

INVEN CAPITAL

YOU INNOVATE

WE INVEST

TOGETHER WE GROW

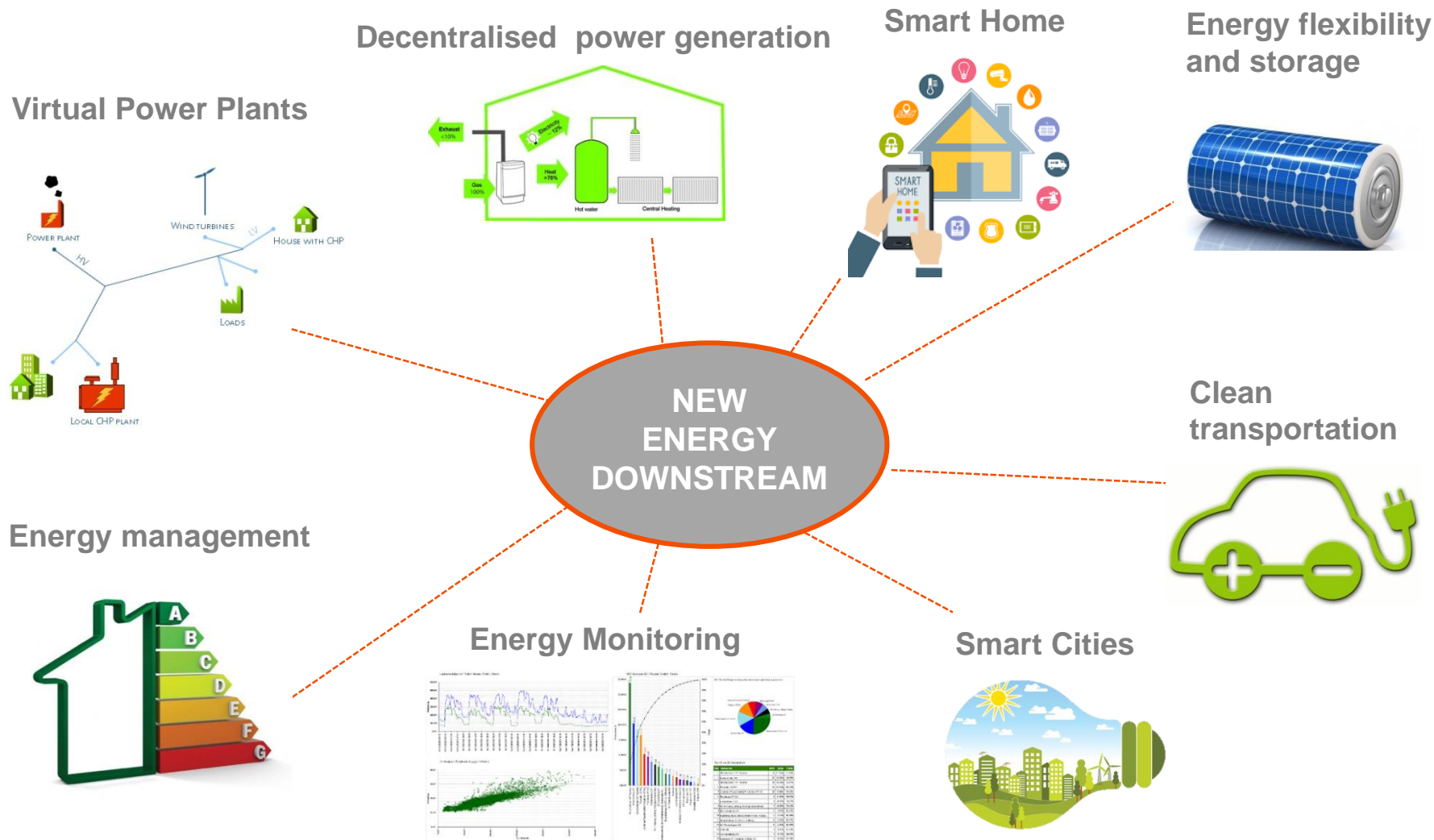
May 2017

Michal Mravec

Inven Capital, investiční fond, a.s.

