

# Emerging Hydrogen Infrastructure- Status Quo in Germany

IPHE Forum

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Dr. Hanno Butsch | Head of Division International Cooperation

NOW GmbH Nationale Organisation Wasserstoff- und Brennstoffzellentechnologie

# Policy Goals in Germany for Renewable Energies in the Energy System and for Road Transport

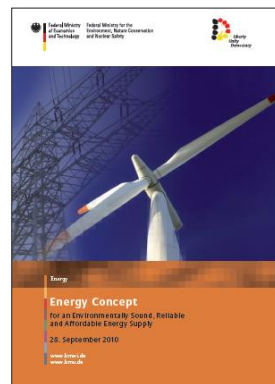
## National Climate Targets

	GHG Reduction (vs. 1990)	Share of renewables	Energy Efficiency (vs. 2008)
2020	40 %	18 %	20 %
2050	85-90 %	60 %	50 %



## Climate Targets - Transport

Reduce final energy consumption of <u>transport</u> (vs. 2005)
- 10 %
- 40 %



CO<sub>2</sub>-Emissions in Transport  
**-33.6 Mio. t**

# Current Trends to Achieve National Climate Targets

Need for action in the transport sector

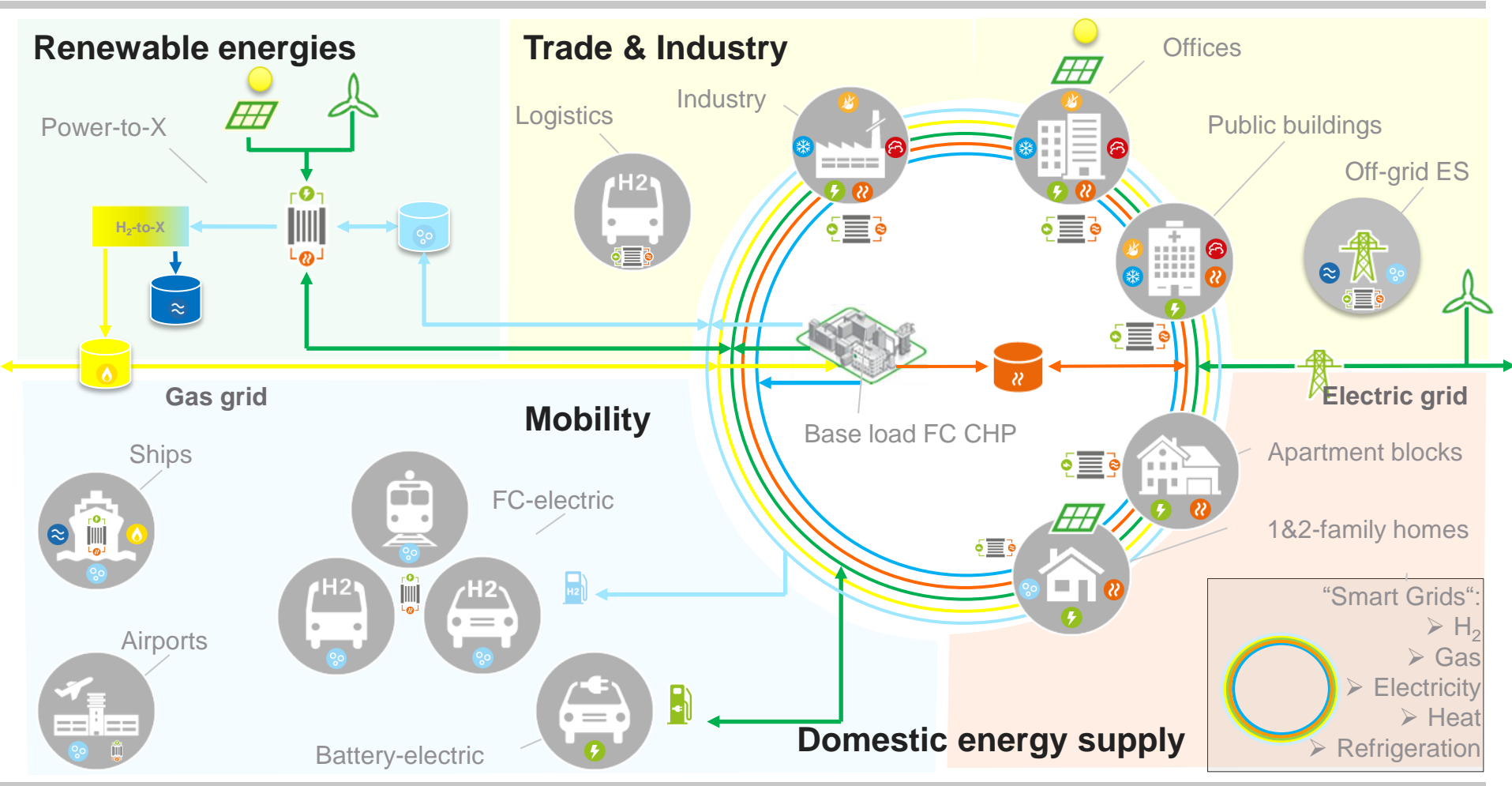
Indikator	Ist 2014	Ziel in 2020	Trend
Erneuerbare Energien am Bruttoendenergieverbrauch	13,5 %	18 %	●●●●●
Erneuerbare Energien am Bruttostromverbrauch	27,4 %	mindestens 35 %	●●●●●
Erneuerbare Energien am Wärmeverbrauch	12,2 %	14 %	●●●●●
Erneuerbare Energien im Verkehrsbereich	5,6 %	10 %	●○○○○
Primärenergieverbrauch (unbereinigt)	-8,7 %	-20 % ggü. 2008	●●●○○
Endenergieproduktivität	1,6 % p. a.	2,1 % p. a. ab 2008	●●●○○
Bruttostromverbrauch	-4,6 %	-10 % ggü. 2008	●●○○○
Wärmebedarf Gebäudesektor	-12,4 %	-20 % ggü. 2008	●●○○○
Endenergieverbrauch Verkehrssektor	1,7 %	-10 % ggü. 2005	●○○○○
Treibhausgasemissionen	-27 %	-40 % ggü. 1990	●●●○○

