

# Roadmap for Hydrogen Economy on the Island of Ireland



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1. Irish Energy mix
2. Indigenous Fuel
3. Hydrogen uses in Ireland
4. Hydrogen Initiatives on the Island of Ireland

SEAI

Energy in Ireland  
report  
2018

**ELECTRICITY 21%**

Demand  
**+1.6%**

CO<sub>2</sub> emissions  
**-7.3%**

Share of renewables  
**30.1%**

**HEAT 37%**

Demand  
**+1.0%**

CO<sub>2</sub> emissions  
**-0.3%**

Share of renewables  
**6.8%**

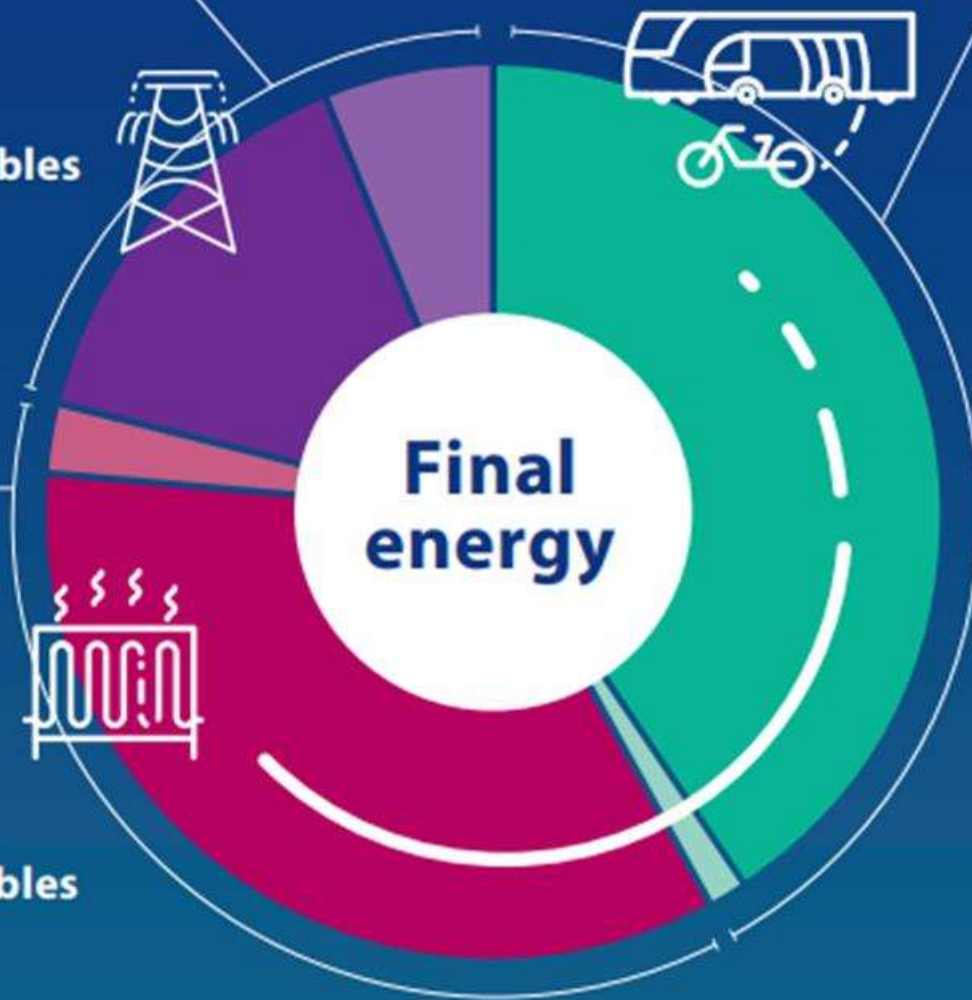
**TRANSPORT 42%**

Demand  
**+2.0%**

CO<sub>2</sub> emissions  
**+1.2%**

Share of renewables  
**7.4%**

**90%**  
energy from  
fossil fuels



## Eirgrid Dashboard

<http://smartgriddashboard.eirgrid.com/>

