

net zero futures

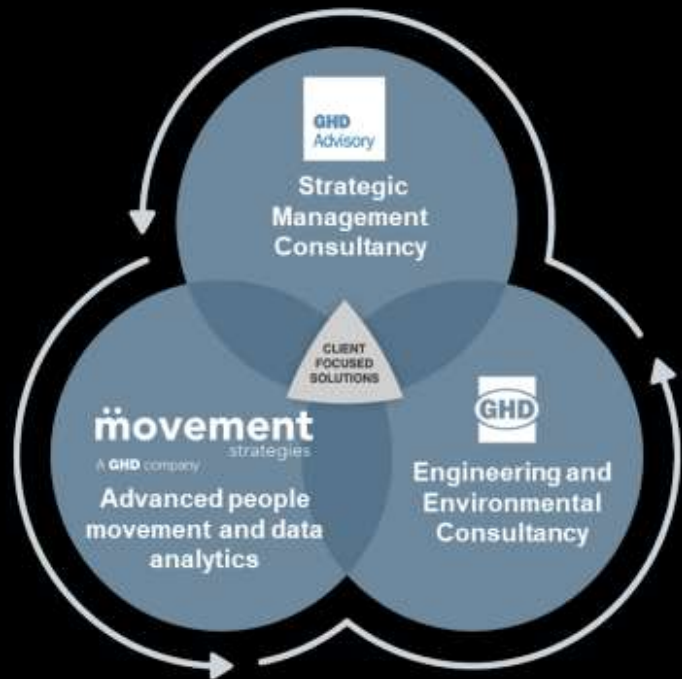
Postdoc
Pathways
To Impact

Contributing to building a hydrogen economy

PostDoc Career with Impact

Ahmad El-Kharouf

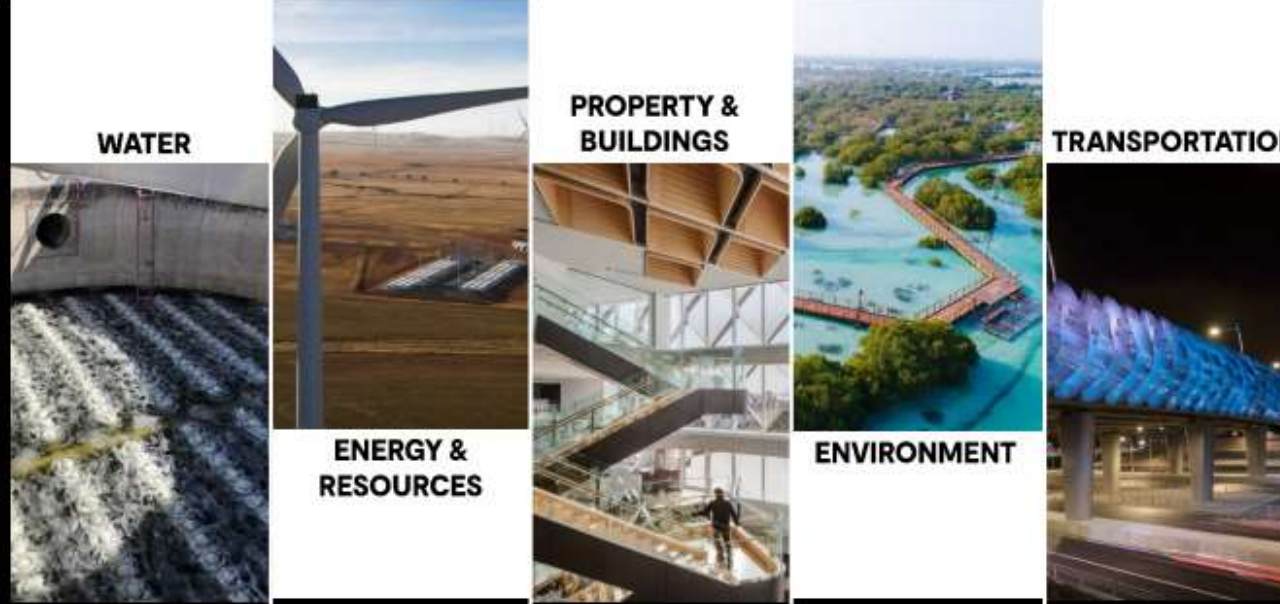
GHD About Us



360° Integrated Creation + Delivery Solutions

GHD is one of the world's leading professional services companies operating in the global markets of energy and resources, water, environment, property and buildings, and transportation.

