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HUMAN RESOURCES CANADA

Chart of Competency
PV System Designer

Electricity Human Resources Canada is a non-profit organization supporting the human resources needs of the Canadian electricity sector.

Our Vision

Keeping the lights on in Canada by preparing and empowering a world-class workforce for the entire electricity industry.

Our Mission

Working to strengthen the ability of the Canadian electricity industry in meeting current and future needs for their workforce—one that is safety-focused, highly skilled, diverse and productive.

Our Values

We are a values-driven organization, committed to the improvement of our sector, the growth of Canada's economy, and the stability of our power grid. Our core values are:

Collaboration
Working with all stakeholders in Canada's electricity sector for our mutual benefit.

Trust
Forging relationships and products built on unwavering integrity.

Innovation
Leading the industry to be future-ready.

Canada
This project is funded by the Government of Canada's Sectoral Initiatives Program.

Chart of Competency: **PV System Designer**

This Chart outlines the competencies (also known as skills and knowledge) that are performed by PV System Designers.

Note: 'small'= 30 kW and under

Occupational Definition:

PV System Designers (30 kW and under) create electrical three-line diagrams for solar electric systems using computer-aided design software, develop design specifications and requirements for solar energy systems, perform computer simulations of solar PV generation system performance to optimize efficiency, provide technical support to installation teams, and perform a variety of analyses for solar systems.

Major Category	Competency Area	Competency Unit					
Design	**Conduct Pre-Design Activities**	Consult with external/ internal client	Consult with stakeholders	Coordinate site visit	Conduct site visit		
	Design Small PV System	Determine installation location and orientation of system components	Size PV system	Configure PV electrical components for grid-tie design	Configure PV electrical components for stand-alone design		
	Produce Design Drawings and Construction Documentation	Produce construction/installation drawings and diagrams	Produce materials lists of suppliers and pricing based on system specifications				
	Produce Quote for Client	Produce quote for client					
	Provide Post-Design Support	Provide technical expertise	Assist with utility and regulatory permitting applications				
	Provide Construction and Installation Support	Troubleshoot design and construction issues in the field					
Safety	**Maintain a Safe Working Environment**	Follow safe work practices	Use personal protective equipment (PPE)	Participate in safety meetings and emergency drills			
	Maintain a Sustainable Environment	Follow sustainable work practices	Contribute to wildlife mitigation practices				
Security	**Follow Security Practices**	Follow security practices for physical work environment	Follow cybersecurity procedures				
Organizational Policies and Procedures	**Follow Organizational Policies and Procedures**	Follow organizational policies and procedures					
Information/Record Management	**Complete Information/Record Management Tasks**	Maintain technical information and data	Use information/record management system for generation, transmission and distribution operations				
Information and Communication Technology Foundations	**Use Digital Technology**	Use communication applications	Use common software applications	Use navigation and mapping applications	Use digital mobile radios		
	Use Organization's ICT System	Use organization's ICT system					
Foundational Trade Skills	**Perform Routine Trade Tasks**	Use hand and power tools	Use electrical measuring and testing equipment	Use access equipment and work platforms	Operate vehicles and motorized equipment	Assist with rigging, hoisting/lifting and moving tasks	
Personal Competencies	**Demonstrate Professionalism**	Work as a member of a team	Develop professionally	Demonstrate professional and ethical conduct	Mentor/coach others	Manage stress	Manage time
	Communicate Effectively	Use active listening skills	Use speaking skills	Use hand signals	Use writing skills	Negotiate with internal and external stakeholders	Conduct meetings and presentations
		Exchange information with internal and external stakeholders					

National Occupational Standards (NOS)

NOS are voluntary guidelines that have been developed to provide businesses, educators, trainers, and job seekers with practical guidance.

How are NOS used?

Employers, employees, and educational institutions can put NOS to a wide variety of uses supporting effective workforce planning.

- Support personnel certification or accreditation programs
- Inform curricula for colleges and apprenticeships.
- Assist recruitment by informing job descriptions and providing a benchmark for employee appraisals.
- Identify career paths in order to promote employee retention.
- Help employers evaluate and determined the competencies of potential employees, including Internationally Trained Workers (ITWs).

Electricity Human Resources Canada has developed National Occupational Standards for a variety of occupations.

Visit **electricityhr.ca** for more information.

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