- INVEN CAPITAL is an **independent corporate VC fund** established by a major European energy utility ČEZ to invest in the European new energy sector.
- Our team seeks **investments into small to middle-market innovative growth smart energy startups from Europe**.
- We target **later stage growth opportunities with business model proven** by sales and with significant growth potential.
- We focus on **creating long term value** through an active support of the investee companies and their founders. In our approach, we actively support strategies for organic and/or acquisition growth.
- Given our energy background we can provide **unique benefits** to our portfolio companies and co-investors through (a) in-depth energy sector expertise, (b) utilization of ČEZ group client base and (c) technological synergies related to asset base of our investor.

WE SEE A BIG POTENTIAL IN THE SMART ENERGY SECTOR



OUR INVESTMENT STRATEGY

Target sectors	<ul style="list-style-type: none">▪ Smart Energy Sector▪ Innovative business model and progressive technology
Transaction types	<ul style="list-style-type: none">▪ Expansion capital* (money-in)▪ Buy-out (money-out)▪ Both minority and majority stakes are possible (incl. co-investments)
Optimal investment size	<ul style="list-style-type: none">▪ EUR 3-20m (equity)▪ Smaller and larger investments are possible
Geographical focus	<ul style="list-style-type: none">▪ Europe
Investment period	<ul style="list-style-type: none">▪ 5-7 years
Exit	<ul style="list-style-type: none">▪ Trade sale or IPO
Fund size	<ul style="list-style-type: none">▪ EUR 180m

WHAT DO WE LOOK FOR IN STARTUPS? **INVEIN CAPITAL**

- Innovative product and unique product/service/business model solving a real problem/pain
- Strong and committed founders/management team that can flexibly adjust the business
- Long-term market potential
- Business model and product viability proven by sales

OUR PORTFOLIO

INV/E/N CAPITAL



tado°



CLOUD & HEAT



- Sunfire develops and produces **high-temperature solid oxide fuel cells** (SOFCs) and **high-temperature electrolysis cells** (SOECs) with applications in multiple markets.
- The SOFC use cases cover residential and commercial CHP units, off-grid power generation or auxiliary power units for marine and trucking industries.
- The SOEC technology is used in Power-to-Gas and Power-to-Liquids applications, such as industrial hydrogen production, synthetic fuels production or energy storage.
- The company was **founded in 2010** and is **headquartered** in Dresden, Germany.
- ČEZ and Sunfire are working together on a hydrogen generation project at a ČEZ wind farm in Romania



Renewable. Affordable. Hydrogen Everywhere

High-Temperature Electrolysis (SOEC)

