



dena

German Energy Agency

Hannes Seidl, 16.10.2018, Madrid

ELECTRICITY BASED SYNTHETIC FUELS AND POTENTIAL BARRIERS

AGENDA: FIVE THESES

ONE Climate goals: We are not on track

TWO Physics may be important, but the whole system is pivotal

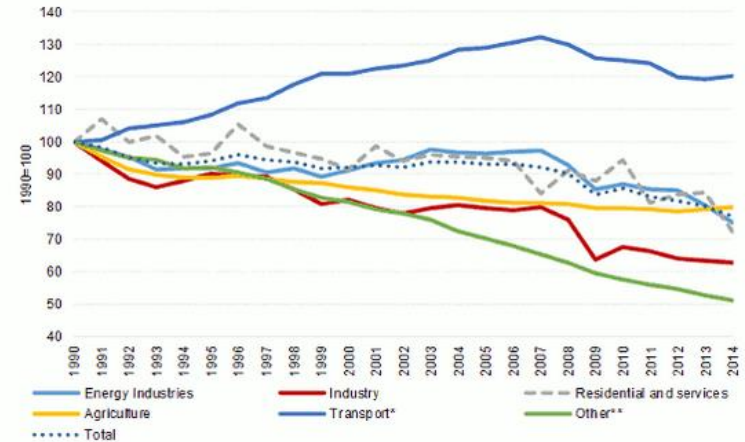
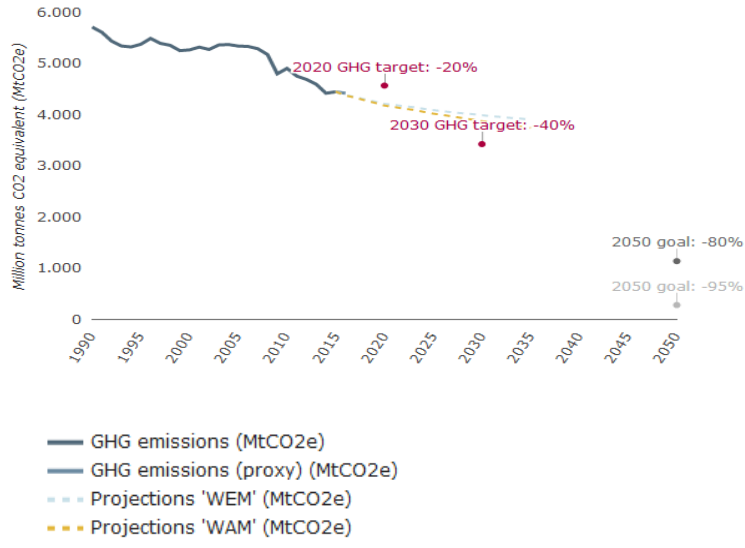
THREE Power Fuels are the third pillar of the integrated energy transition

FOUR Power Fuels demand action on all levels

FIVE Power Fuels are a global game changer

SIX We are in need of a roadmap for synthetic fuels to create a level-playing field

Greenhouse gas emission trends, projections and targets in the EU



Note: * Transport includes international aviation but excludes international maritime;
 ** Other include fugitive emissions from fuels, waste management and indirect CO₂ emissions

