

# Αξιοποίηση του ενεργειακού πλούτου προς ενίσχυση της συνεργασίας και της ευημερίας στην περιοχή της Νοτιοανατολικής Μεσογείου

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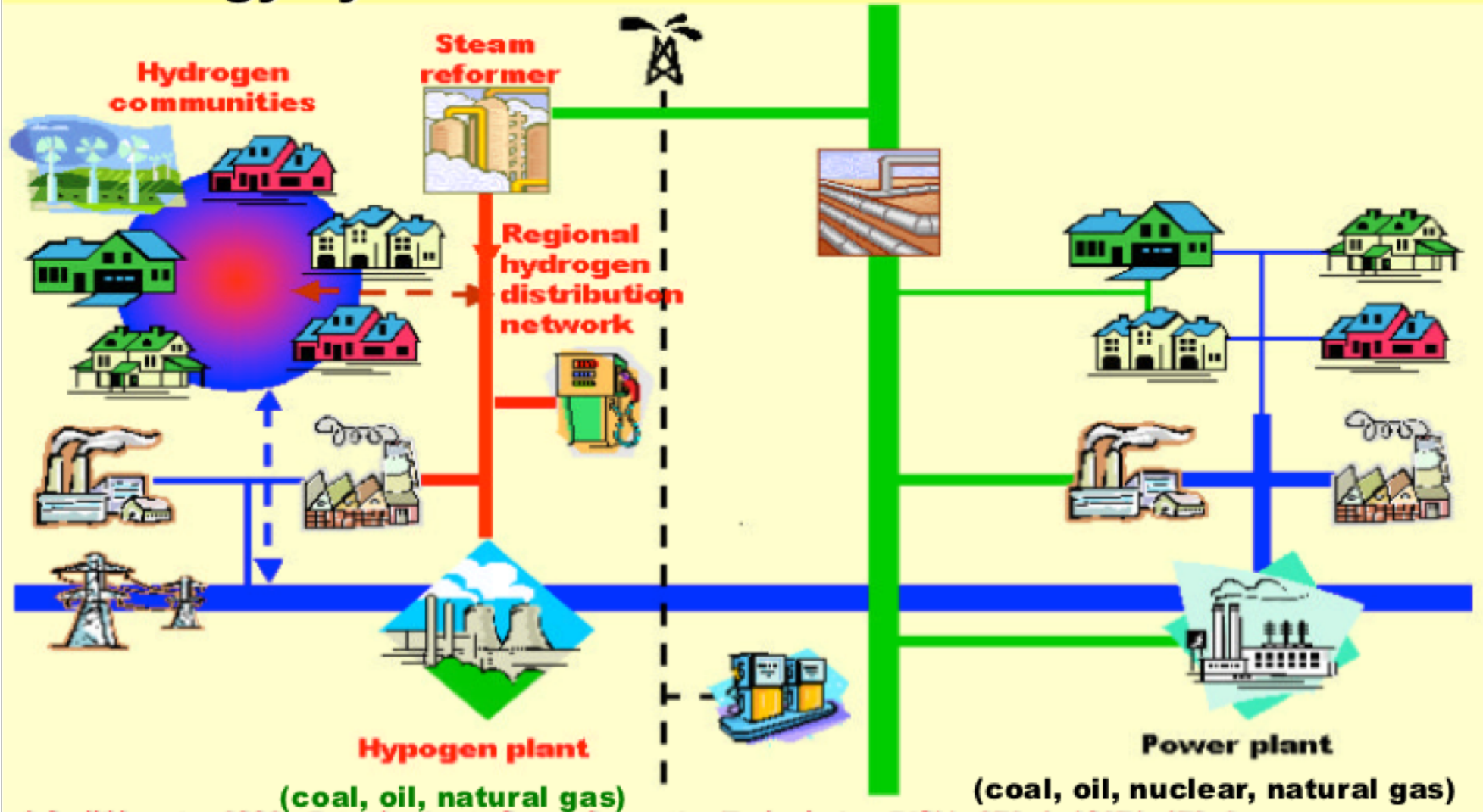
# **Future sustainable energy systems**