Investors

ELECTRANOVA
CAPITAL

idinvest
PARTNERS

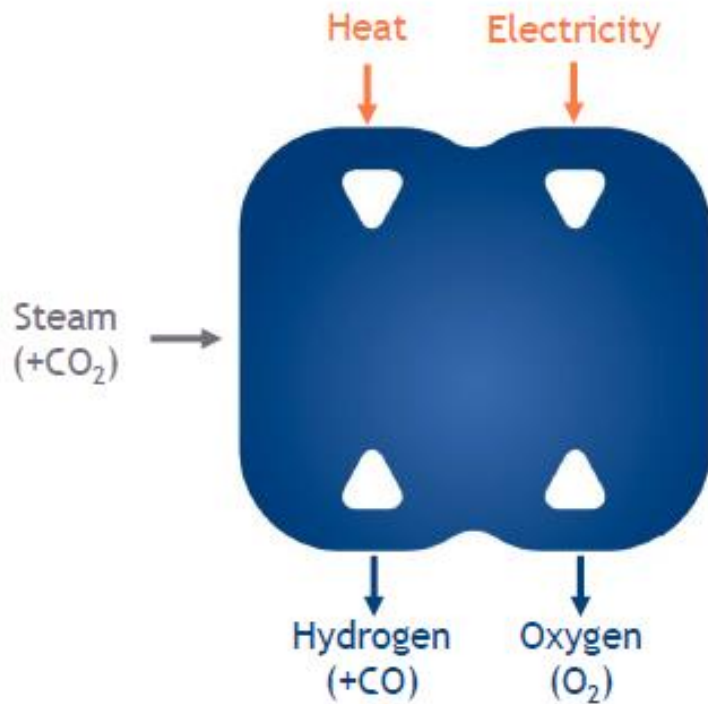
INVIE/N CAPITAL
CEZ GROUP

KFW



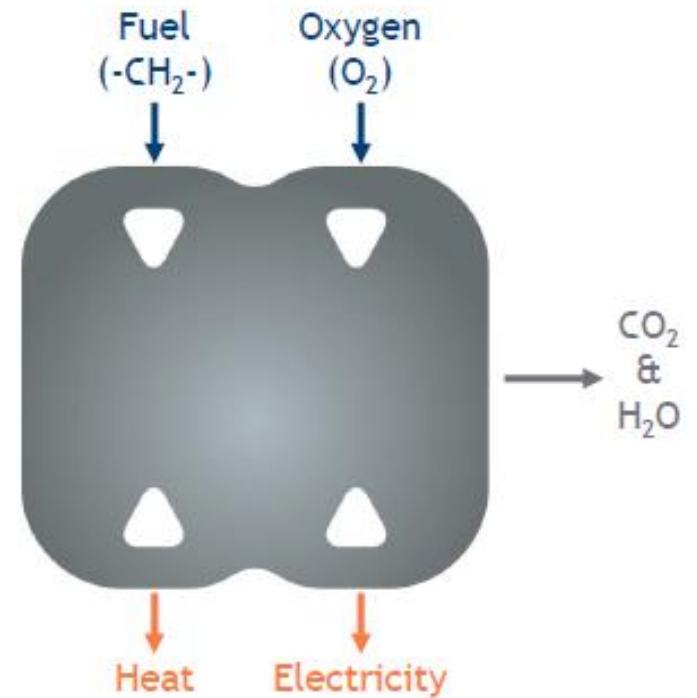
Solid Oxide Cells convert...

... electricity into hydrogen



Electrolysis (Charging)

... chemical energy into electricity and heat



Fuel Cell Mode (Discharging)

Solid Oxide Power Core

Repetition Elements



Serial Connection



Power Core



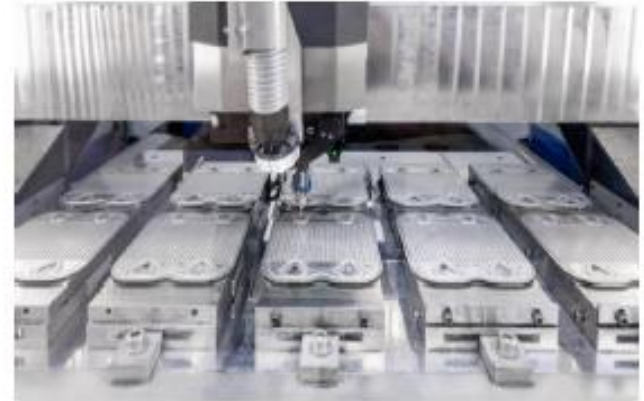
- Sealings
- Cell
- Bipolar plate

- + 30 cells/repetition unit
- + Standard production unit
- + Power input: 2.5 - 4.0 kW
- + H₂ output: 1 - 1.25 Nm³/h

Core USPs

- + **Highest efficiency** in hydrogen production ($82\%_{\text{LHV}}$ or 3.7 kWh/Nm^3) and power & heat production ($35\text{-}60\%_{\text{AC}}$ and $90\%_{\text{total}}$) compared to legacy technologies such as PEM and Alkaline
- + **Tolerance to carbon** in electrolysis mode via co-electrolysis of CO_2 and H_2O and in fuel cell mode via internal reforming of hydrocarbons (natural gas, LPG, diesel, etc.)
- + **Reversibility** using the same one unit for electrolysis and fuel cell (optional)
- + **Flexibility** of operation between 30 - 125%

Sunfire promises **low costs**, **high reliability** and **readiness to scale**.