Erneuerbare Energien im Verkehrsbereich	5,6 %	10 %	●○○○○
Endenergieverbrauch Verkehrssektor	1,7 %	-10 % ggü. 2005	●○○○○

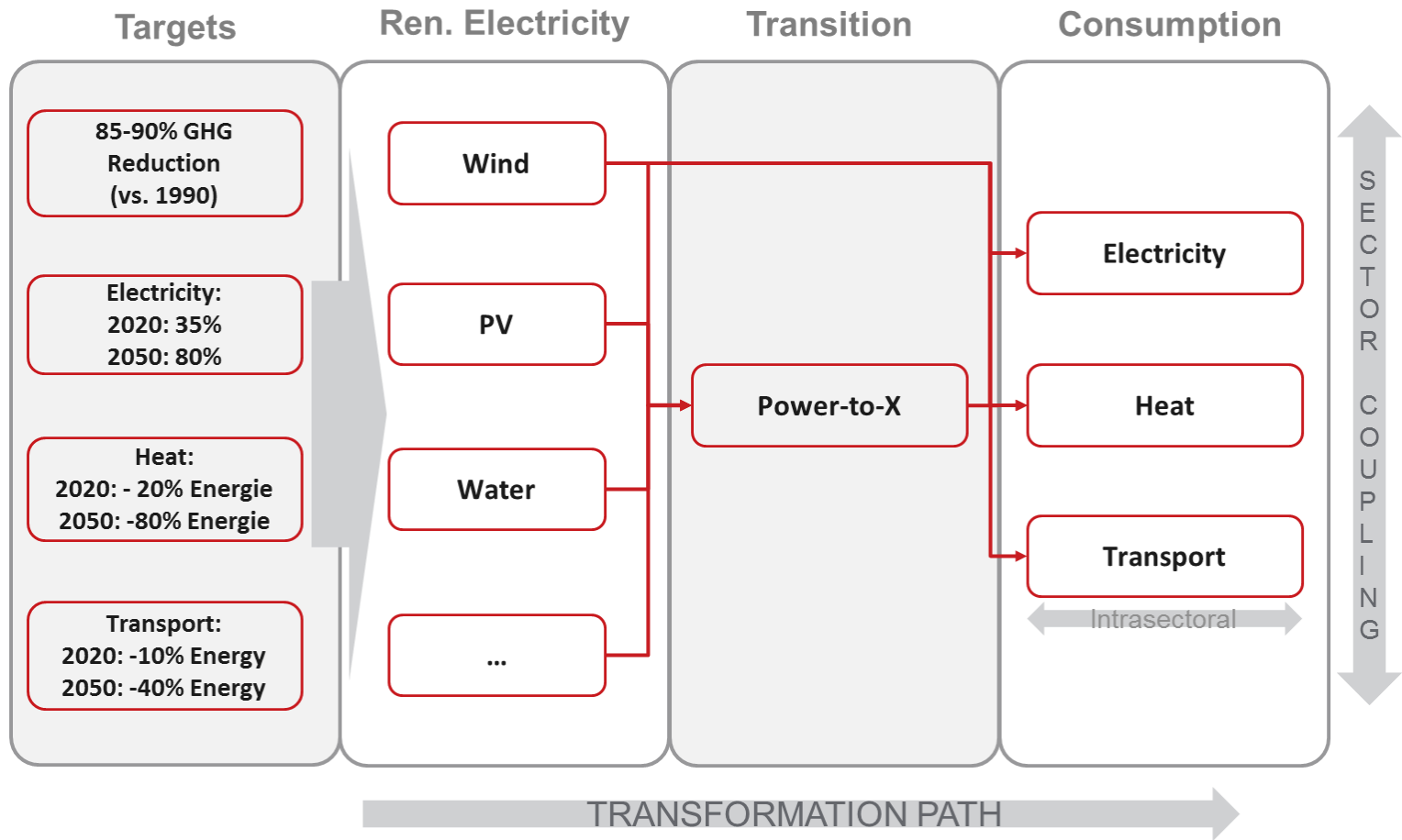
Source: <http://www.bmwi.de/BMWi/Redaktion/PDF/M-O/monitoringbericht-energie-der-zukunft-stellungnahme-zusammenfassung-2014,property=pdf,bereich=bmwi2012,sprache=de,rwb=true.pdf>

# Fuel cells

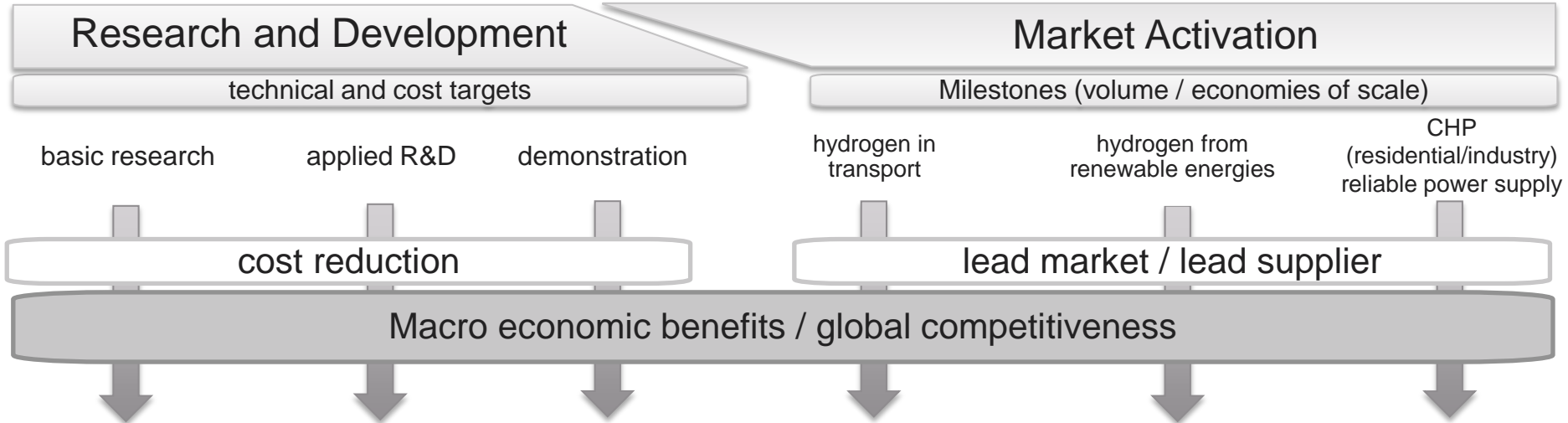
- efficient - flexible - emission-free - renewable -
- linking sectors bidirectionally - using existing infrastructures -



