NEOM
TALENT
ACADEMY

APPRENTICESHIPS IN NEOM

SPRING 2025

RICHARD MARSH

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NOTE: I AM SPEAKING AS AN INDIVIDUAL
NOT IN AN OFFICIAL CAPACITY
THANK YOU TO CEDEFOP AND OECD FOR INVITING ME TO CONTRIBUTE

WHAT IS NEOM?

- Located in the northwest of Saudi Arabia, NEOM is ‘mega project’ designed to build a new economic model in Saudi Arabia.
- NEOM will feature groundbreaking projects such as The LINE (a futuristic Linear city), Oxagon (a floating port), and Trojena (a mountain resort).
- The project is committed to sustainability, harnessing solar and wind energy to produce **green-hydrogen**, which will play a key role in powering its operations and contributing to a global green economy.
- The project is also key to creating new industries and new jobs

PROPOSITION

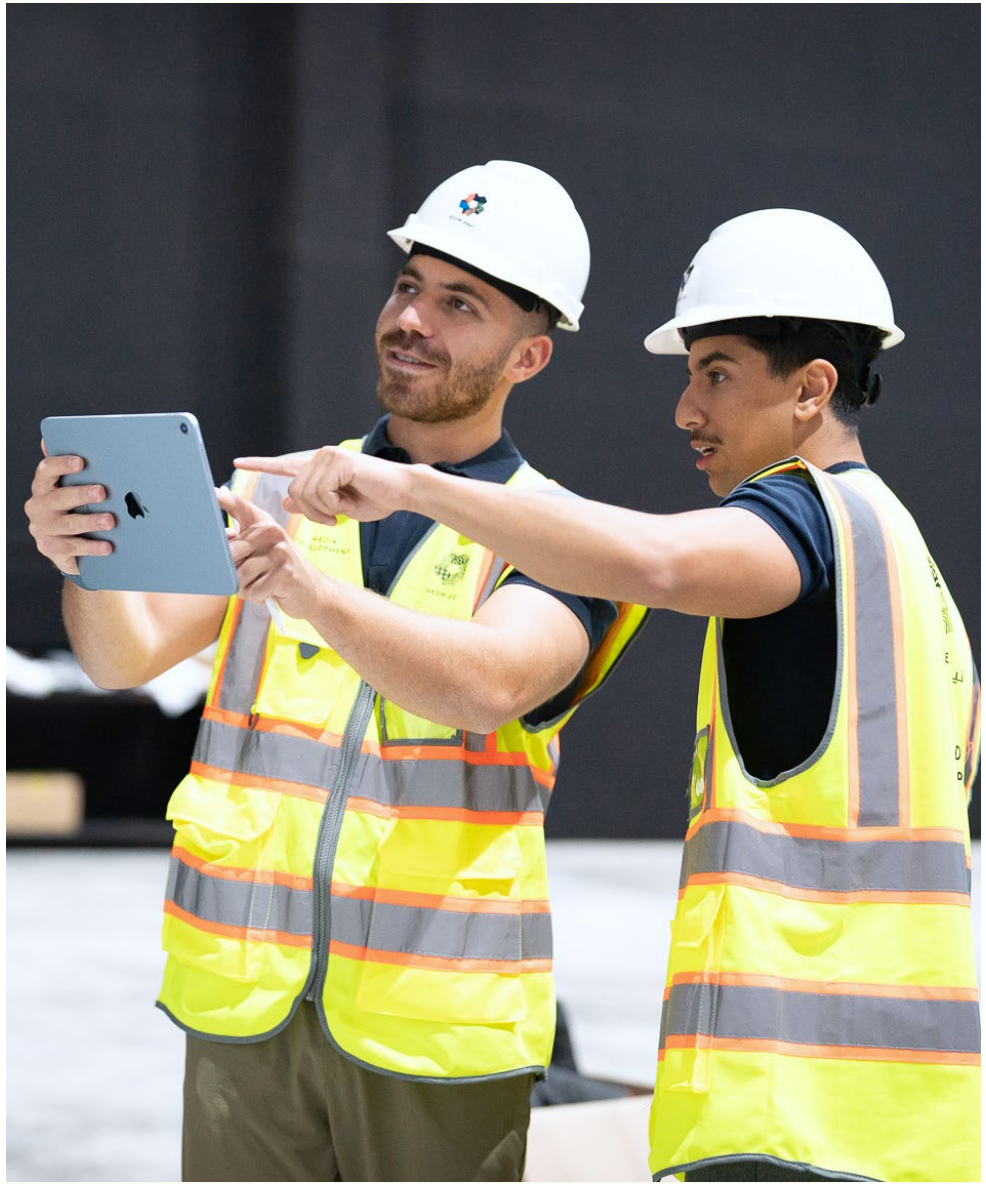
HOW CAN APPRENTICESHIPS SUPPORT SKILLS DEVELOPMENT IN NEOM?