## **Towards sustainability**



# Future energy systems (optimistic scenario)

## EU energy system in 2020-30\*

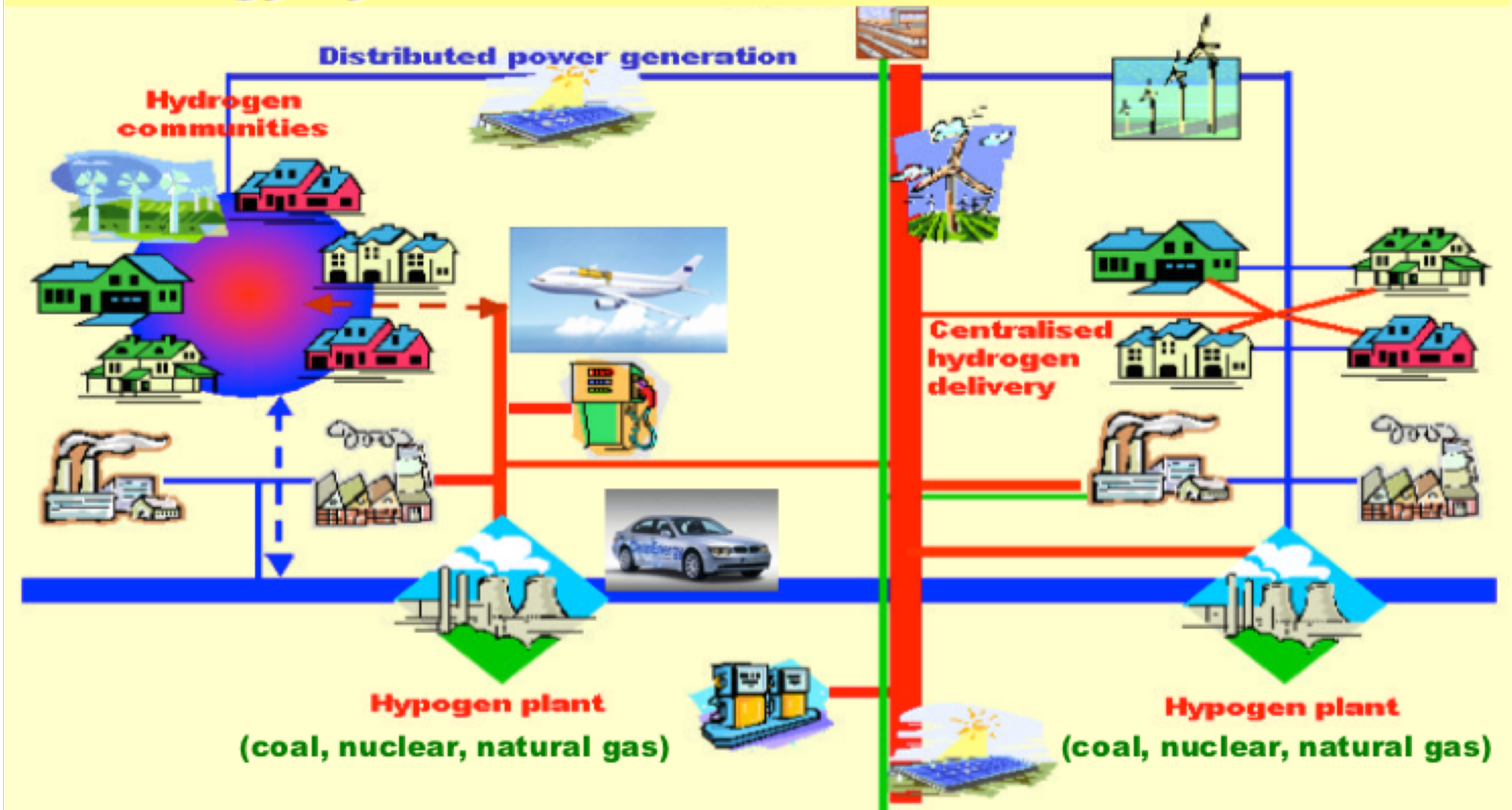


\* Poullikkas A., 2009, *Introduction to Power Generation Technologies*, ISBN: 978-1-60876-472-3



# Future energy systems (optimistic scenario)

## EU energy system in 2040-50\*



\* Poullikas A., 2009, *Introduction to Power Generation Technologies*, ISBN: 978-1-60876-472-3