The cornerstone of GHD's business is our client service-led culture and connected global network.



95+ years in operation
135+ countries served
160+ offices worldwide
2.7^B AUD revenue **2023**
5 global markets
11^K people
45+ service lines

Scan me to Discover more





Hydrogen Supply Chain



Production

Waste to hydrogen – feasibility study and provision of engineering services
 Yara/Engie – 100MW green hydrogen production plant feasibility
 Oman – GW scale green H2 and ammonia production plant feasibility

Storage

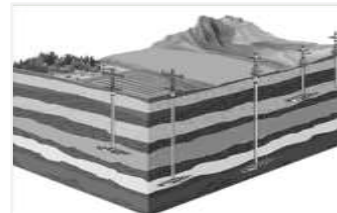
Geological H2 storage – study into H2 storage in salt caverns in UK
 BEIS Long Duration Energy Storage project – Power-to-X (hydrogen) feasibility study utilising innovative storage technology

Distribution

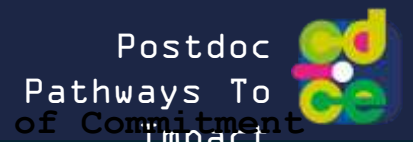
H2 pipeline blending – state-of-the-art and gap analysis
 Carlton Power – road and pipeline H2 transportation study

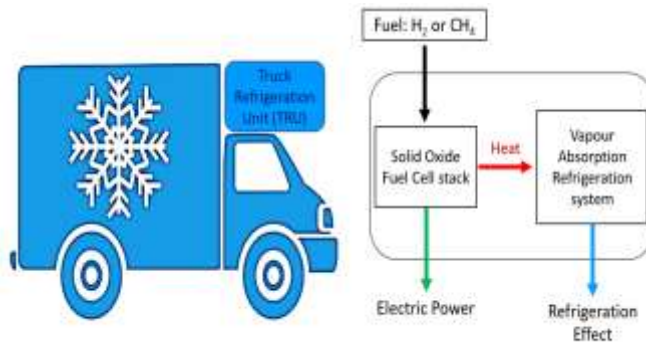
End-use

HyNet – industrial heat decarbonisation trial
 LAVO – residential hydrogen energy storage system
 Common Wealth Scientific & Industrial Research Organisation (CSIRO) – H2 refuelling infrastructure feasibility study



- UAE Ministry of Energy – Phase 1 development of strategic framework for hydrogen in UAE
- Client Confidential – green hydrogen and synthetic methane feasibility study in Azerbaijan
- BP – export-scale green hydrogen production and supply facility in Western Australia
- Confidential Client – green ammonia production plant in Morocco





BSc in
Mechatronics
Engineering

Research
Support
Officer
(ERA)

Postdoc and CDT
manager

Arup -
Senior
Engineer

2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
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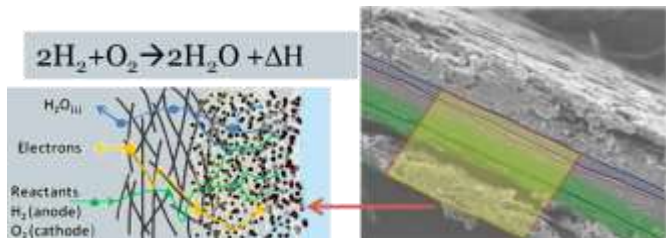
Solar
Systems
Engineer