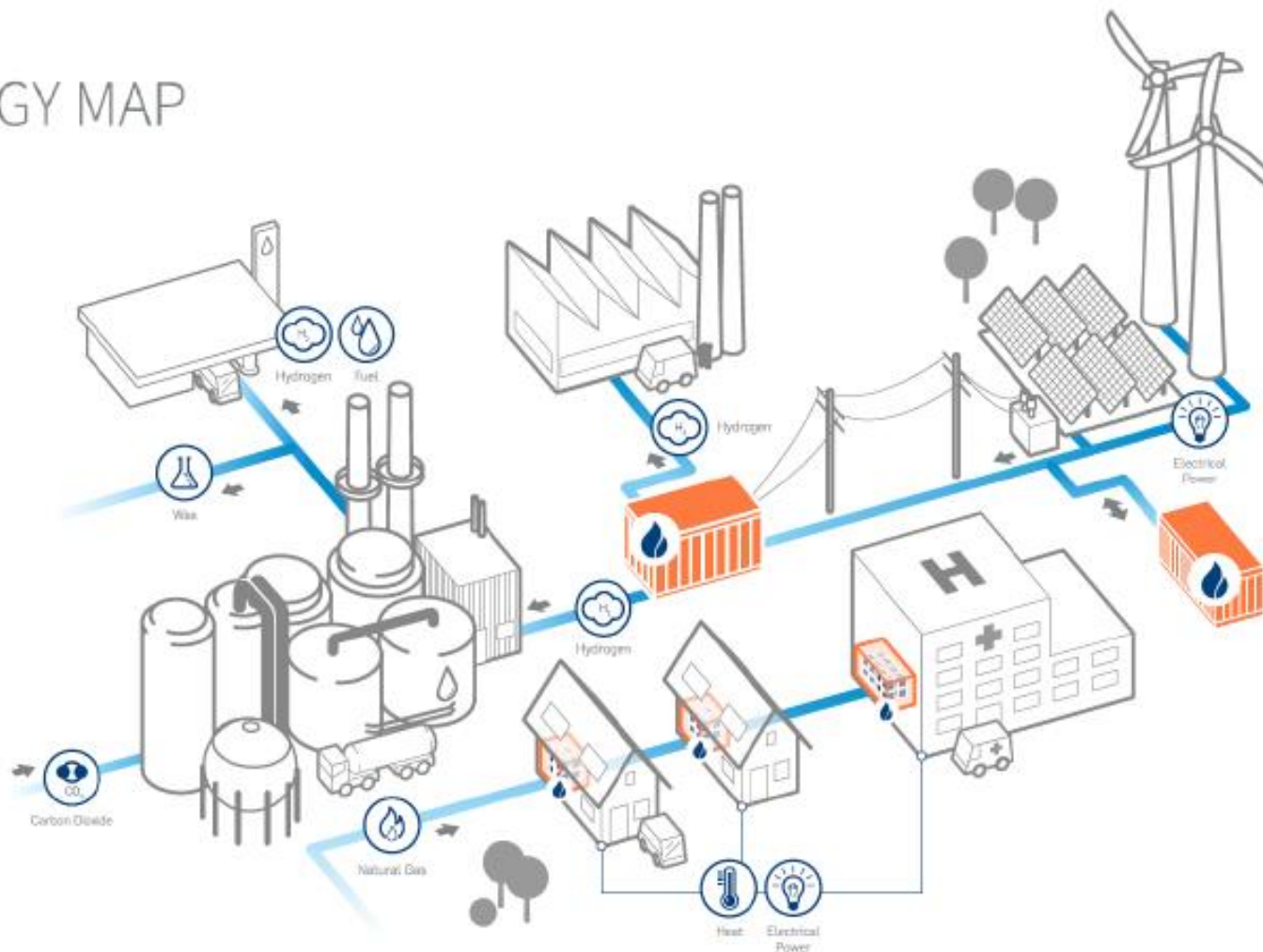


Stack Production in Dresden



System testing in Dresden

ENERGY MAP



Sunfire's Mission

100 % "Energiewende" via sector coupling:

To bring **renewable energy everywhere** by bridging the gap between the power, mobility, chemicals and heat sectors.