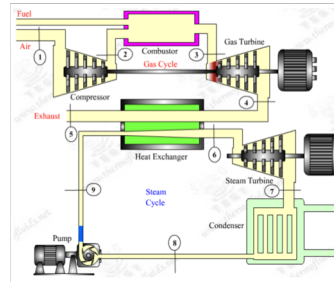


# **Indigenous energy sources**

## **In SE Mediterranean region**

# Main indigenous energy sources in SE Mediterranean region

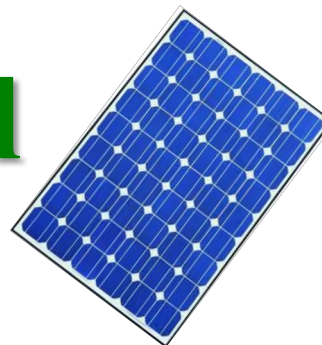
- **Natural gas**



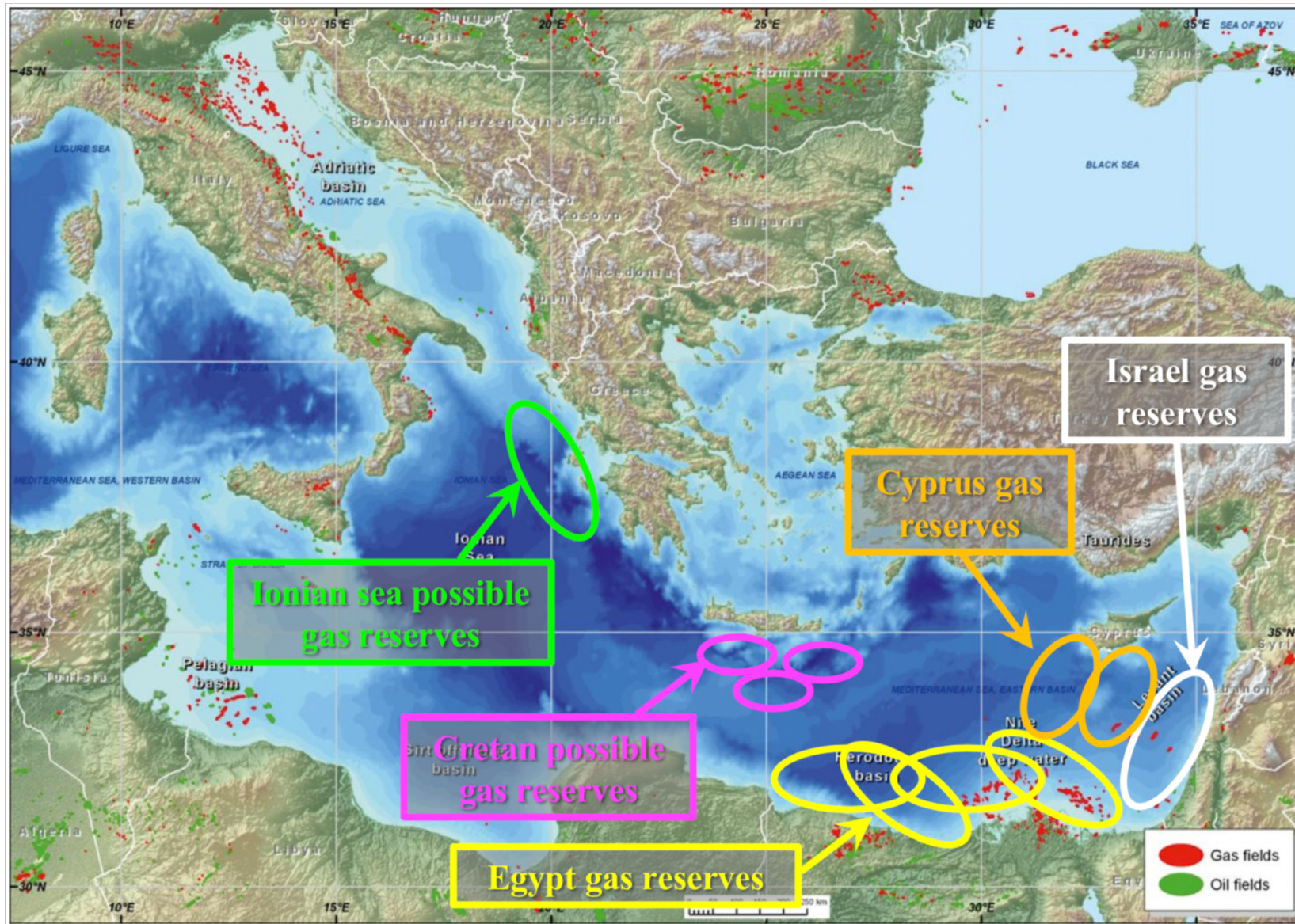
- **Wind potential**



- **Solar potential**