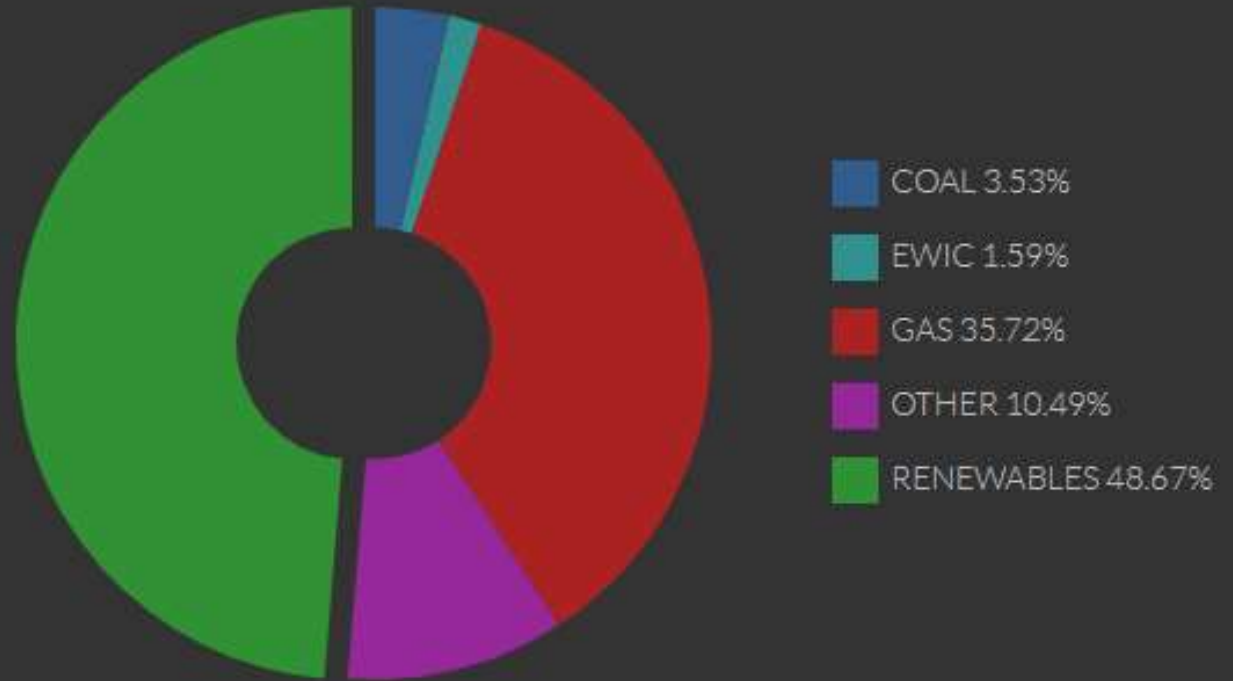
### Average Fuel Mix

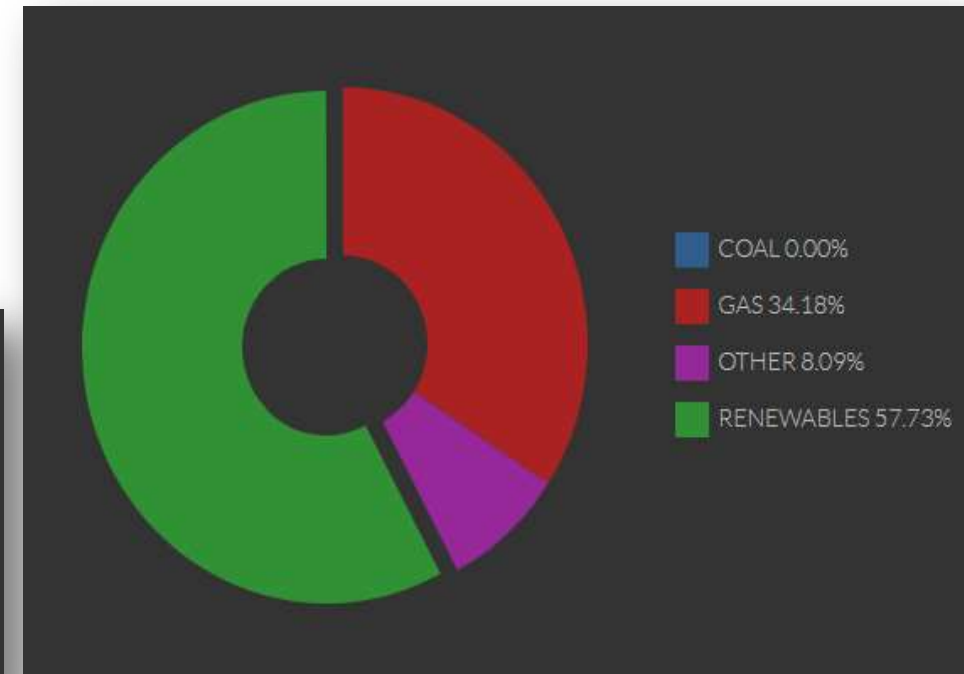
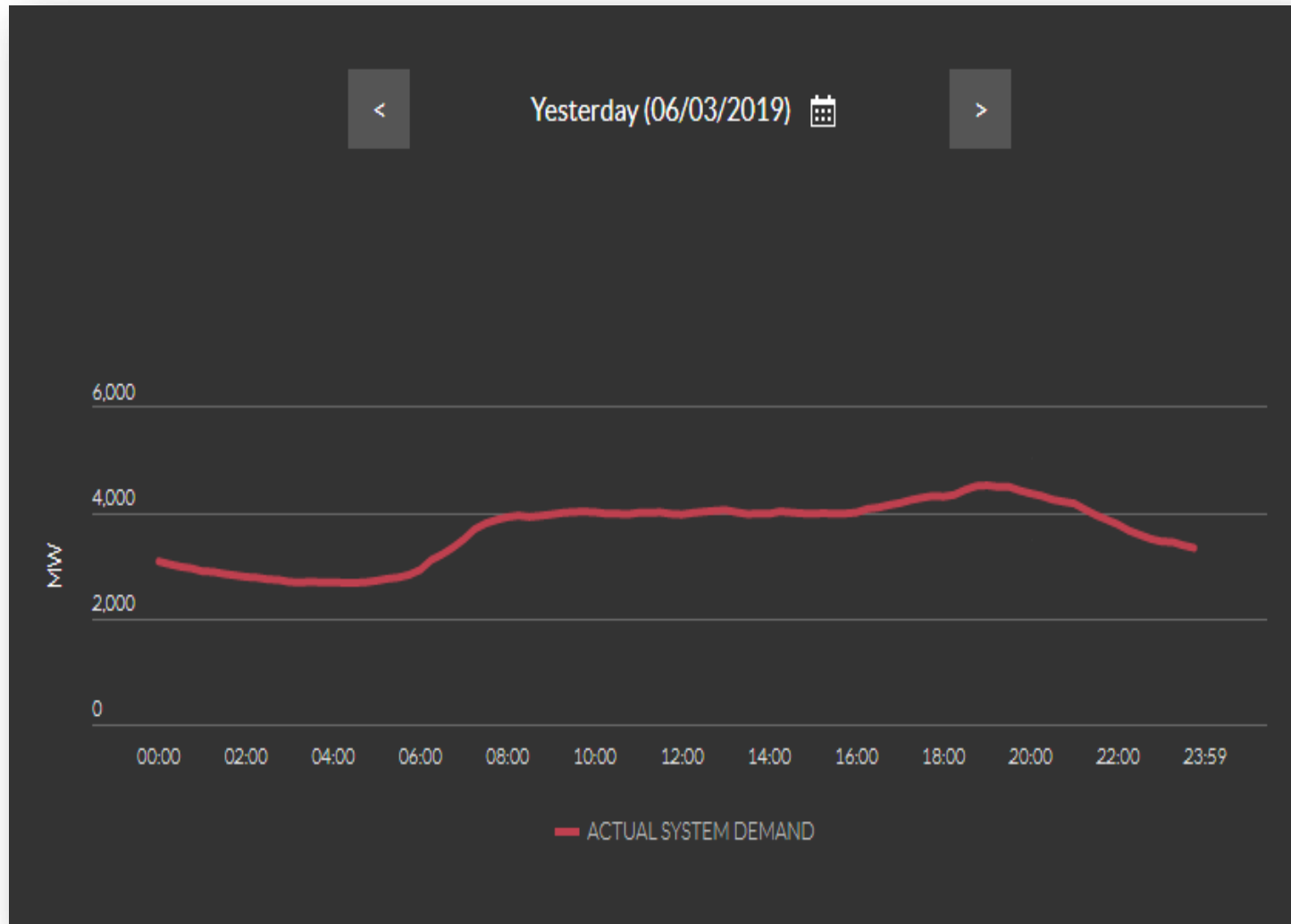
Average Fuel Mix is a representation of the System Generation fuel mix and net imports across the power system. The DAY view below shows the average fuel mix for the last 24 hours.