One Core - Multiple Products

+ Heat and Power for Households



+ Power and Heat for Commercial Buildings



+ Power for Remote Locations

+ Fuels and Gases for Mobility + Industry

Selected Reference Projects



- + 1x 150 kW SOEC power input and 40 Nm³/h hydrogen output
- + SOEC efficiency of >80 %LHV
- + Installed at an industrial steel plant
- + Meeting H₂ quality standards of steel industry



150 kW SOEC unit in Salzgitter, Germany



- + 2x 100 kW SOEC power input and 50 Nm³/h hydrogen output
- + Reversible mode with 2x 20 kW and roundtrip efficiency of ca. 45%
- + Electricity storage for autonomous electricity supply during day and night (PV connected)

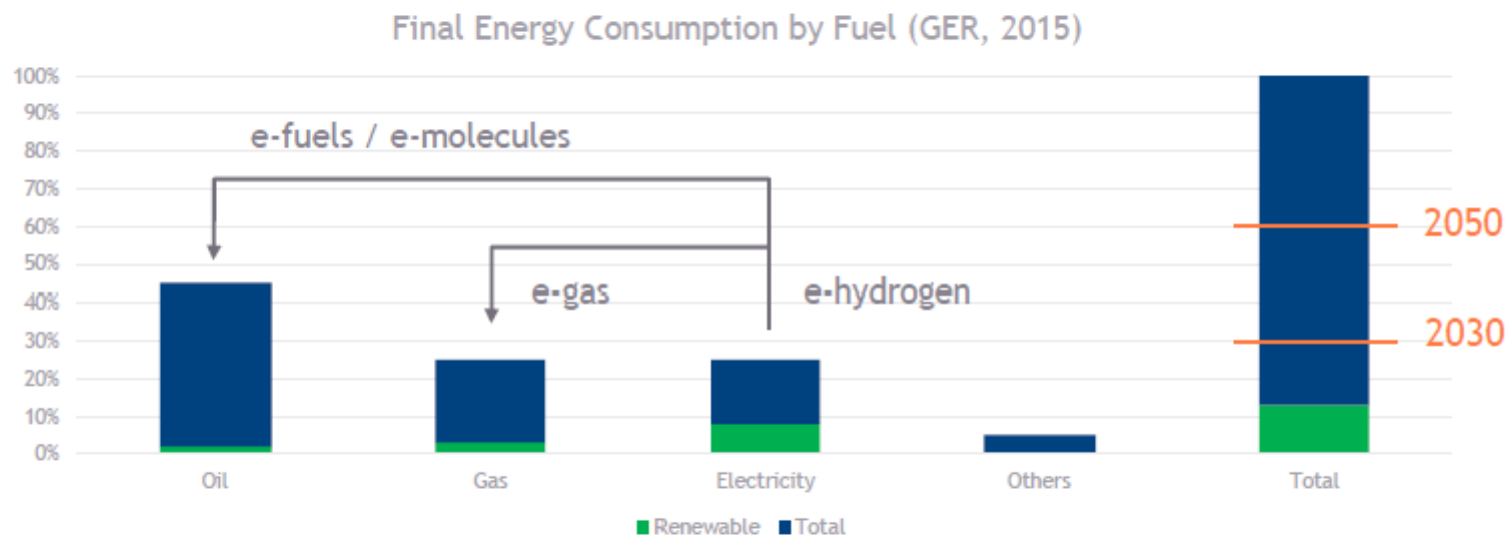


200 kW SOEC unit in Los Angeles, USA

BACK-UP



Hydrogen is the bridge between the sectors

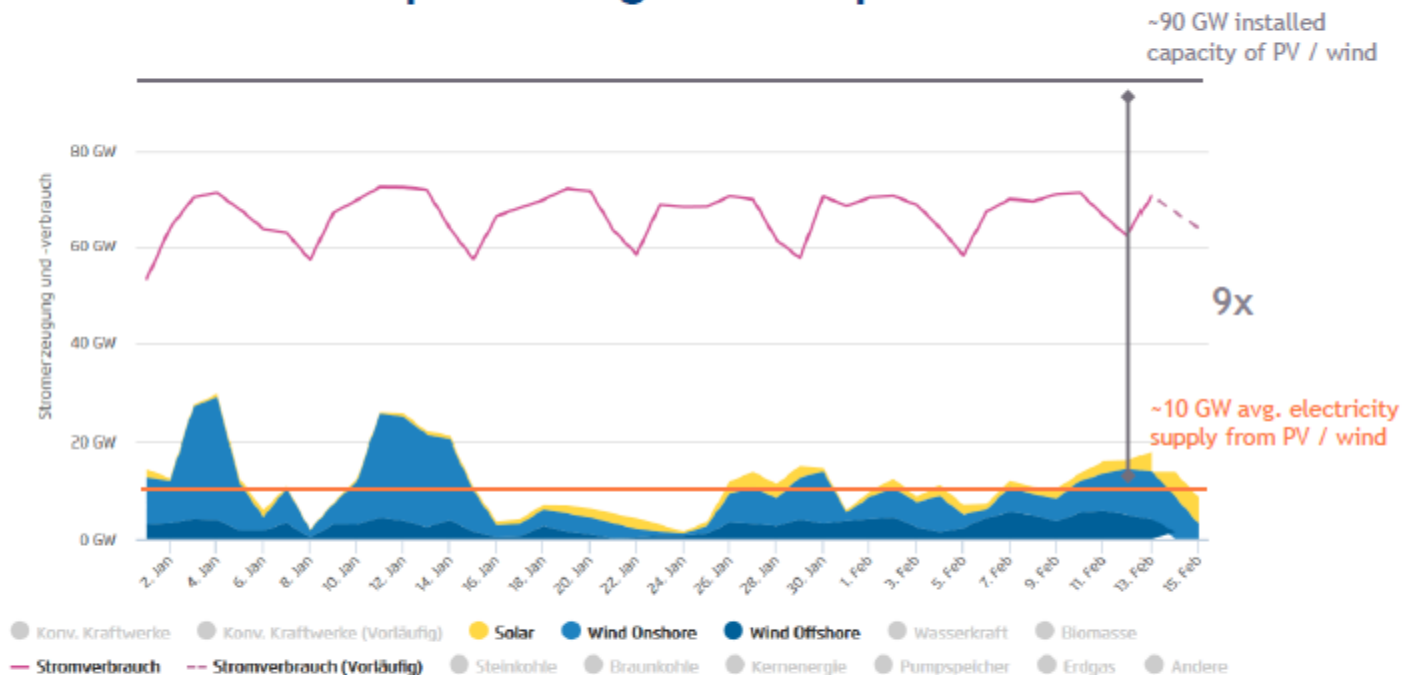


- + Sectoral integration means the integration of the power sector with the oil and gas sectors via the use of hydrogen
- + By purchasing renewable electricity directly from operators through Power Purchase Agreements (PPA) the share of renewable electricity production can be increased at no additional costs for the system