# Gas reserves in SE Mediterranean region\*

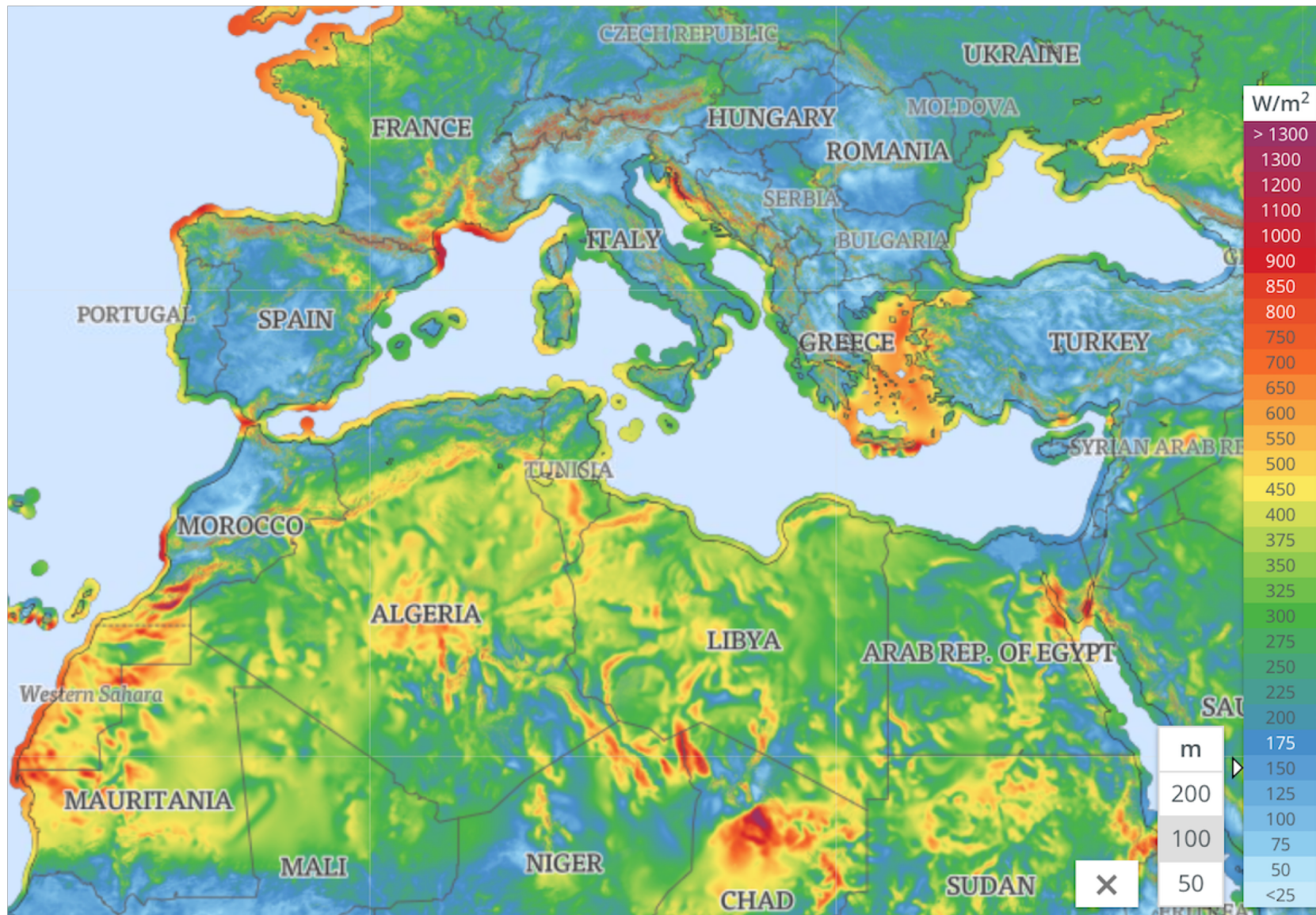


\* A. Belopolsky, et al., 2012, "New and emerging plays in the Eastern Mediterranean", *Petroleum Geoscience*

1<sup>η</sup> Τριμερής Συνάντηση των Προέδρων των Κοινοβουλίων Κύπρου, Ελλάδας Αιγύπτου  
Λευκωσία, Κύπρος, 11 Φεβρουαρίου 2019



