High	19%
				Dispatchers, Except Police, Fire, and Ambulance	63%	2K	\$41k	High	11%
				Food Service Managers	77%	1K	\$59k	Low	21%