renac
renewables academy

1 – Introduction to hydrogen
2 – The element hydrogen (H_2)
- **1** What is hydrogen? (I)
- **2** What is hydrogen? (II)
- **3** The hydrogen economy
- **4** Global hydrogen use

3 – Types of hydrogen applications
- **1** Mobile applications
- **2** Energy sector applications
- **3** Industrial applications
- **4** Portable applications

4 – Hydrogen generation and fuel cells
- **1** Hydrogen productive pathways
- **2** Hydrogen production via electrolysis
- **3** Types of electrolysers
- **4** Hydrogen production with steam reforming
- **5** Other modes of hydrogen production
- **6** Fuel cells

5 – Hydrogen infrastructure
- **1** Hydrogen transport and storage
- **2** LOHC –Liquid Organic Hydrogen Carriers
- **3** Hydrogen safety concerns

6 – System integration / sector coupling (Power-to-X) PtX
- **1** System integration and green hydrogen

7 – The cost of hydrogen
- **1** The economics of hydrogen

8 – International hydrogen strategies and roadmaps
- **1** Hydrogen strategies and roadmaps
- **2** The EU hydrogen strategy
- **3** The German National Hydrogen Strategy
- **4** The renewable hydrogen roadmap of California, USA
- **5** The hydrogen strategy in Australia
- **6** Cross-border project: Netherlands-Germany H_2 cluster- “NortH2”

9 – Summary of the course