# How to achieve the climate targets and what are the necessary steps for an integrated energy system?



# Moving forward with fuel cells and hydrogen in Germany...



# Government program hydrogen and fuel cell technology 2016-2026 – Measures of the BMVI

Government program hydrogen and fuel cell technology 2016-2026 (1,4 bn. €)

Measures of the BMVI within the scope of NIP II (250 m € until 2019)

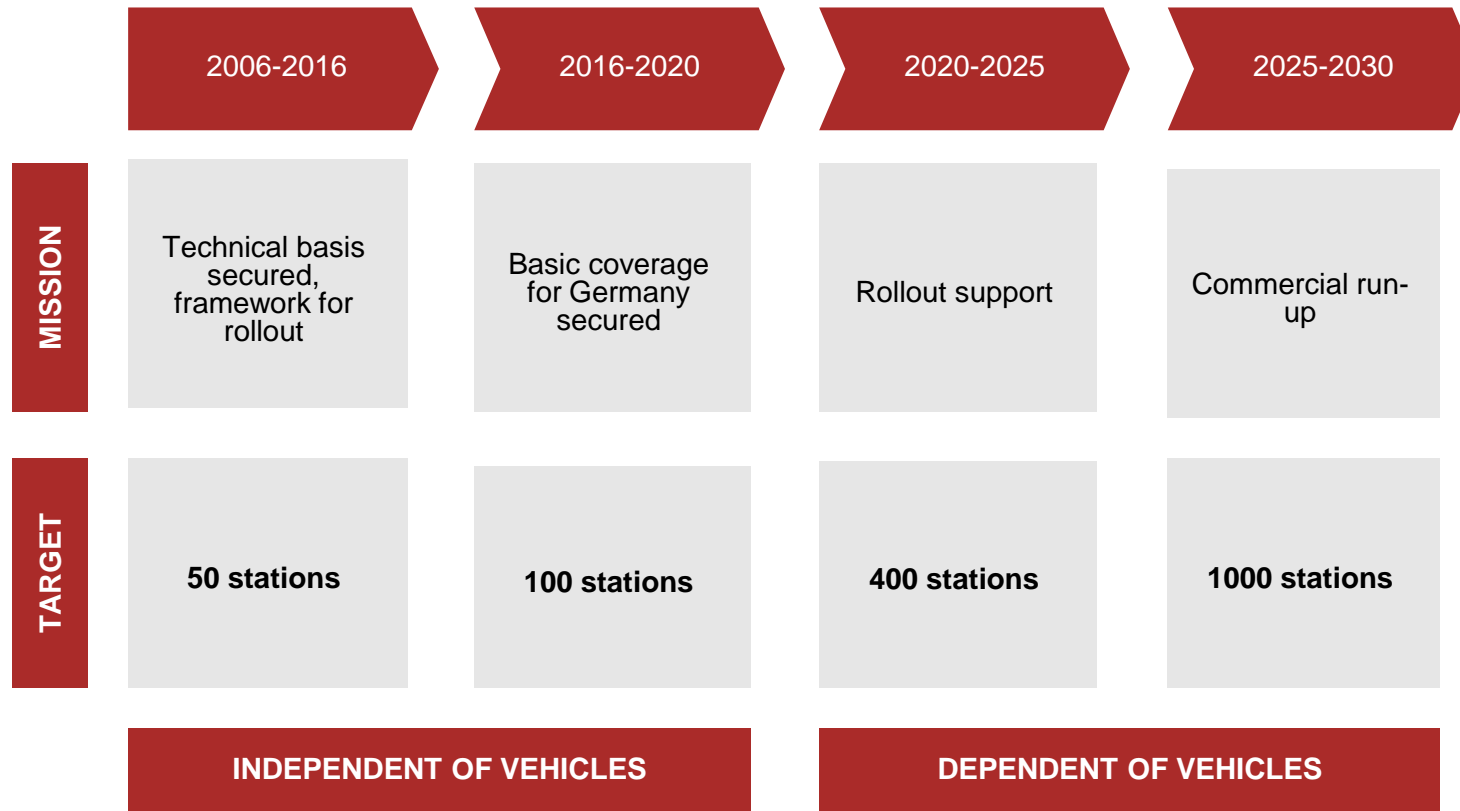
Program document BMVI  
Contribution to the development of sustainable mobility

