Development of the hydrogen sector in Sweden

In Sweden, one of the leading leaders in eco-innovation, we are seeing a dynamic development of the hydrogen sector. Sweden is not only joining the ranks of countries that are adopting hydrogen as a key element in the energy transition, but is also setting new standards in terms of sustainability. Last year's opening of the country's largest electrolyser plant is a clear signal of a change in the approach to energy production and industry.

Sweden's largest electrolyser project has been launched by Ovako, which intends to produce hydrogen for use in the steel production process. The 20 MW electrolyser started operations at the company's plant in Hofors, located 220 km northwest of Stockholm, making it the largest of its kind in the country. Ovako intends to use green hydrogen not to extract iron from ore, but to produce industrial heat, given that the company is primarily focused on recycling steel scrap, which accounts for 97% of its production. The company is already using zero-carbon electric arc furnaces, which has enabled it to reduce its greenhouse gas emissions by 58% compared to 2015 levels.

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Today, however, the heat required to convert steel into a finished product is still generated by the combustion of natural gas. Ovako predicts that the use of green hydrogen in these processes would enable further emission reductions of 50% or more. In addition, the company plans to supply surplus hydrogen produced in the Hofors electrolyser to Volvo, where it would be used in fuel cell cars. The total cost of the project is SEK 180 million (approx. USD 16 million), of which SEK 71 million is co-financed by the Swedish Energy Agency.

Airswift, a company specializing in the recruitment of personnel for the energy sector, plays a key role in providing skilled workers for the growing renewable energy industry. In the light of her experience, the professions and skill sets that are currently of the greatest interest and are particularly sought after have been identified:

- **Engineers** are key people who design, develop and implement solutions related to the production, storage and use of hydrogen as an energy source. Their work focuses on ensuring the efficiency, safety and sustainability of these technologies.
- In Sweden, there is a sharp increase in the demand for **hydrogen infrastructure specialists** to design, build and maintain the infrastructure for hydrogen production, storage and distribution, including refuelling stations, electrolyser plants, storage facilities and transport networks.

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- **Technicians** - these people are responsible for maintaining the proper functioning of hydrogen-related systems and installations, guaranteeing the effective and trouble-free operation of the hydrogen infrastructure.
- **R&D professionals** – the advancement of hydrogen technologies in Sweden requires scientists and innovators focused on research and the development of novel solutions for the production, storage and use of hydrogen.
- The growth of the hydrogen sector in Sweden generates a demand for **project managers/project management and trade professionals** capable of effectively coordinating and supervising hydrogen projects. Commercial experts, on the other hand, play a key role in building partnerships, negotiating contracts and developing hydrogen-related markets.

These sought-after roles reflect the dynamic growth of the hydrogen industry and open up new career opportunities for professionals in the field.

To sum up, the presented practice in the field of development of the hydrogen industry in Sweden is an inspiring example of an innovative approach to the energy transition. The commissioning of the country's largest electrolyser and the pursuit of the use of hydrogen from renewable energy sources in steel production demonstrates Sweden's determination to fight climate change and build a sustainable future. By adopting advanced technologies, promoting innovation, and developing hydrogen infrastructure, Sweden is setting the standard for other countries striving to realize sustainable development.

Bibliography:

https://www.hydrogeninsight.com/industrial/swedens-largest-electrolyser-project-inaugurated-to-produce-hydrogen-for-green-steelmaking/2-1-1512389

https://www.canarymedia.com/articles/hydrogen/chart-which-countries-are-leading-the-green-hydrogen-race

https://www.airswift.com/candidates/renewable-energy-jobs-sweden/

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