Electrification requires large overcapacities



Agora Energiewende, Stand: 15.02.2017, 14:10

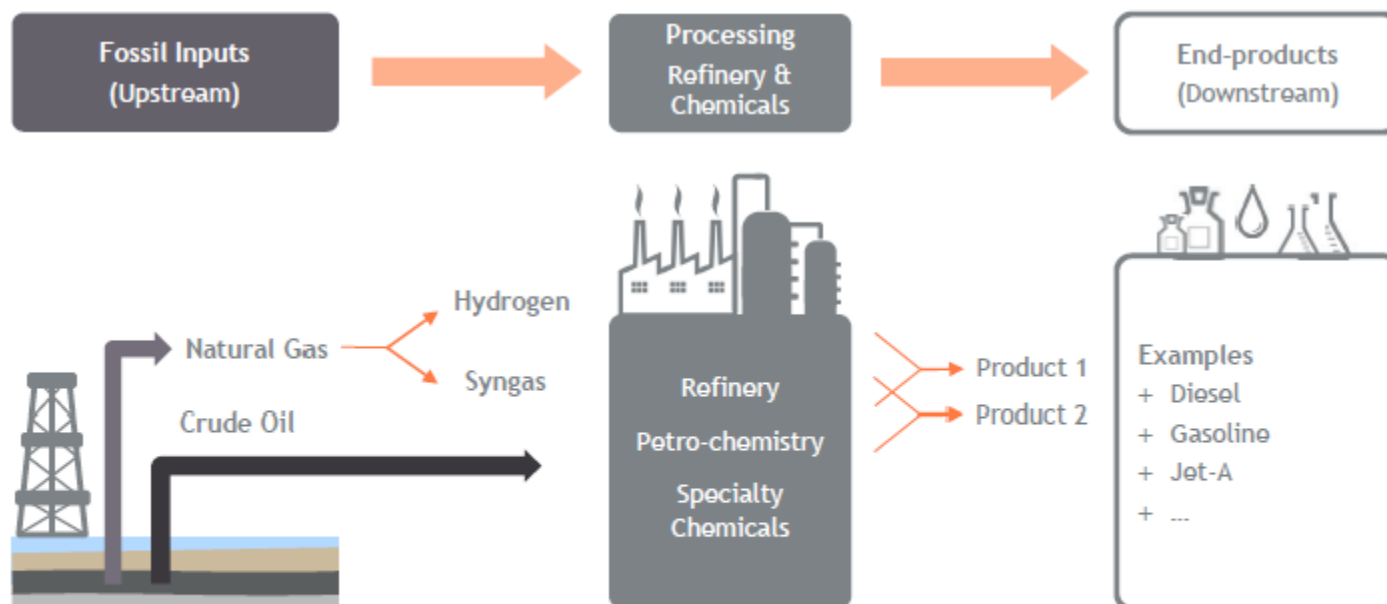
- + Solar and wind power are fluctuating and seasonal
- + A full electrification would require significant overcapacities

Source: Agora-Energiewende



Hydrogen for refineries - the first use-case

- + Hydrogen required for the production of fuels in refineries (diesel, gasoline, etc.)
- + Only in Germany, >100.000 t/a hydrogen demand currently produced from natural gas

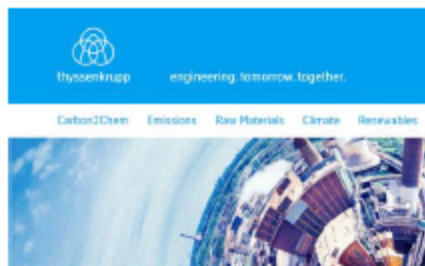


H2 for steel industry

- + The steel industry is confronted with severe CO₂ emission reduction targets
- + The steel industry currently requires H₂, e.g. in the annealing process (ca. 100 kg/h for a medium sized plant)
- + H₂ is bought from gas suppliers, e.g. Linde / Air Liquide, at >4 €/kg
- + In the future, wind mills could produce electricity at <0.06 €/kWh for electrolysers. This would result in hydrogen costs at parity with the fossil price of hydrogen onsite

- + The steel sells a lot of its materials to the automotive and oil & gas sector. Only with hydrogen those markets will remain at a similar size.
- + Several companies invest into the development of H₂ transport pipelines, as well as electrolysis equipment.

Multiple projects in the steel industry



- + ThyssenKrupp: Carbon2Chem project - „We want to obtain the required electricity from renewable energies [for hydrogen production] - whenever there is a surplus and the cost of green electricity is particularly low.“



- + Voestalpine is building a pilot facility for green hydrogen at the Linz location: H2FUTURE - “The EU’s climate and energy goals stipulate a 40 percent reduction of CO2 emissions by 2030, which poses almost unsolvable problems for energy-intensive industries. The H2FUTURE project is an important milestone on the path towards coupling the energy and industry sectors.”



- + Flachstahl Salzgitter GmbH: GrInHy project - “The GrInHy project targets the integration and validation of a High Temperature Electrolysis (HTE) at the industrial site of Salzgitter Flachstahl GmbH for hydrogen production.”