NEOM, through its projects and industries, is creating new employment opportunities.
To meet this growing demand, developing a highly skilled workforce is essential:

- *What is the minimum amount of regulation we need to ensure high quality apprenticeship outcomes?*
- *Can apprenticeships provide a reliable pathway to achieve this ambition, even in new fields such as Green Hydrogen. ?*

Current Context of Vocational education in the region:

- There is an established network of vocational provision in the region, including Kingdom of Saudi Arabia (KSA).
- Vocational education has been school / college-based, leading to employment but not directly tied to workplace training.
- While Apprenticeships are not yet widespread in the region–apart from notable examples like Aramco in KSA or Kohl-Mubarak in Egypt–there is a growing recognition of their importance in workforce development (KSA's Vision 2030).



VISION 2030 ALIGNMENT

Driven by Vision 2030, KSA is focusing on upskilling its workforce with ambitious targets.

Vision 2030 Objectives:

- National target of a **45% increase** in Saudi nationals with **high-skill jobs** by 2030.
- Increase in **vocational learners** from 24% of school leavers to **40% by 2030**.

Although the ambition is clear there is a societal preference for University education (as in many countries).

We hope that this project will help to encourage more Saudi nationals to consider Apprenticeships.

APPRENTICESHIPS AND THEIR ANTICIPATED BENEFITS

Sustained employment

Apprenticeships have proven to be successful in preparing people for high quality employment.

Employer Engagement

Giving employers a structural role in workforce development – as both designers and deliverers

Skill Development

A powerful learning model, apprenticeships combine theory and practice to build all-around skill sets.

Versatility

Effective across diverse employment sectors and adaptable to various learner backgrounds.

APPRENTICESHIPS

WHAT DO *WE* SPECIFICALLY MEAN BY THEM?

- A program containing a combination of paid working *and* classroom learning
- Which prepares someone for a job role, trade or profession - leading to high-skill, well-paid jobs and/or further and higher study
- A program that contains a combination on the job (workplace) and off the job (classroom) learning. Demonstrating mastery of theory and practice.
- A standardized and regulated approach for consistency across employers with common standards and qualifications and accreditation - but with flexibility to reflect different employer practice.
- Clearly defined roles for state/ regulator employer and training provider.

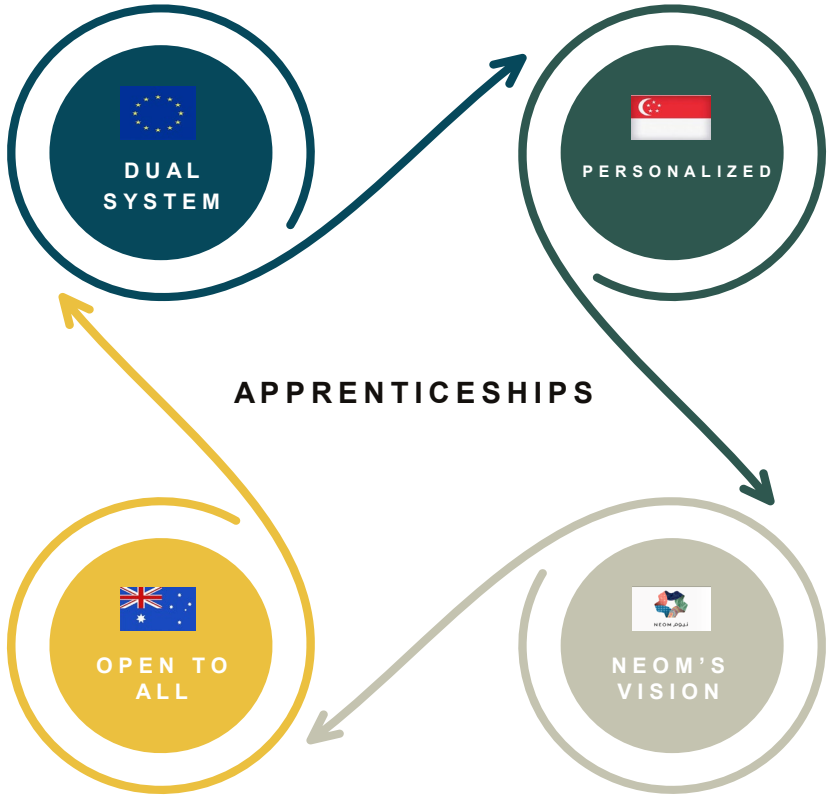
Alignment with international best practice including ILO Quality guidelines