Source: EEA

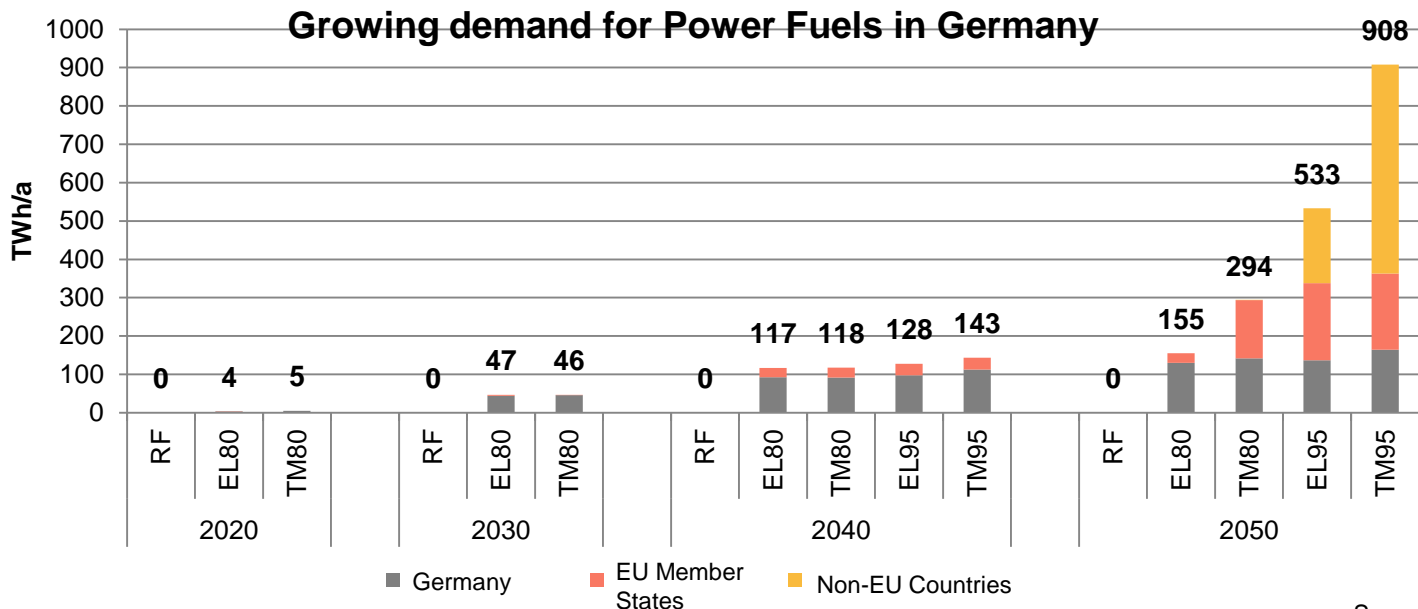
The EU seems on track to achieve the 2020 targets, but current efforts won't be enough to achieve more ambitious longer term objectives. Especially transport represents a major challenge.

- **Efficiency: clear vote for direct use of electricity**
- **Energy system: e.g. grid extension needs, reserve capacities, available space for RES, flexibility demand to be considered**
- **Certain use cases will be difficult to electrify (e.g. aviation, shipping, industry)**
- **Freedom of choice for consumers plays an important role for the overall acceptance of the energy transition**

Efficiency must be the guiding idea, but a look at the system, certain use cases and acceptance show the need for green synthetic gaseous and liquid fuels (Power Fuels).

THREE

POWER FUELS ARE THE THIRD PILLAR OF THE INTEGRATED ENERGY TRANSITION

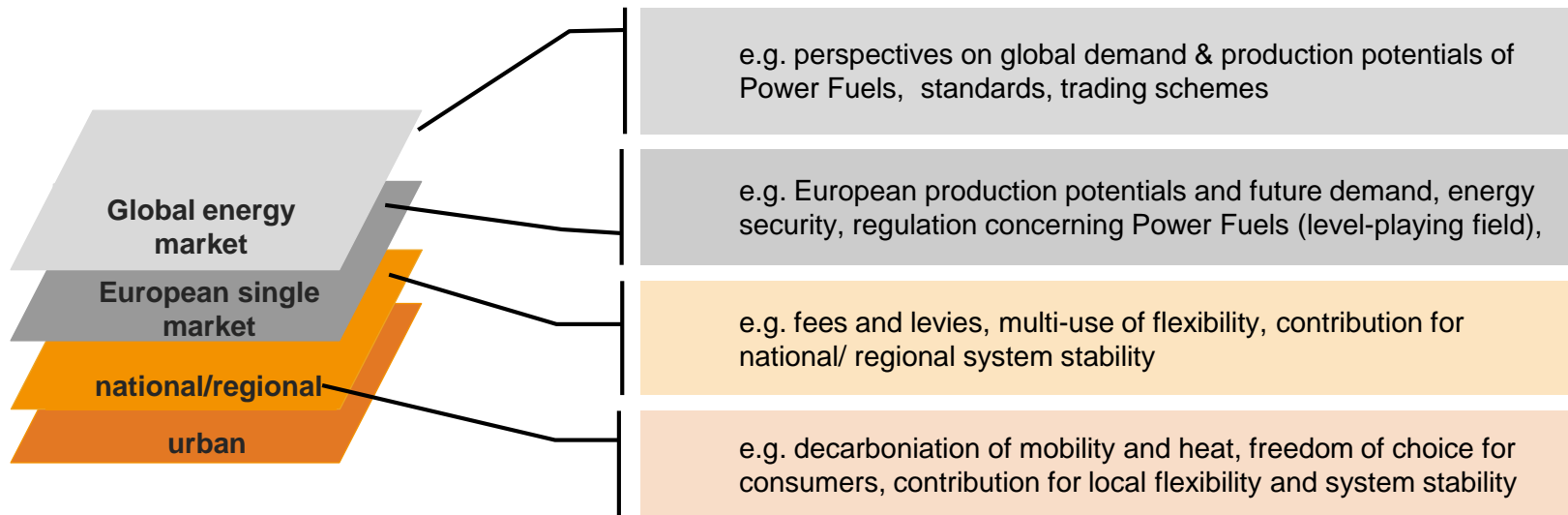


Source: dena lead study

To reach the climate targets Power Fuels are a necessary addition to the direct use of renewable electricity and energy efficiency.