PhD in
Chemical
Engineering
,
University
of
Birmingham

Post Doc
- fuel cell
integration
- PEMFC and
SOFC
materials
- System
integration

MSc and CPD
courses
lead
Research topic lead (IT-PEM)
- H2GEAR

GHD -
Senior
Consulta
nt



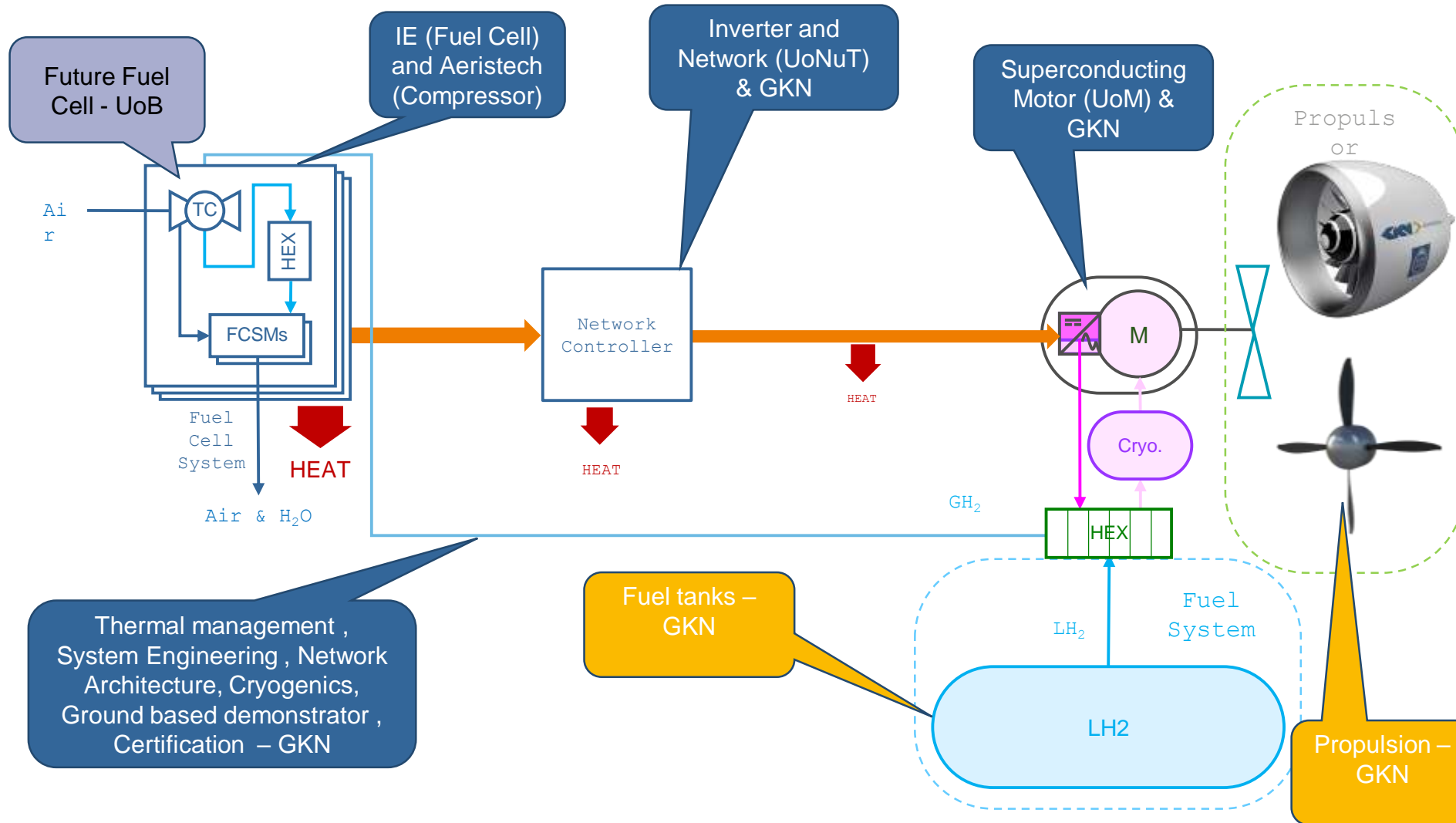
Collaborate

- Research group
- Other research groups
- Industry
- International collaborators



Collaborate

H2GEAR project



Thermal management, System Engineering, Network Architecture, Cryogenics, Ground based demonstrator, Certification – GKN

Fuel tanks – GKN

Propulsion – GKN

Get out of your comfort zone

- Do not limit your activity to the job description...
- Appreciate your own work and your knowledge
- Network and follow up the conversation

