

National Planning Improvement



National Planning Hub: Planning for Hydrogen

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National Planning Improvement
**Insights Report: Planning for
Hydrogen**
February 2025



Understanding/
Misunderstanding

Regulation

Process

Risk

Spatial





Brokerage

Surge
Capacity &
Expertise

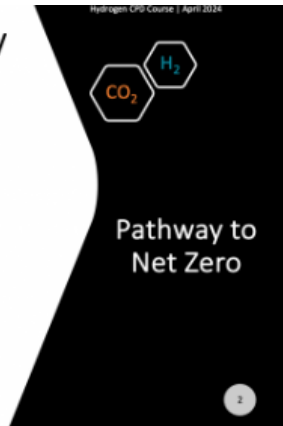
Professional
Capacity

Practice and
Efficiency

Hydrogen for clean, efficient energy

- ✓ Highest energy per mass of any carrier fuel*
- ✓ Zero carbon fuel: emission = water
- ✓ Can be sustainably produced
- ✓ Versatile, cheap, and efficient to transport

* At any pressure, the volumetric energy density of natural gas exceeds that of hydrogen by a factor 1.8 to 3.4, respectively. US DOE, 2015

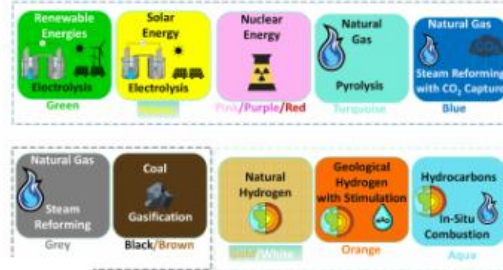


MODULE 1: BACKGROUND TO HYDROGEN

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Production from many technologies

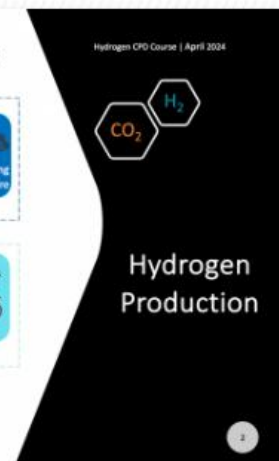


nd et al. "Hydrogen Energy Future - Fostering an Farming", Chemical Society Reviews, 2024

MODULE 2: HYDROGEN PRODUCTION AND DEMAND

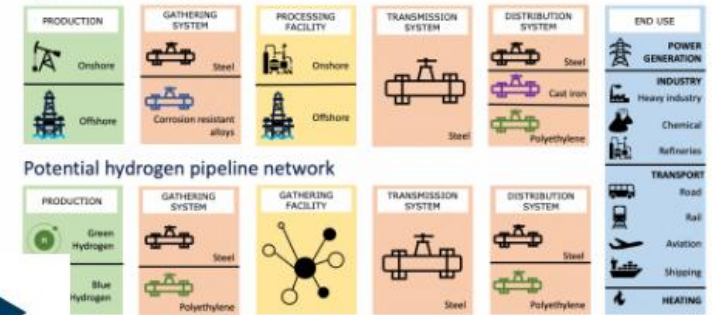
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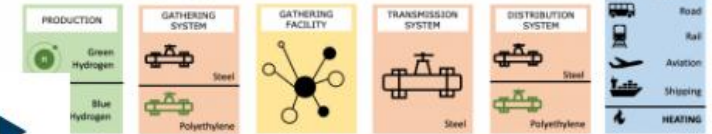


Developing a hydrogen network

Typical natural gas pipeline network



Potential hydrogen pipeline network



Iron Capture & Storage
ipg.uk

Hydrogen CPD Course | April 2024

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MODULE 3: HYDROGEN TRANSPORT AND STORAGE

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National Planning Hub

A Guide to Early Engagement in Planning for Hydrogen Developers

May 2025

- why early engagement is important
- what good early engagement looks like
- when early engagement should take place
- how early engagement will be made to work effectively
- resources and organisations that can support you