# Wind potential in SE Mediterranean region\*

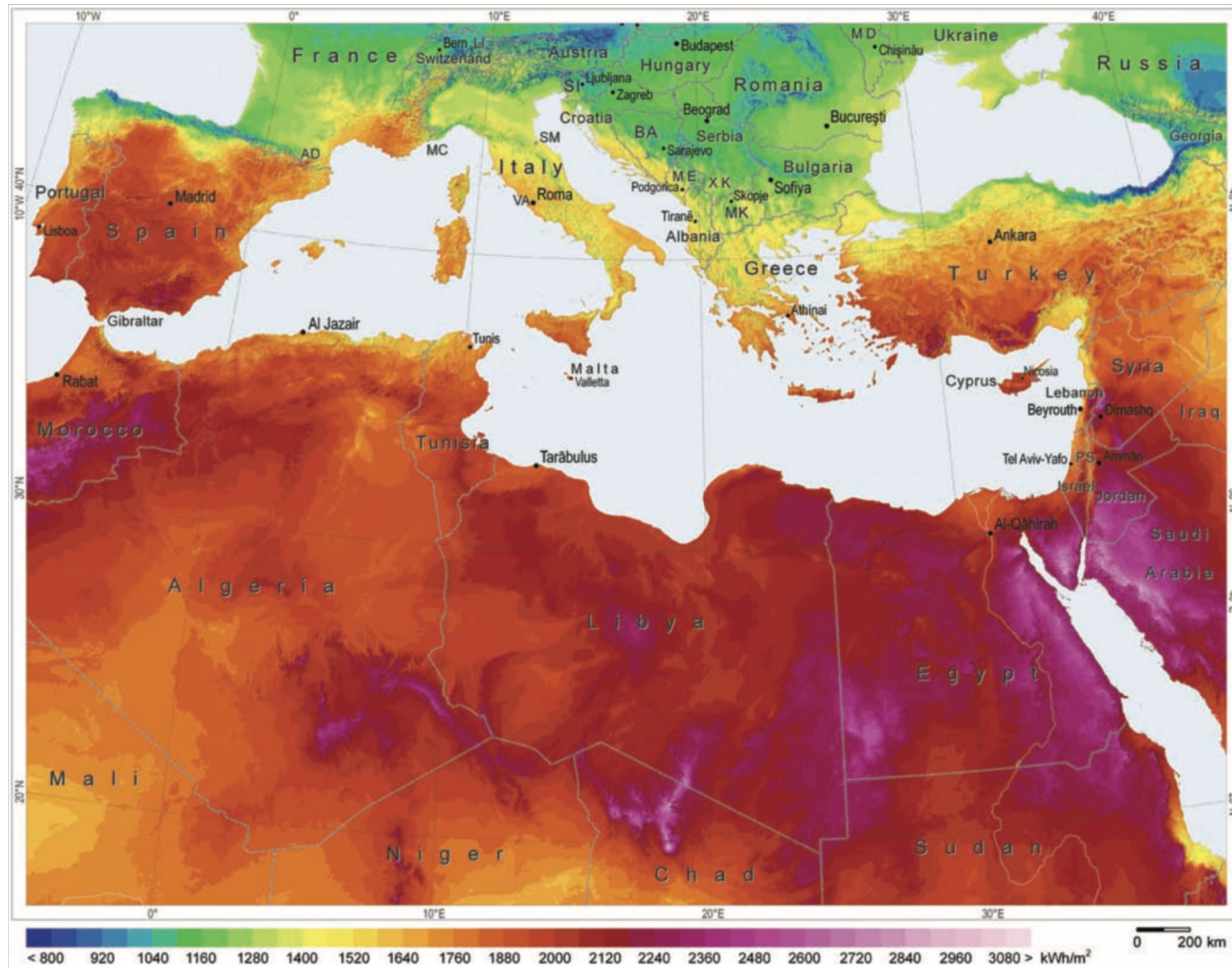


\* The Global Wind Atlas (<https://globalwindatlas.com>)

1<sup>η</sup> Τριμερής Συνάντηση των Προέδρων των Κοινοβουλίων Κύπρου, Ελλάδας Αιγύπτου  
