



Navigating to 2050

A safe and sustainable maritime future

#NavigatingTo2050



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Commissioners of
IRISH LIGHTS

Navigation
and Maritime
Services

EIH₂

Green Hydrogen unlocks a secure,
sustainable and equitable energy future

H₂

Ireland can have an independent sustainable affordable energy future



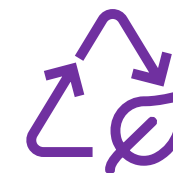
The wind in Ireland means an abundance of energy



This energy can be converted into electricity and green hydrogen

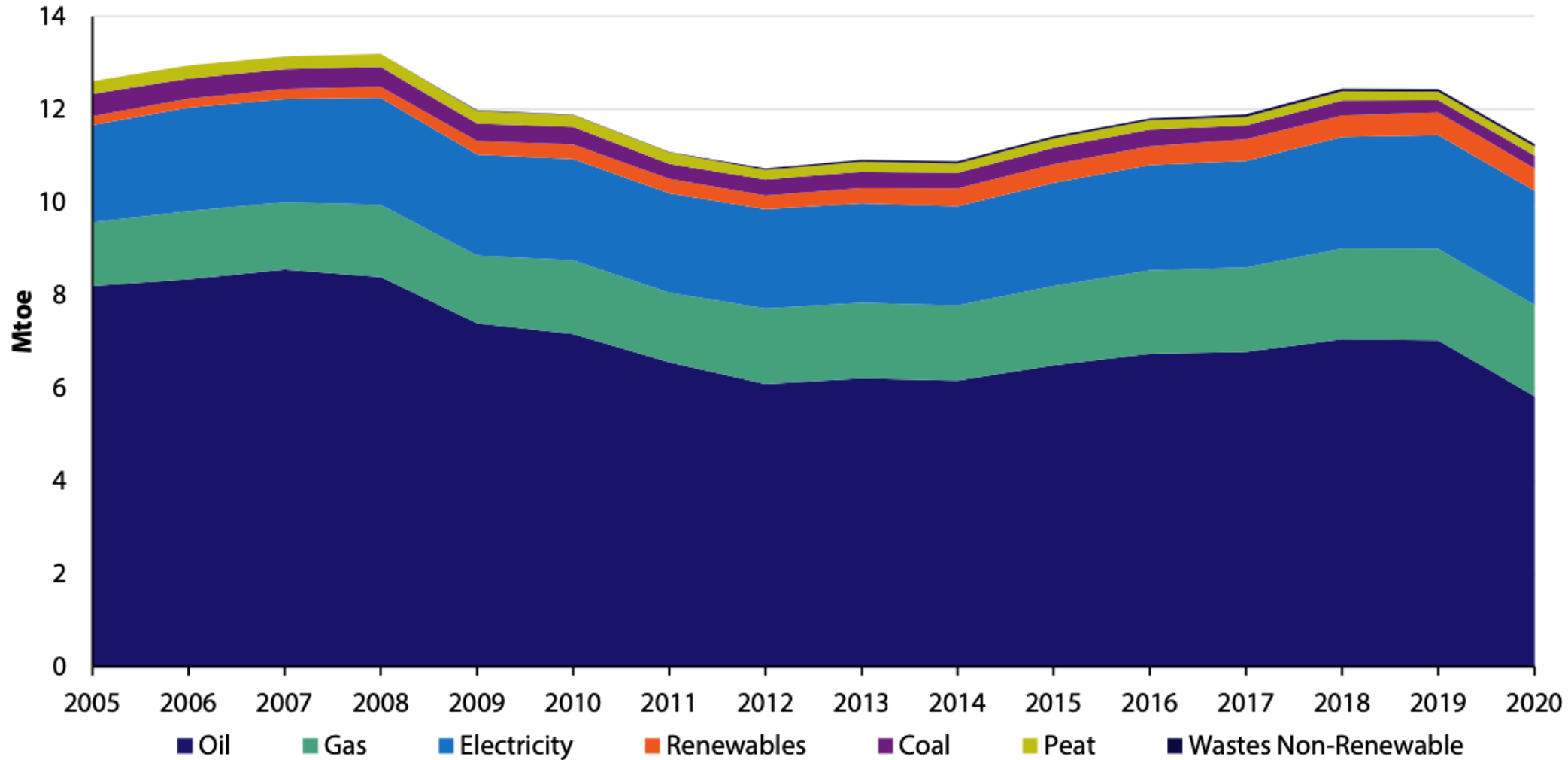


We can meet our domestic energy needs including security



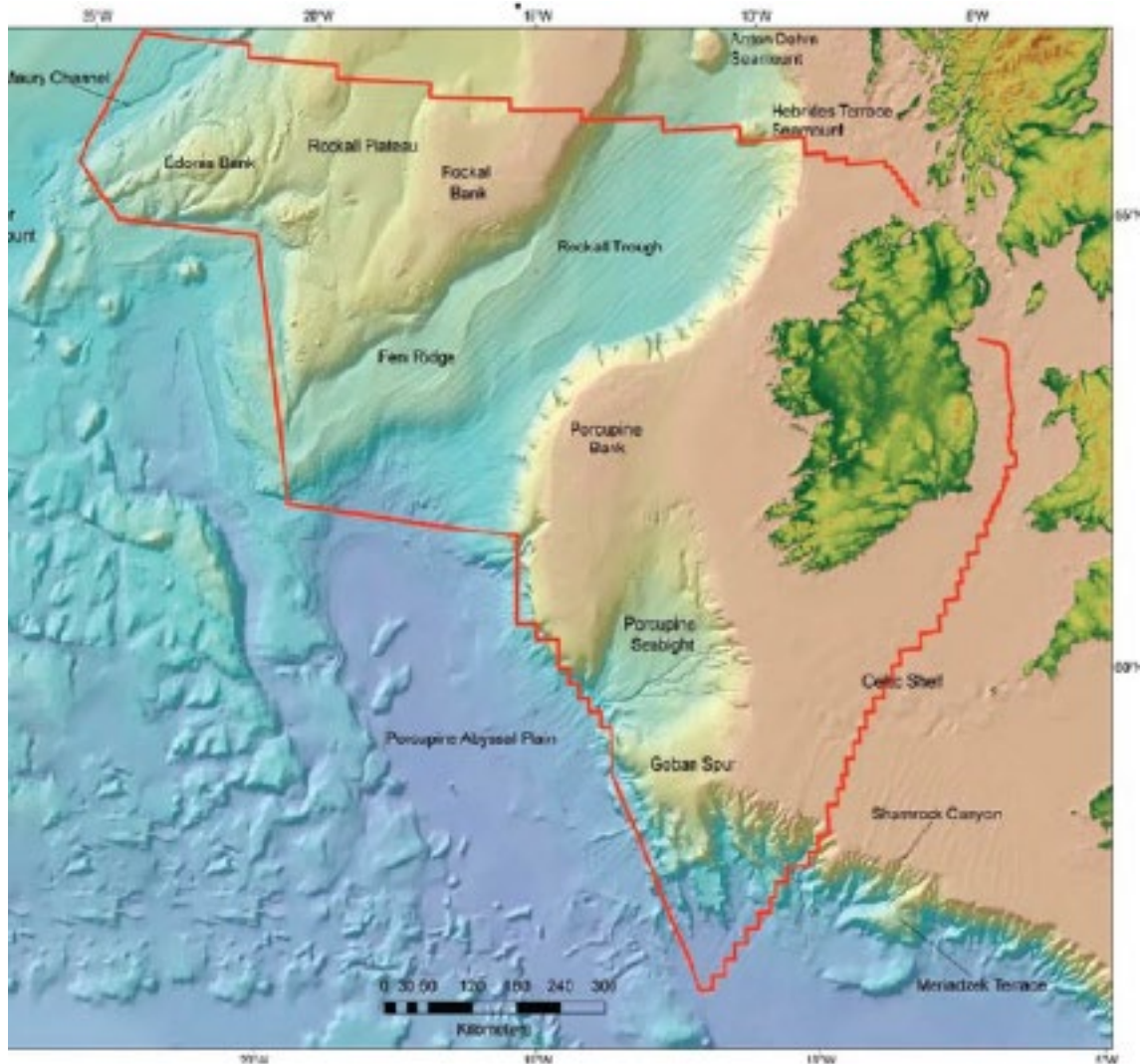
Through energy export, we can support European Energy System Integration

