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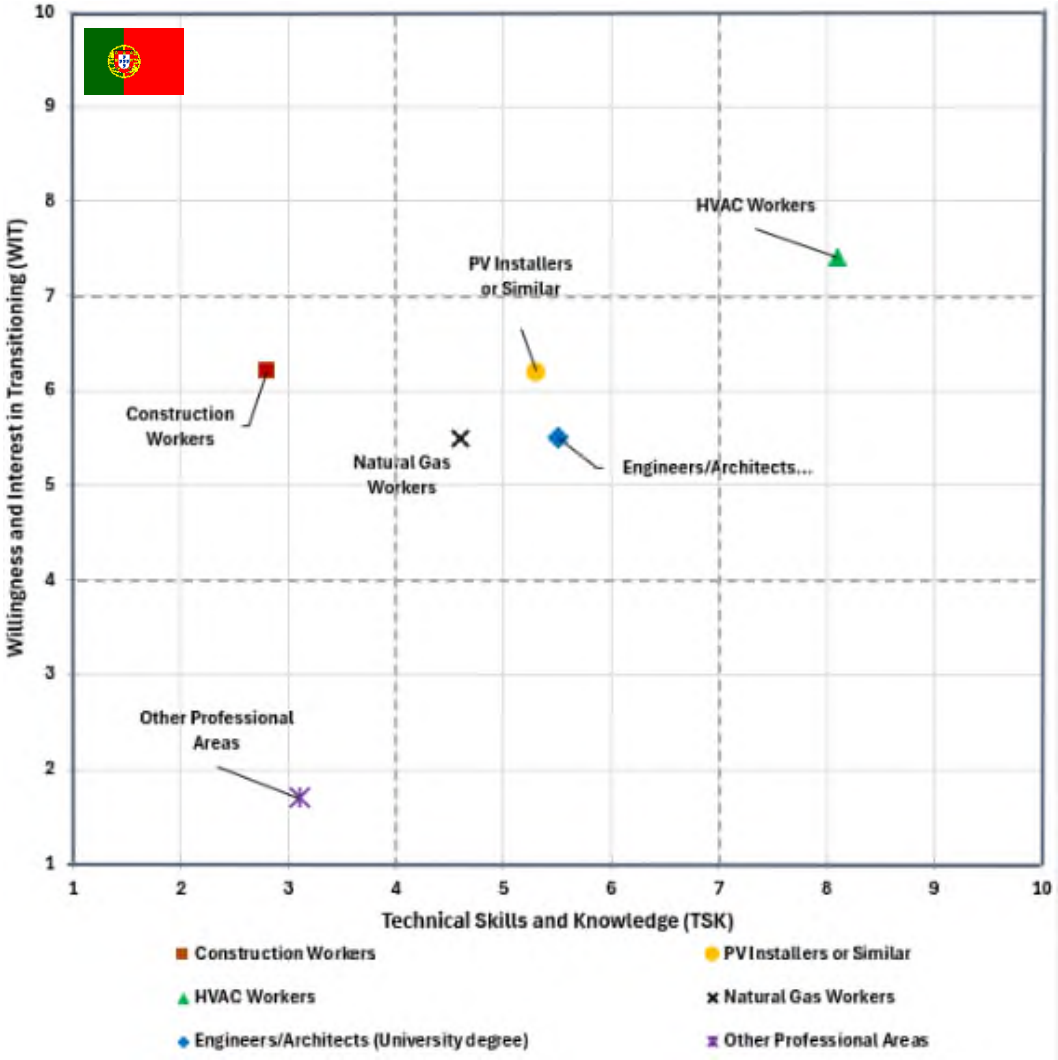
Assessing workforce willingness and readiness to transition: Portugal

The following information provides an overall summary of the analysis of responses to the questionnaire *"Assessing the Transferability of Skills from Various Sectors to the Heat Pump Value Chain."* The aim was to understand the level of willingness and readiness among professionals in the construction sector, including construction workers, renewable energy installers, natural gas workers, HVAC workers, engineers, and architects, and to identify barriers that may limit their transition to the heat pump sector.

For a clearer visualization of the results, a Transition Readiness Matrix was developed. This matrix categorizes professions according to their readiness to enter the heat pump sector, using transferable skills and knowledge (TSK) and willingness in transitions (WIT) as its axes. It provides a clear visual representation that helps stakeholders identify which profiles require additional training, support, or resources to transition into the sector successfully.



Portuguese transition readiness matrix.

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Overview of Questionnaire Respondents Assessing Workforce Willingness and Readiness to Transition into the Heat Pump Sector:

The questionnaire was conducted on 12[1] professionals in Portugal revealed a diverse range of experience, education, and roles in sectors relevant to the heat pump industry:

- **Age distribution**: 25–34 (33.3%), 35–44 (41.7%), 45–54 (16.7%), 55–64 (8.3%).
- **Education**: High school diploma (63.6%), vocational training (18.2%), bachelor's degree (18.2%), master's or higher (18.2%).
- **Professional roles**: Technicians (50%), installers (25%), engineers (8.3%), architects (8.3%), others (8.3%).
- **Sectors**: Construction (25.0%), natural gas (25.0%), HVAC (16.7%), renewable energy (16.7%).

Skills and Expertise

Responses indicate varied levels of familiarity with heat pump technology:

- **High technical knowledge**: HVAC experience, energy efficiency, renewable energies, sustainability, and maintenance skills. Example quotes include:
  - *"I work in the field of air conditioning and HVAC."*
  - *"I have knowledge of energy efficiency in buildings and sustainability of the built environment."*
- **Hands-on technical skills**: Copper welding, gas installation, system installation, and operation.
- **Low familiarity**: Some respondents reported no prior experience in the sector.

Preferred Roles and Training Methods

- **Roles**: Installers or technicians (64.3%) were the most preferred roles, followed by R&D (14.3%), project management, and sales/marketing (7.1% each).
- **Training methods**: In-person workshops (46.2%), online courses/webinars (38.5%), on-the-job mentoring (15.4%).

Conclusion and Recommendations

1. **Target HVAC professionals first**: Offer certifications and specialized training to leverage their high expertise and interest.
2. **Support other sectors with training programs**: PV installers, natural gas workers, and engineers can transition successfully with structured courses and incentives.
3. **Address barriers for construction workers**: Financial support and re-skilling programs are essential, as pointed out by the respondents.
4. **Emphasize interactive learning formats**: Workshops, online webinars, and in-person mentoring are preferred.

In 2023, Portugal had a population of **10,639,726 people** and approximately **2,898,332 residential buildings**, corresponding to **6,002,878 dwellings**. Of these, around **4,131,547** were permanently occupied homes. In the same year, the country had an estimated stock of **about 337,000 installed heat pumps**, representing roughly **31.7 units per 1,000 inhabitants** and **81.6 units per 1000 dwellings**. It was also estimated that Portugal had around **769 equivalent full-time jobs** dedicated to heat pump installation and approximately **306 equivalent full-time jobs** carrying out maintenance on these systems. However, the current number of professionals in this field remains insufficient to meet the sector's targets for 2030.

[1] The qualitative study required only 10 responses.

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