FOUR

POWER FUELS DEMAND ACTION ON ALL LEVELS

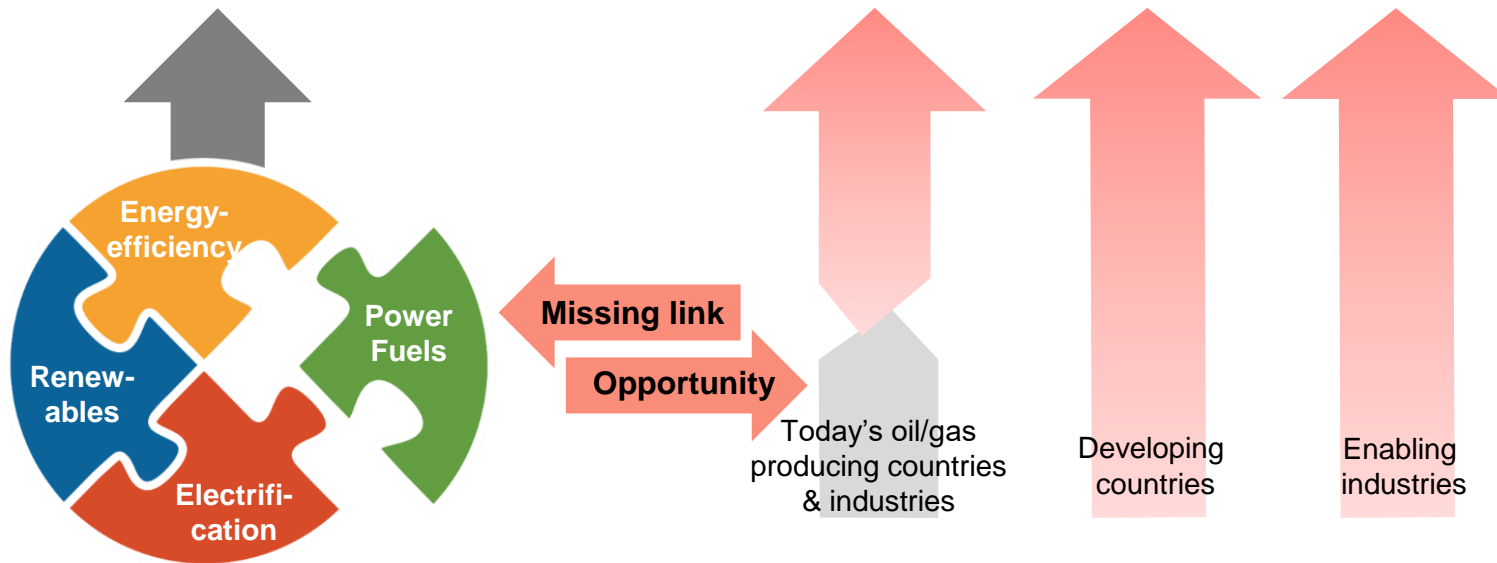


Source: dena

At all levels the economic and regulatory framework has to be adapted to support sectoral integration and optimization.

Climate goals & energy transition

Opportunities of a new global market



Power Fuels deliver the Missing Link for the international energy transition and new business opportunities for supplying countries and enabling Industries



Goal: Set up an international alliance for the development of a global market for power fuels by

- **Uniting research, business, policy makers, society**
- **Providing network, analysis and agenda setting**
- **Developing an international PowerFuels perspective and support market ramp-up**



A roadmap for Power Fuels:

- States a clear vision of the future potentials of synthetic fuels
- Addresses three important regulatory requirements:
 - CO2-pricing mechanism
 - Level-playing field
 - Broad technology mix
- Asks important open questions:
 - Which potentials / demands for Power Fuels are in the EU?
 - Which countries outside the EU could produce Power Fuels?
 - How can an international market for Powefuels be triggered?

The vision of sectoral integration has to be translated into feasible use cases with a non-discriminatory and predictable regulatory framework on all levels.

**THANK YOU FOR
YOUR ATTENTION.**

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