Λευκωσία, Κύπρος, 11 Φεβρουαρίου 2019



# Solar potential in SE Mediterranean region\*



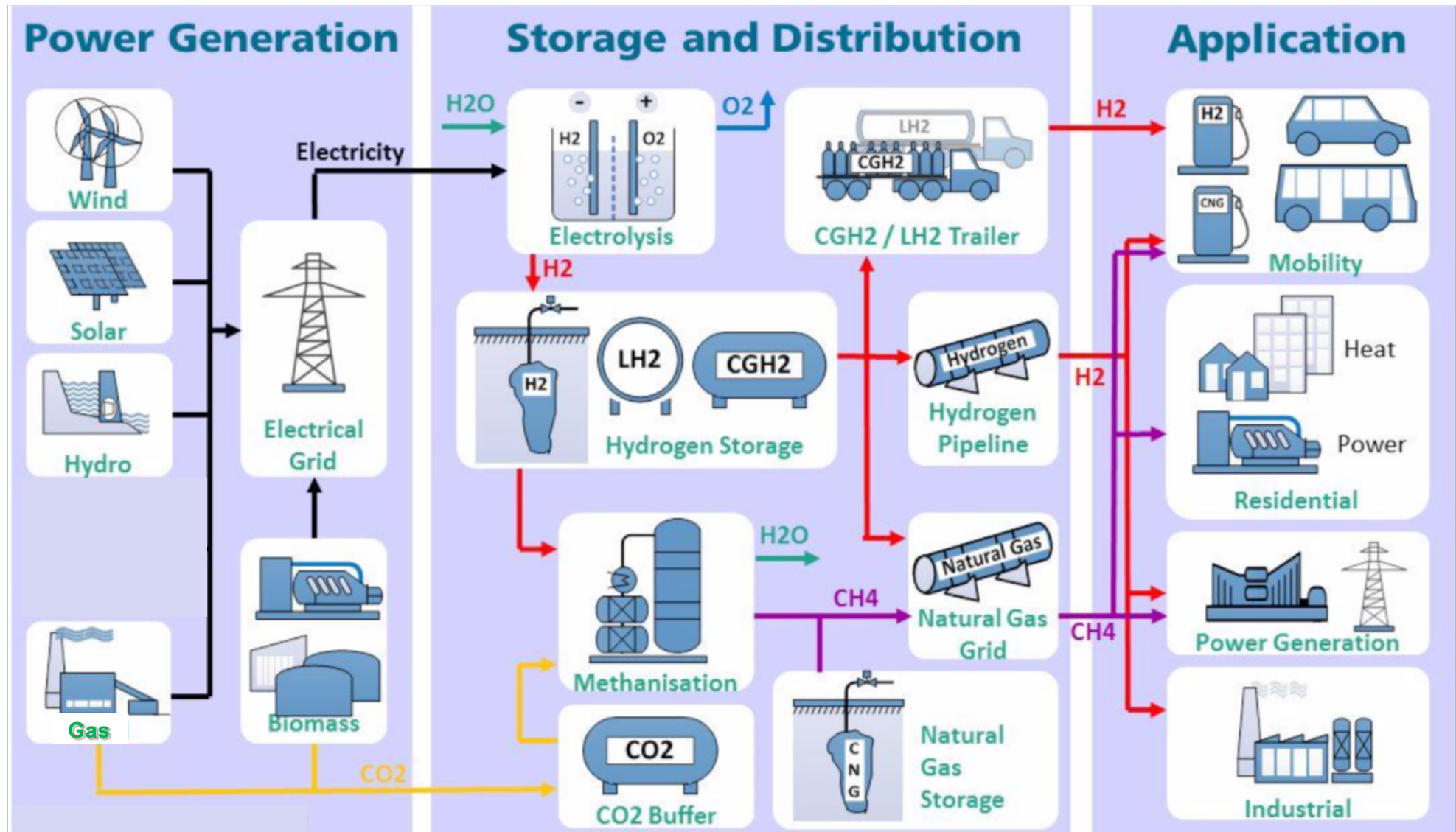
\* Easac & Pihl, Erik. (2011). Concentrating Solar Power: Its potential contribution to a sustainable energy future

