

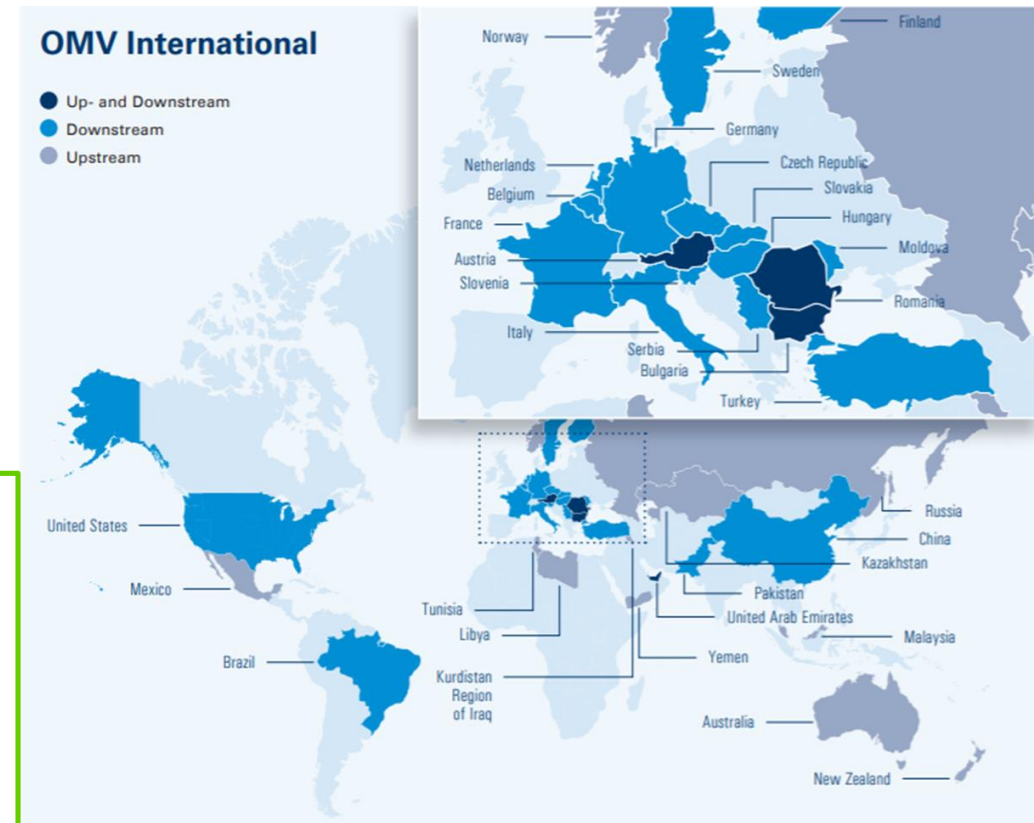
OMV innovation projects to support the energy transition

February 2021

OMV Downstream

OMV at a glance

- ▶ OMV Aktiengesellschaft is one of Austria's largest listed industrial companies. OMV produces and markets oil and gas, innovative energy and high-end petrochemical solutions – in a responsible way.
- ▶ In Downstream, OMV operates three refineries in Europe and owns a 15 % share in ADNOC Refining and Trading JV, with a total annual processing capacity of 24.9 mn tons. 17.8 mn tons of this annual production capacity can be allocated to the OMV refineries in Austria, Germany and Romania. In addition, in Austria and Germany, OMV is forward integrated into petrochemicals and has a 75% participation in Borealis, one of the world's leading producers of polyolefins.
- ▶ OMV's decades of company history, experience and expertise, allow us to make a significant contribution to a climate-friendly future. We are aware of our responsibility and we will live up to our commitment to the Paris Agreement and the EU climate targets.
- ▶ As experts in geology, hydrocarbons, and chemical conversion processes, OMV is already taking on the challenges of new technologies today - with our innovative energy and petrochemical solutions we are committed to supporting the energy transition.