Funding guideline of the BMVI in the course of NIP II

Funding guideline for measures of research, development and innovation  
VÖ 29.09.2016  
Initially valid until 31.12.2019

Funding guideline for measures of market activation  
VÖ end 2016  
Initially valid until 31.12.2019

# Targets and Strategy for HRS according to the AFID





**Thank you!**

Dr. Hanno Butsch  
Head of Division International Cooperation

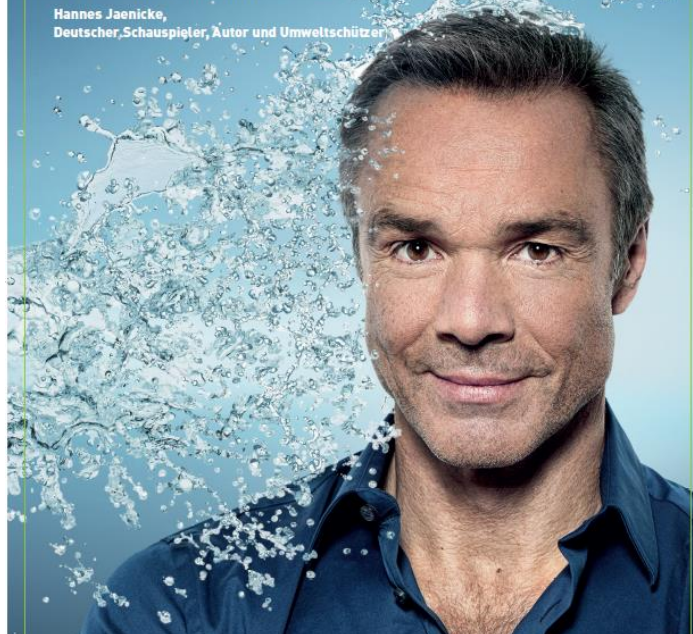
NOW GmbH  
Nationale Organisation Wasserstoff- und Brennstoffzellentechnologie