Due
Diligence

Owners
Engineer

Technical
Lead

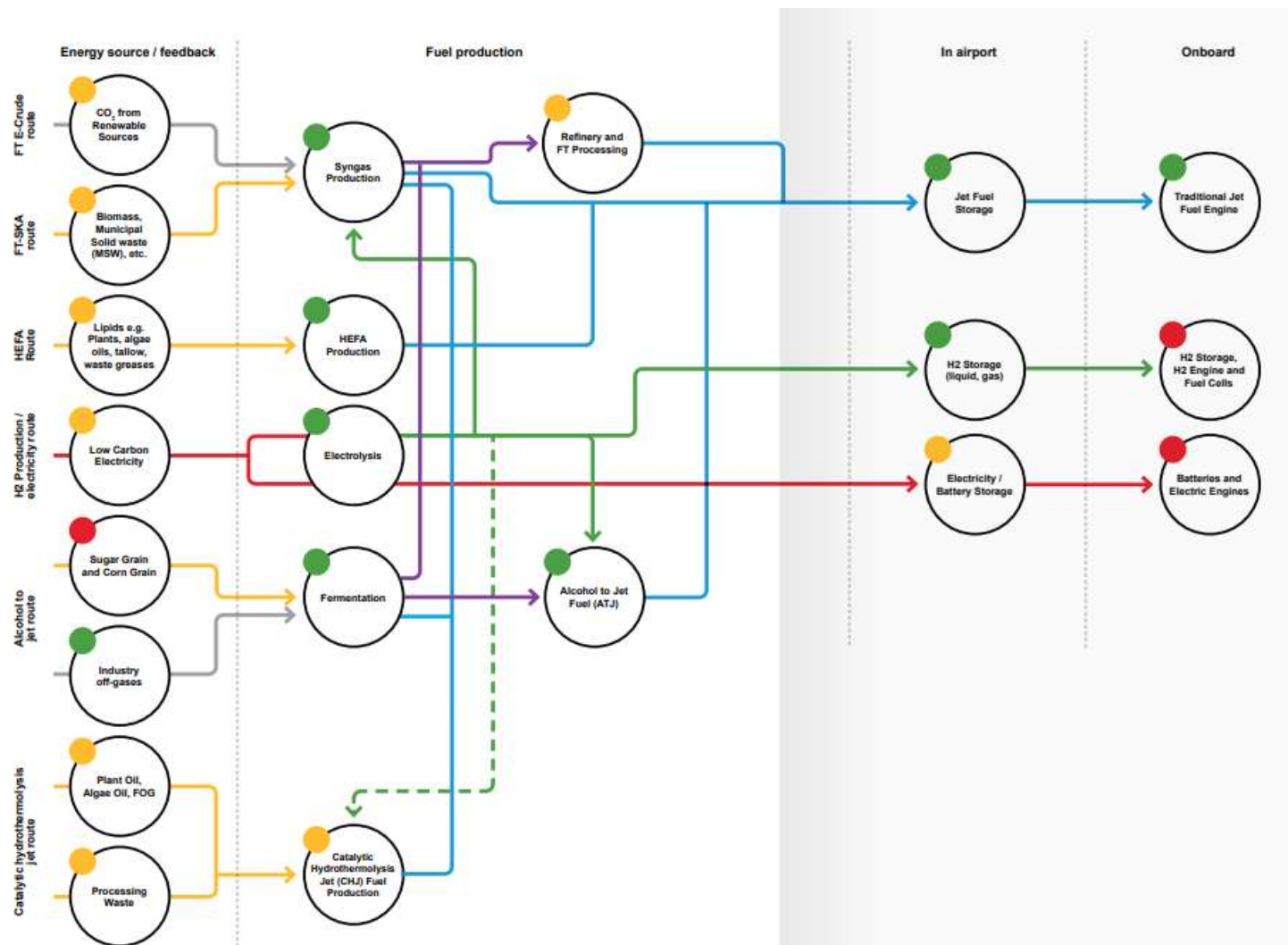
Project
Manager

Policy
support



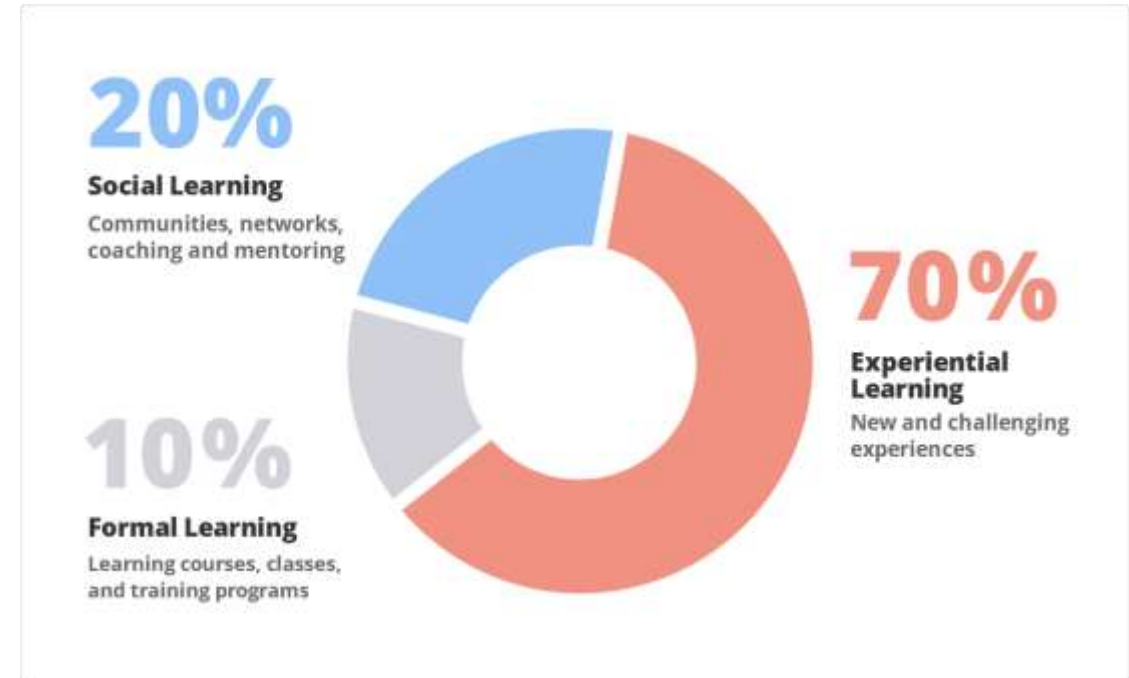
Out of
your
comfort
zone

Hydrogen
in
Aviation



Keep learning – CPD