Ireland depends on imported fossil fuels today



Total final consumption by fuel (SEAI Report: Energy in Ireland 2021)

Ireland's energy will play a crucial role in Net Zero 2050 world



Ireland has an abundance of wind

- 10 GW onshore wind
- 70 GW offshore wind
- 8 times more than we need...

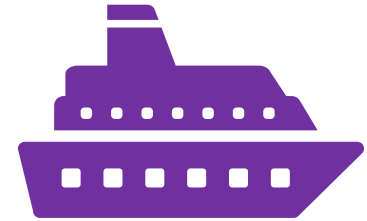
Renewable electricity alone cannot create a net zero world



**It is difficult to store
and transport energy
in electrical form**



**On dull calm days,
thermal electricity
generation is needed**



**Not all energy
needs can be met
using electricity**

Hydrogen, the most abundant element in the universe



The hydrogen (H) and oxygen (O) in water (H₂O) can be separated using electricity



Green hydrogen uses electricity from renewable sources for electrolysis



Production costs for renewable energy technology decrease over time

Hydrogen, the most abundant element in the universe



Hydrogen is non-toxic, lighter than air and in production for decades



Electrolysis involves separating hydrogen from oxygen at room temperature



Fuel cells are powered by hydrogen stored in specialised tanks



Hydrogen for shipping



UK Government funded consortium to deliver world's first zero-emission multi-fuel station for hydrogen and electric ships by 2025



EU Funded ro-ro demonstration vessel running on liquid green hydrogen (LH2), as well as the establishment of a viable LH2 supply chain and bunkering platform.

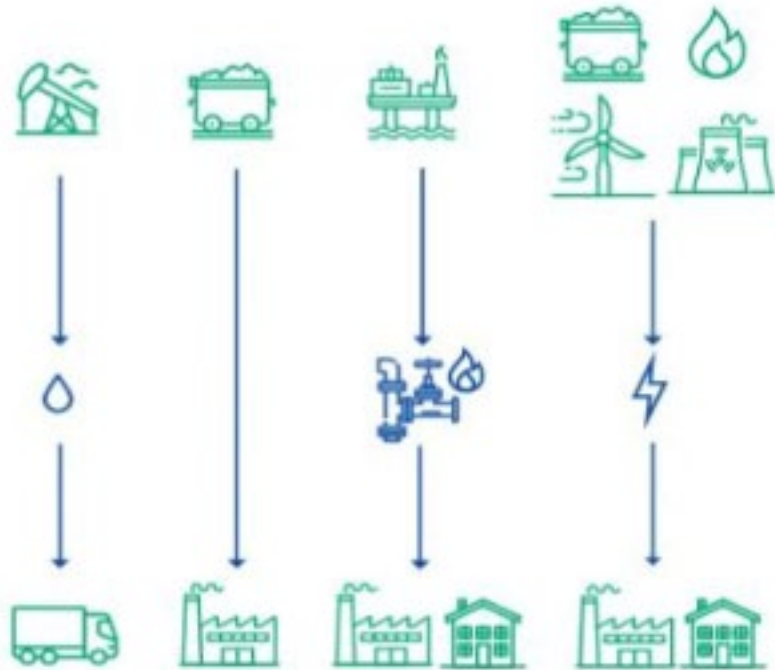


Energy Observer is taking a new step by launching the design of the most representative ship of the maritime transport industry: a multipurpose cargo ship fuelled by liquid hydrogen.