1<sup>η</sup> Τριμερής Συνάντηση των Προέδρων των Κοινοβουλίων Κύπρου, Ελλάδας Αιγύπτου  
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# **The role of hydrogen**

## **Sustainable future in SE Mediterranean region**

# Potential role of hydrogen in the energy transition

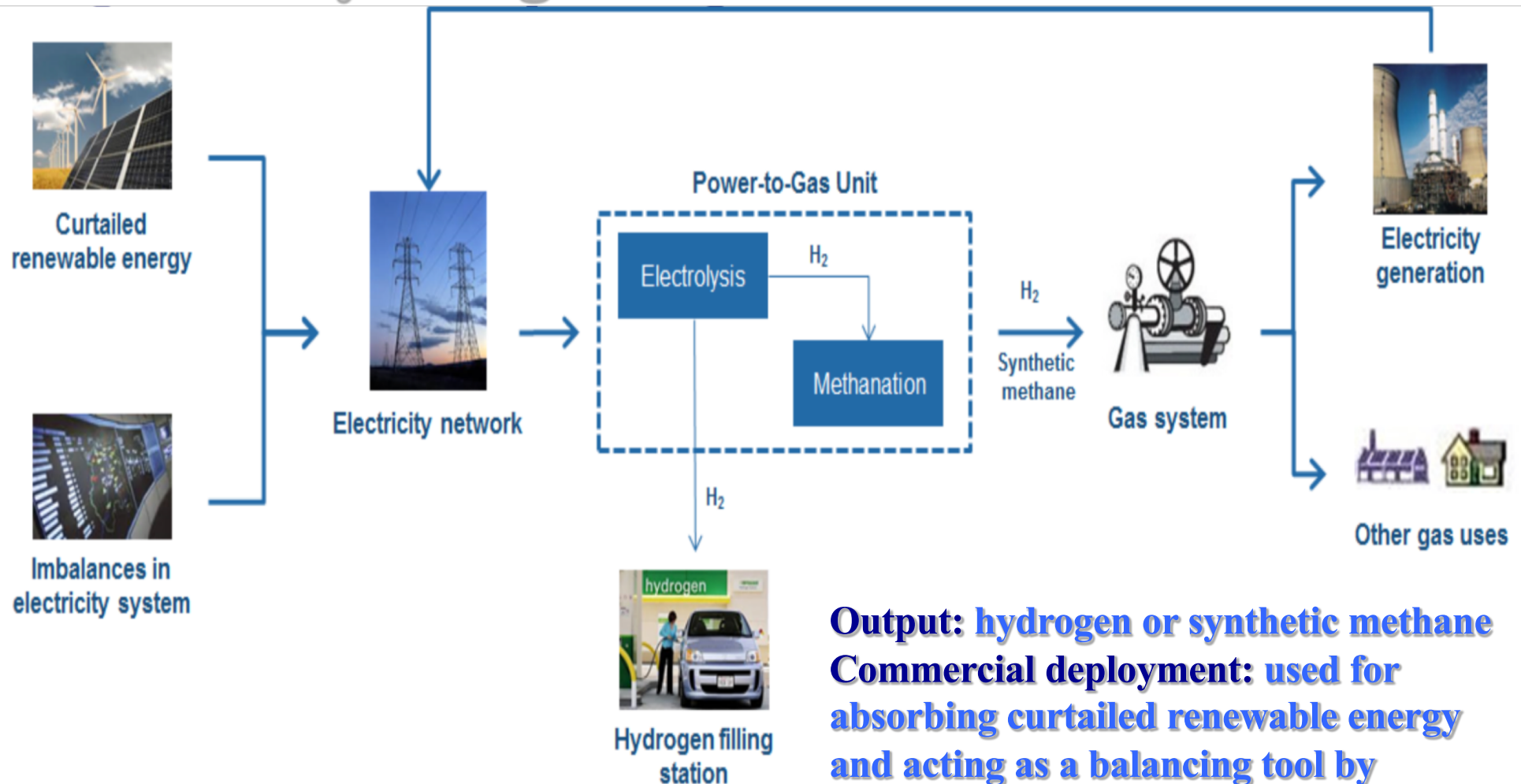


Source: EU, 2019



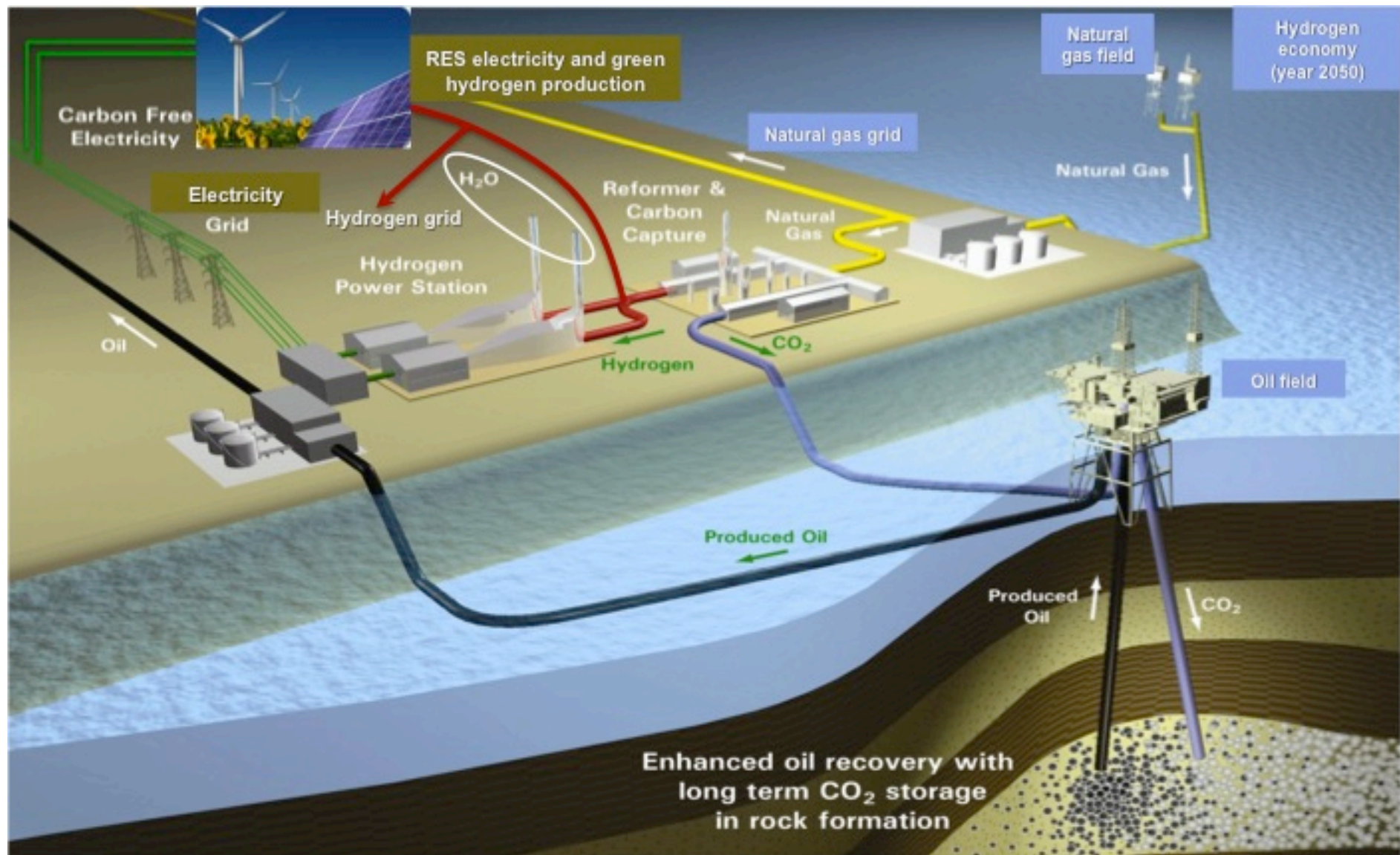
# Power-to-Gas (P2G)