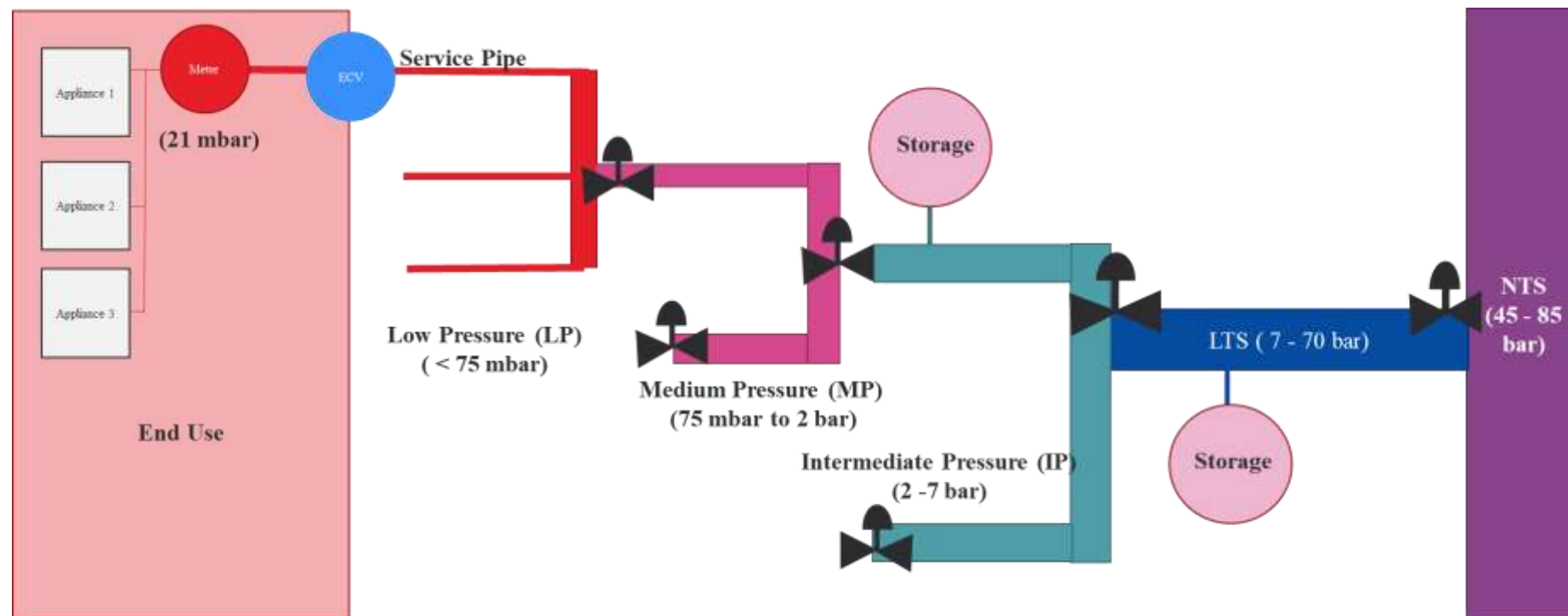
- Formal learning
- Social learning
- Experiential learning



Keep learning - CPD

Keep
learning

Hydrogen
for
heating



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Summary

Thank you for listening 😊