Green hydrogen enables a green independent energy future

The energy system today :

linear and wasteful flows of energy, in one direction only

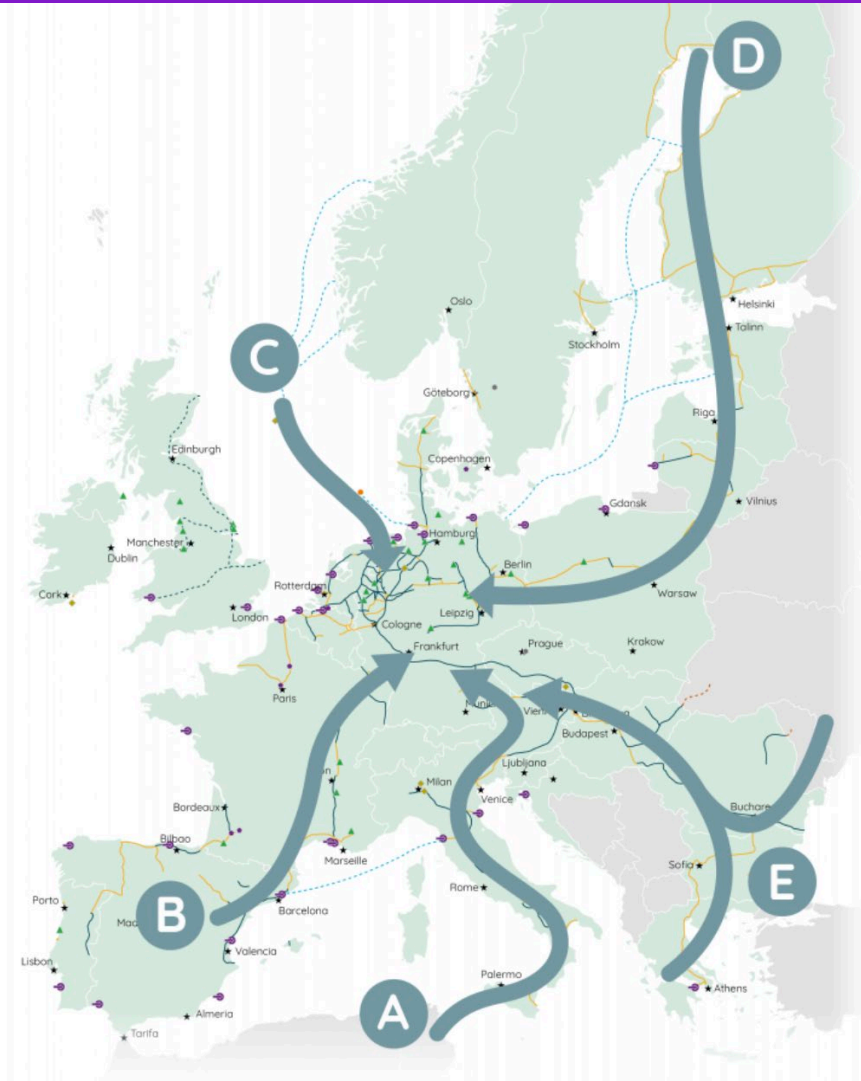


Future EU integrated energy system :