DAY

WEEK

MONTH





**Thursday 6<sup>th</sup>  
March 2018**

**Eirgrid  
Dashboard**



## The EU Renewable Energy Directive (2009/28/EC)

Sets a target for Ireland to meet 16% of the country's total energy consumption from renewable energy sources by 2020.

To achieve this target, the Government set a 10% renewable transport target, a 12% renewable heat target and a 40% renewable electricity target.

Similarly in Northern Ireland, the Department for the Economy published the Strategic Energy Framework (SEF) in September 2010 that set out a 40% renewable electricity target to be reached by 2020.

In 2017, the total wind energy generated in Ireland and Northern Ireland was 9,280 GWh, while 386 GWh of wind energy was dispatched-down. This represents 4% of the total available wind energy in 2017\*

\* Eirgrid Annual Renewable Energy Constraint and Curtailment Report 2017



**386GWh of uncaptured energy is equivalent to:**

Approx. 560 tonnes of Hydrogen Gas per year

Or

**1200** High Capacity Double Decker Busses working a 12 hour shift in service for the whole year



**1200** High Capacity Double Decker Busses working a 12 hour shift in service for the whole year

**OK, its not that easy**

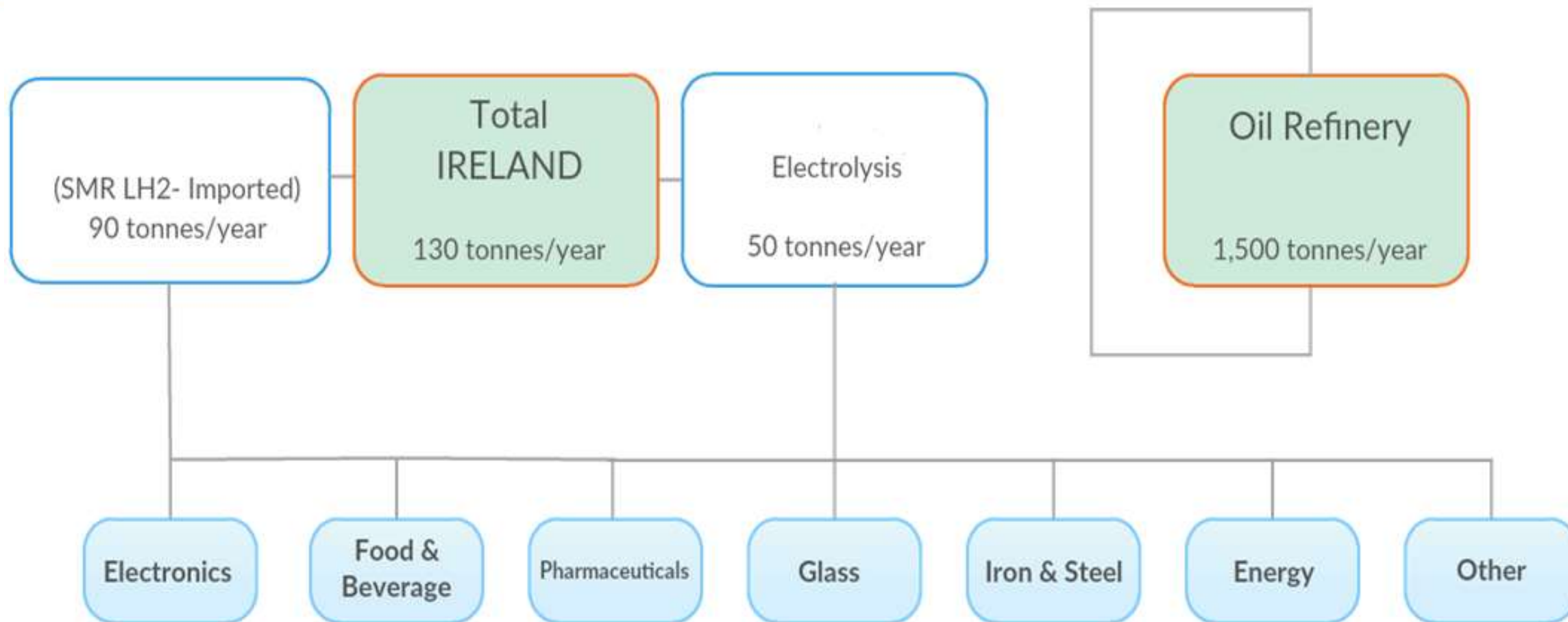
**Downsides**

- **Cost of compression**
- **Cost of the infrastructure**
- **Transport to the point of use**