Scottish Government
Riaghaltas na h-Alba
gov.scot

ARUP

is.
improvement service

is.
improvement service

National Planning Hub

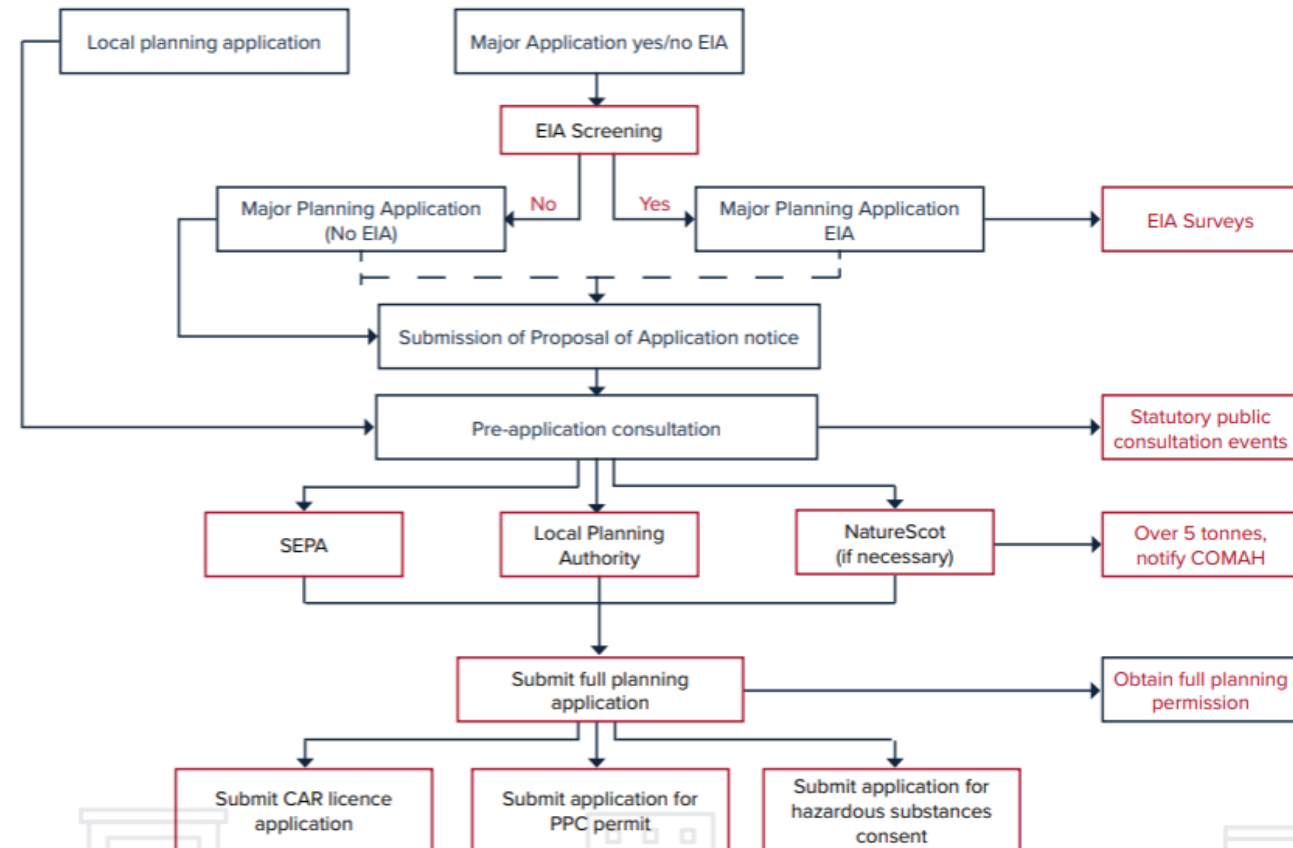
Hydrogen Planning Process Map



Consenting Hydrogen Projects in Scotland

This flowchart provides a routemap for consenting hydrogen projects in Scotland and should be read in conjunction with planning policy, legislation and guidance. This routemap does not provide an exhaustive list of consents or licences that may be required for a hydrogen development.

This diagram includes interactive elements. Boxes with a red outline indicates that there is additional information.



Roll out of SG
Hydrogen Planning
Guidance

Learning from
Previous experiences

Risks, impacts and
mitigations resource

Case studies

EIA support
programme

Health and Safety
Executive





NATIONAL PLANNING HUB

The National Planning Hub is based in and led by Scottish Government, working in partnership with the Improvement Service. It builds on the earlier Hydrogen and Housing Hubs and is tasked to provide direct support to planning authorities to accelerate decision making and development delivery.

It offers a flexible approach to providing additional surge capacity and expertise, brokerage support, professional capacity, and efficiency and practice.

The priorities for the National Planning Hub were outlined in the Programme for Government and informed by the sector, including the ongoing engagement activity of the Hub. For this year these are housing, renewable energy, and supporting local development plans where evidence shows there are challenges. The NPH does this through:

- **Brokerage:** led by the Scottish Government, involves bringing parties together to identify why individual sites have stalled, consider options and progress solutions so sites are development-ready.
- **Surge capacity and expertise** - led by Scottish Government to support planning authorities to access the capacity, resource and specialist expertise they require, e.g. through facilitating/supporting surge capacity and deployment of targeted specialist expertise to support planning authorities.
- **Professional capacity** - led by the Improvement Service to support planning authorities to be better equipped to deal with planning applications, e.g. by accessing professional skills, expertise and capacity through facilitated collaboration between planning services; being provided with targeted upskilling; and being able to access data and intelligence.
- **Practice and efficiency** - led by the Improvement Service to support planning authorities to be more efficient and effective, e.g. through being provided with support tools, resources and templates; attending learning events; and accessing good practice examples.

Hydrogen

Battery Energy Storage

Onshore Wind

Housing

Learning Events