energy flows between users and producers, reducing wasted resources and money



Green hydrogen can enable a new energy map

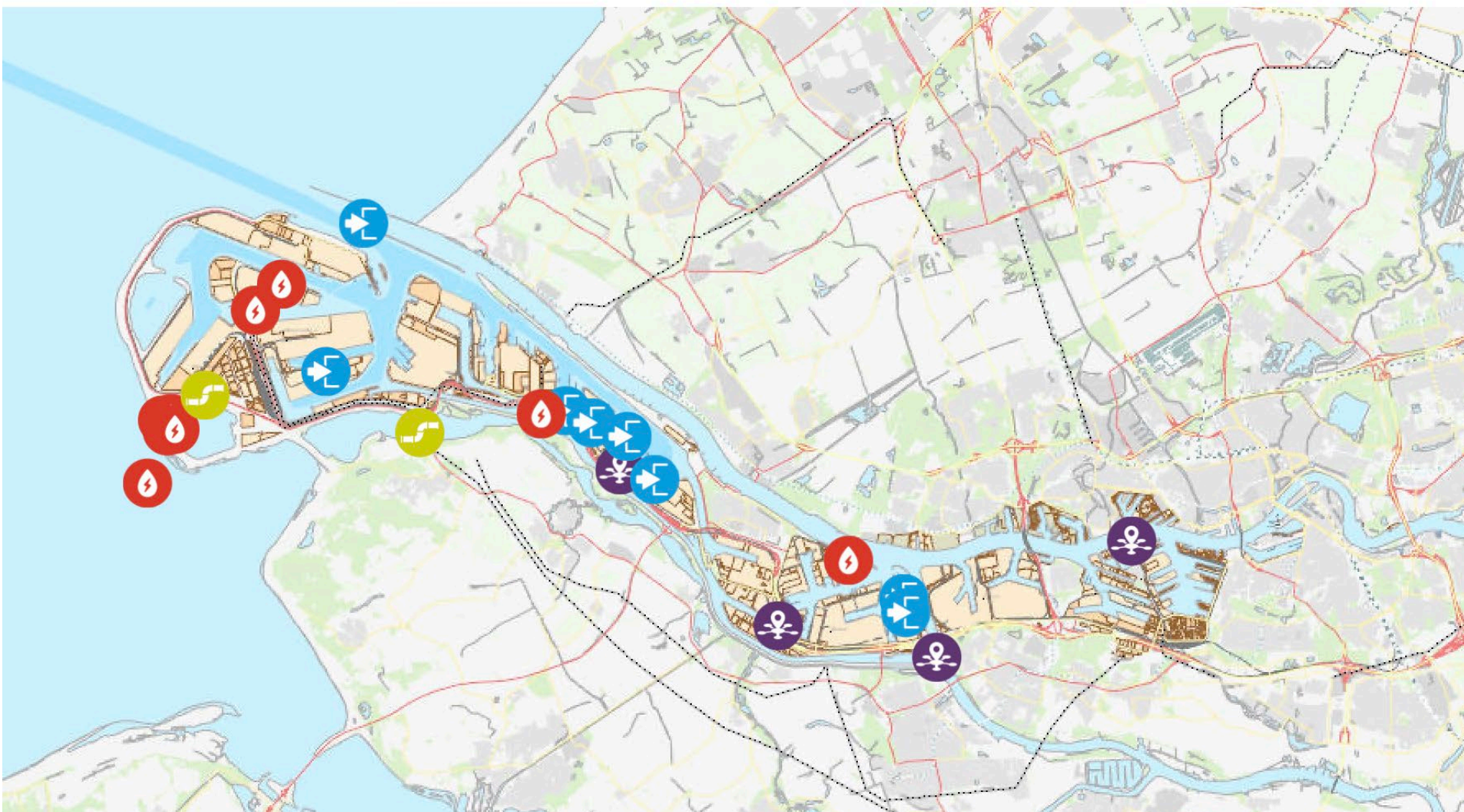


RePowerEU Plan



European Hydrogen Backbone

New Maps need new ports



Application



Mobility



Import



Pipelines



Production

Hydrogen projects in Rotterdam

If we don't want to do it for our grandchildren, let's do it for our pocket

€2 Billion

The economic impact of each GW of offshore wind to Ireland

20,000

Jobs to be created in the renewable energy sector by 2040 (SEAI)

25GW

Amount of electricity to be generated via Scotwind

We all must treat our broken energy system as a crisis

We must take action

- Start where we are, do what we can
- Develop and implement ambitious policies
- Resource public bodies appropriately and foster collaboration



We must not let the status quo dictate our energy future





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