These have become our Apprenticeship fundamentals

APPRENTICESHIP MODELS

Building Upon Global Best Practices:

- **German/Swiss 'Dual system'** combining workplace experience and classroom learning and allowing employers to 'own' the system – with apprentices employed with a contract of employment
- Adopting **Singapore**'s focus on personalized, **flexible curricula** to meet diverse learning needs.
- Open for people of all ages and backgrounds **(inclusive model)** – following the examples of **Australia, US and the UK** to create an all age all level model – not just a school to work transition
- Focusing on the **new sectors and industries** most critical to **NEOM**'s success.
- Meeting the 2023 ILO 'Quality Apprenticeship' model – but as **flexible and agile** as possible, with minimal rules and regulations.



PREPARING FOR A HYDROGEN FUEL ECONOMY

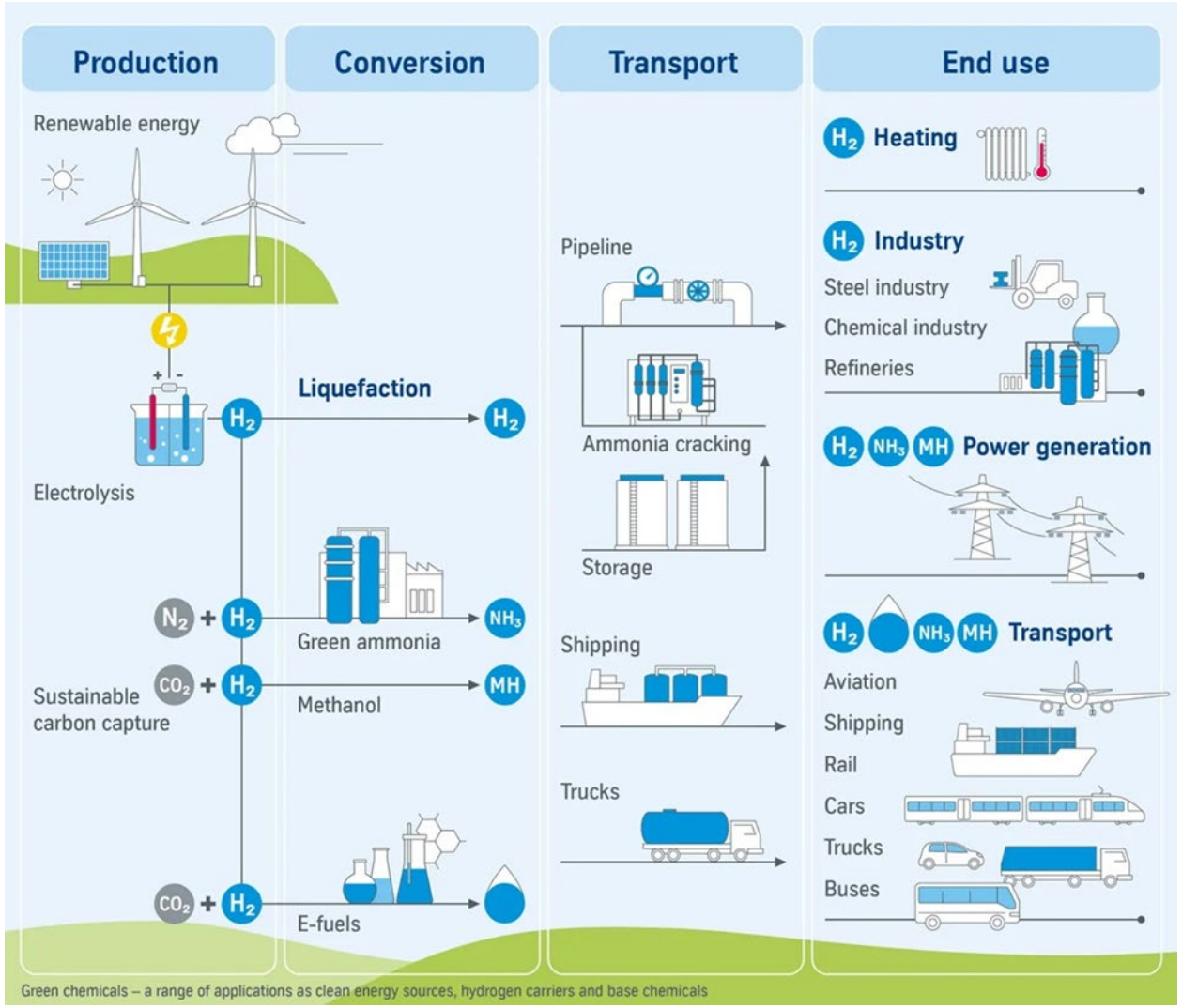
NEOM is investing in green hydrogen production to align with Saudi Arabia's net-zero emissions goal by 2060.