- energy storage technology linking the electricity and gas infrastructure



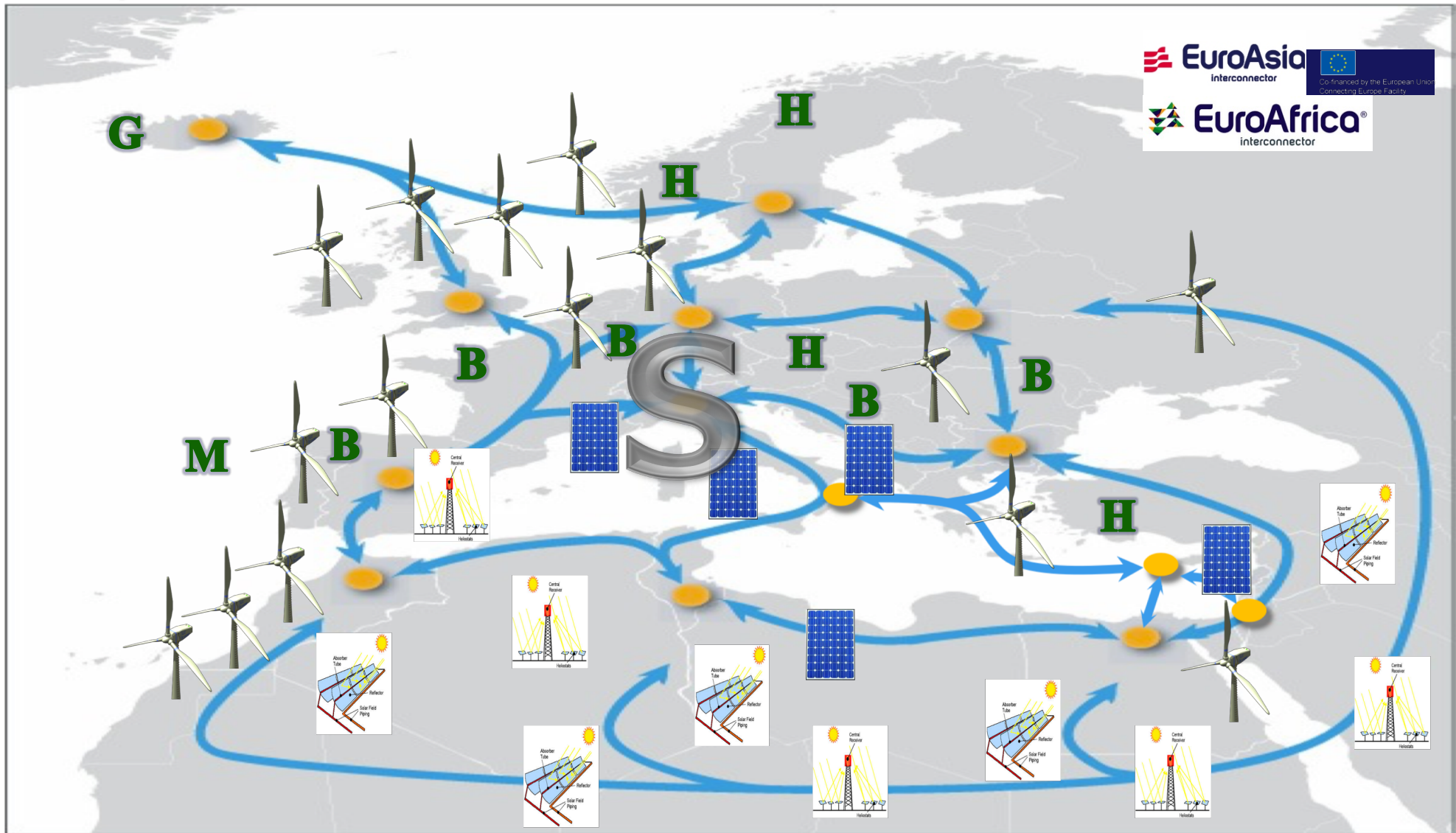


# Towards hydrogen economy\*



\* Poulikkas A., 2013, *Sustainable Energy Development for Cyprus*, ISBN: 978-9963-7355-3-2

# The Super Smart Grid\* (may allow for 100% RES)



\* Poulikkas A., 2013, *Sustainable Energy Development for Cyprus*, ISBN: 978-9963-7355-3-2

# Next steps

## Towards hydrogen economy



# Next steps

## First steps towards the development of sustainable energy strategy

- **Horizon up to 2060**
- **Development of strategic plan:**
  - ~ **Electrical interconnections**
  - ~ **Integration of sustainable technologies**
  - ~ **Pipeline interconnections (or virtual pipelines)**
  - ~ **Use of hydrogen after 2030**
  - ~ **Hydrogen production**
    - From renewables
    - From natural gas
- **Energy exporters to EU**