Fasanenstraße 5, 10623 Berlin


**WASSERSTOFF –  
DIE FRISCHE ENERGIE**

„Mein Treibstoff für den Klimaschutz:  
Wasserstoff und Brennstoffzellen.“

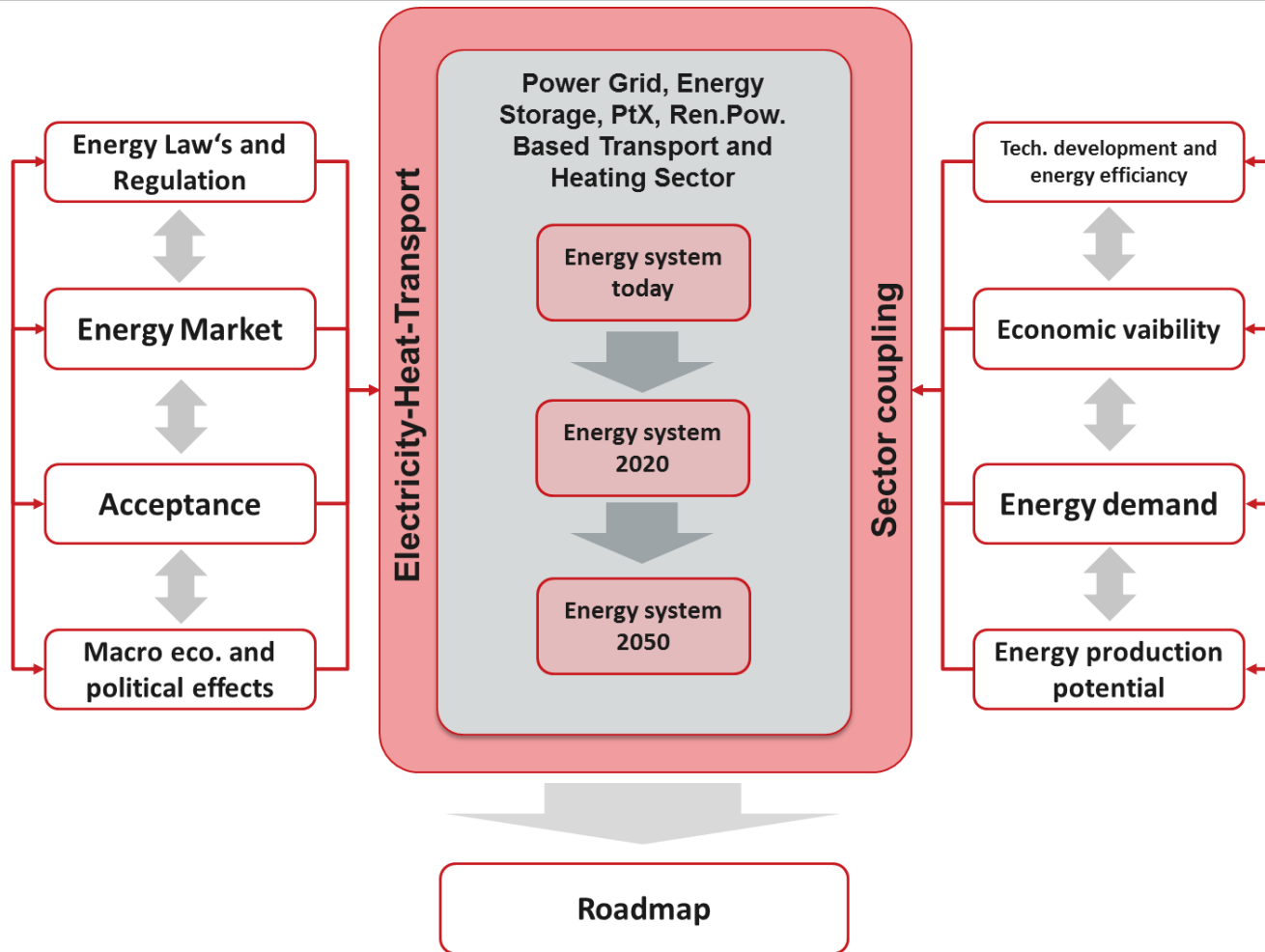
Hannes Jaenicke,  
Deutscher Schauspieler, Autor und Umweltschützer



Emissionsfrei Auto fahren? Und in den eigenen vier Wänden Energie  
effizient nutzen? Wasserstoff und Brennstoffzelle machen's möglich.  
Die Initiative „Wasserstoff Brennstoffzelle Deutschland“ sagt deshalb:  
[www.energie-fuer-immer.com](http://www.energie-fuer-immer.com)

 **WASSERSTOFF +  
BRENNSTOFFZELLE**  
Energie für immer

# How to achieve the climate targets and what are the necessary steps for an integrated energy system?



# Main points of the funding guideline of the BMVI for measures of research, development and innovation in NIP 2

## BMVI- Funding guideline NIP 2

### Research and development projects

In the fields of transport by road, rail, water or air as well as in the area of special applications

(Article 25 AGVO)

### Innovation cluster

Information will be published in the respective calls or competition (Article 27 AGVO)

### Innovation support for SME:

Contributions to the costs of acquisition, validation and defence of **patents and other immaterial assets** (Article 28 Paragraph 2 Letter a AGVO)