The NEOM Green Hydrogen Company (NGHC) facility being built in Oxagon is set to be the world's largest commercial-scale green hydrogen production facility.

Once operational in 2026, it will produce an initial 600 tonnes of green hydrogen per day, which will be available for global export, saving as much as 5 million tonnes of CO2 emissions per year.

Challenges

- Few qualifications or courses exist in this emerging industry.
- As this is a new industry, there is a lack of well-defined training standards at this stage.
- Employers involved lack significant training experience and maturity



CREATING APPRENTICESHIPS FOR GREEN HYDROGEN

OUR APPROACH TO THE PROCESS

At a macro level agree Apprenticeship fundamentals with relevant bodies including employer representatives

Form a working group of curriculum developers and subject matter experts with employer participants

01 Identify and agree core, common job roles and their associated responsibilities.

02 Define the key responsibilities associated with each role.

03 Build course outlines that define the apprenticeship program structures.

Internal

CONVERTING JOBS INTO APPRENTICESHIPS

EXAMPLES

Industry	JOB ROLES = Apprenticeships (5)	RESPONSIBILITIES for each job role	TRAINING MODULES (on and off the job elements of the Apprenticeship) Each to be assessed for knowledge and competence
Hydrogen Production	Electro-Renewable Technician	Operate and maintain electrolyzers	Electrolysis Fundamentals, Hydrogen Safety and Handling, Electrolyzer Maintenance and Operation, Troubleshooting and Diagnostics for Electrolyzers
		Maintain and operate solar PV and wind systems	Solar PV Systems Operation and Maintenance, Wind Turbine Operation, Renewable Energy Integration, Electrical Safety in Renewable Systems
	Instrumentation and Control Technician	Calibrate and maintain sensors and control systems	Instrument Calibration and Testing, Process Control Systems (PLC, SCADA), Automation in Hydrogen Systems, Safety Protocols for Instrumentation
		Install and repair electrical systems	High-Voltage Systems and Safety, Electrical Systems Installation and Maintenance, Hydrogen Facility Electrical Layout, Electrical Troubleshooting and Diagnostics
	Hydromechanical Technician	Manage water purification processes	Water Purification Techniques, Reverse Osmosis and Filtration, Maintenance of Water Systems, Chemical Safety, Quality Control in Water Processing
		Maintain mechanical systems	Mechanical Systems Operation and Maintenance, Pumps and Compressors for Hydrogen Systems, Basic Hydraulics and Pneumatics, Preventive Mechanical Maintenance
	Process Control Technician	Monitor hydrogen purity and quality	Quality Standards in Hydrogen Production, Gas Analysis Techniques, Sampling and Testing, Documentation and Reporting, Compliance in Hydrogen Purity
		Operate reactors for ammonia and methanol	Chemical Process Operations (Ammonia, Methanol), Industrial Chemistry Basics, Reactor Operation and Safety, Hazardous Materials Handling, Process Monitoring
	Safety and Compliance Technician	Ensure safety in ammonia and methanol production	OSHA and HSE Standards, Hazardous Materials and Environmental Regulations, Emergency Response Planning, Safety Audits, Compliance Reporting

APPRENTICESHIPS

PROJECT OUTCOMES

- Minimal ‘regulations’ set (employment / pedagogy / assessment)
- Apprenticeship standards agreed and built around job roles, not qualifications – prioritizing workplace relevance over academic alignment – this has been key in areas such as the size and duration of programs
- Leading to ‘national’ qualifications but where relevant also membership of international bodies such as Global Wind Association or NABCEP (Solar).
- Employers in the ‘driving seat’ as standards are derived from job roles
- Questions regarding quality, consistency and ongoing maintenance remain as there is no social partnership network or framework in NEOM yet
- Standards to be finalized in 2025 and learners to start in 2026,,,

If successful then potential to integrate with rest of KSA educational system

CONCLUSIONS

You can create Apprenticeships even without the structure of a developed economy and education system

And they can be used to create new learning opportunities for new industries

However, there are risks associated with an unregulated approach and outcomes will have to be very positive to outweigh the risks

END & Thank you

THE FUTURE OF WORK REQUIRES A RETURN TO APPRENTICESHIPS – WORLD ECONOMIC FORUM