- **Grid Connection costs**
- **Efficiency of the process**





# Hydrogen uses on the Island of Ireland



# Hydrogen Initiatives on the Island of Ireland

## GenComm



## SeaFuel

The project **SEAFUEL – Sustainable integration of renewable fuels in local transportation** – co-financed by the European Regional Development Fund through the Interreg Atlantic Area Programme.

SEAFUEL aims to use the renewable resources across the Atlantic Area to power the local transport fleet and support the shift towards a low-carbon economy. The project will use the expertise and infrastructure of the partners in renewable energy, namely solar, wind and marine, to demonstrate the viability of hydrogen as a fuel to be used by the local transport authorities.



# Hydrogen Initiatives on the Island of Ireland

## Hydrogen Ireland

Irish Hydrogen Association



## All Island Transportation

Irish Initiatives for introduction of fuelling infrastructure

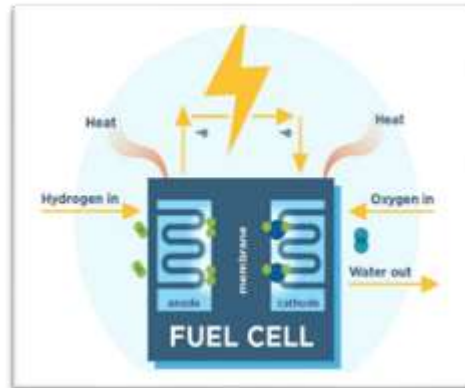
Initiatives to introduce hydrogen vehicles into captive fleets

Manufacturers

## Fuel cells

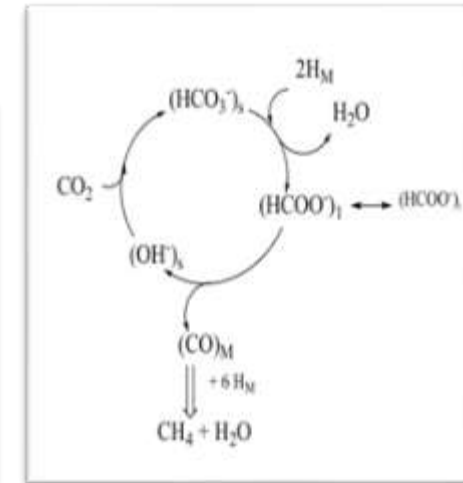
Energy Storage

H<sub>2</sub> to Electricity



## Methanation

(of) CO<sub>2</sub> from Biogas



## Grid Injection

Hydrogen for decarbonisation of heat



**Thanks for your time**

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