UpHy II: first 0-emission H₂-project in Schwechat refinery



Project description

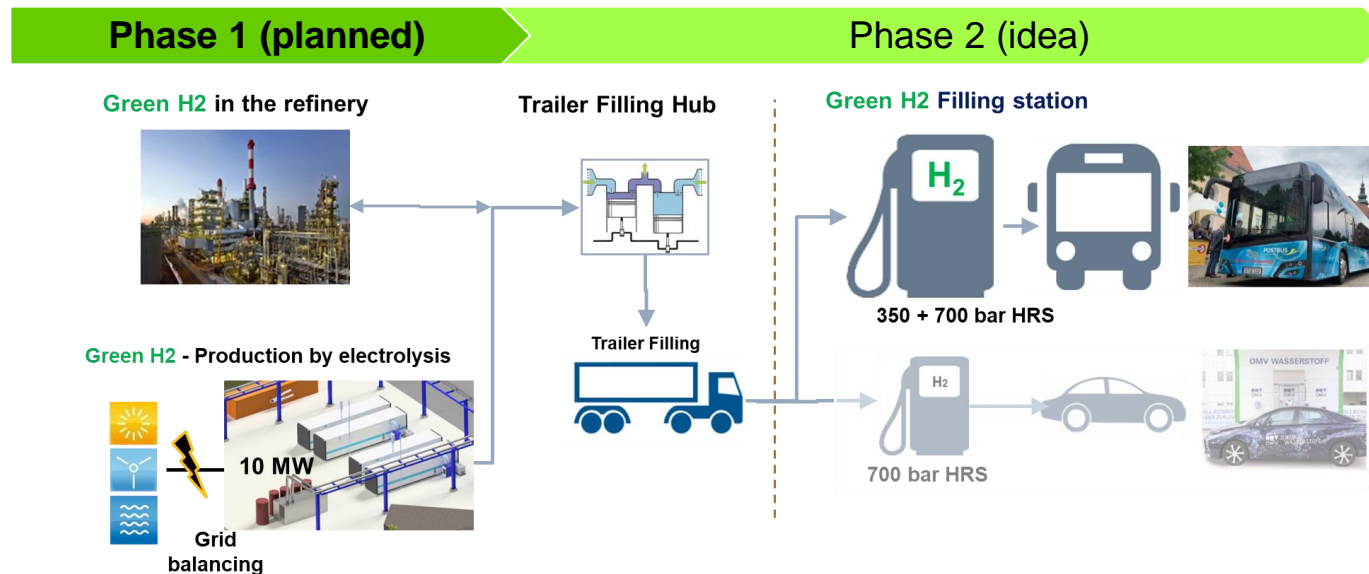
- ▶ Implementation, operation and optimization of a unique combination in Europe:
 - ▶ **Phase 1 (planned): 10-MW-elektrolysis in the Schwechat refinery**
 - ▶ Production **capacity of 1.5 kt** green hydrogen
 - ▶ Phase 2 (idea phase): H₂ infrastructure for heavy duty mobility

Environment

- ▶ CO₂ savings for phase 1 of up to **15,000 t/a as of 2023**

Next Steps

- ▶ Final engineering and FID of **phase 1 in Feb. 2021**
- ▶ 2Q2023 go live



Co-Processing: biofuels as a crucial contribution to a more sustainable mobility



Project description

- ▶ The term co-processing means in other words „working together“. Through this innovative technology, **biogenic feedstock can be processed together with fossil based raw materials in an existing refinery hydration plant**
- ▶ Co-processing enables a **cost-efficient integration of high quality biofuel** production in existing refinery operating units
- ▶ It allows the use of **flexible and sustainable feedstock**, ranging from domestic rapeseed oils, used cooking oils to even highly promising advanced feedstock like algae based oil
- ▶ In contrast to conventional bio component blending, **co-processing improves the fuel quality** – including the energy content as well as the cetane number
- ▶ Looking beyond fuels, bio-based feedstock can also be used for the production of petrochemical products

Environment

- ▶ CO₂ savings **360,000 t/a**
- ▶ The GHG footprint of refinery integrated co-processing is up to 85% less when compared to the relevant EU standard values for comparable finishing step of conventional biofuels

Next steps

- ▶ **2023 operation** in industrial scale



ReOil®

OMV's contribution to a more circular economy



Project description

- ▶ **ReOil®** is a **chemical recycling process**, which is based on thermal cracking, a proven refining technology whereby long-chain hydrocarbons are cracked into shorter-chain light hydrocarbons
- ▶ The innovative **ReOil® process converts used plastics**, (i.e., polyethylene, polypropylene or polystyrene) which would otherwise end up in landfill or incineration, **into so-called synthetic crude oil**. The resulting synthetic crude oil has a low content of heavy components and can be used as „normal“ refinery feedstock
- ▶ Since early 2018, OMV is operating a pilot plant at the Schwechat refinery with an input capacity of 100 kg/h

Environment

- ▶ A February 2016 study by the Austrian Federal Environmental Agency about the process of used plastics recycling concluded, that substituting synthetic crude oil for fossil crude oil within the Schwechat refinery process could result in a **45% reduction in greenhouse gas emissions together with a 20% lower requirement for energy input**

Next steps

- ▶ Engineering of a ReOil®-demo-plant with a design input capacity of **2,000 kg/h to start operating in 2022**

Synthetic crude-oil

ReOil®-process
long- to short-chain hydrocarbons



Refinery /
Petrochemical process
short- to long-chain hydrocarbons

Plastic waste

**Die Energie für ein
besseres Leben.**

