



# Discussion: Gas infrastructure quo vadis?

DVGW Kongress: Development & new role of gas in the energy systems

Berlin, 24 October 2018

**Dr. Wolfgang Peters, MBA**

Managing Director, The Gas Value Chain Company GmbH, Germany

# Our panelists

**Harm Grobrügge, Vice President European Biogas Association**

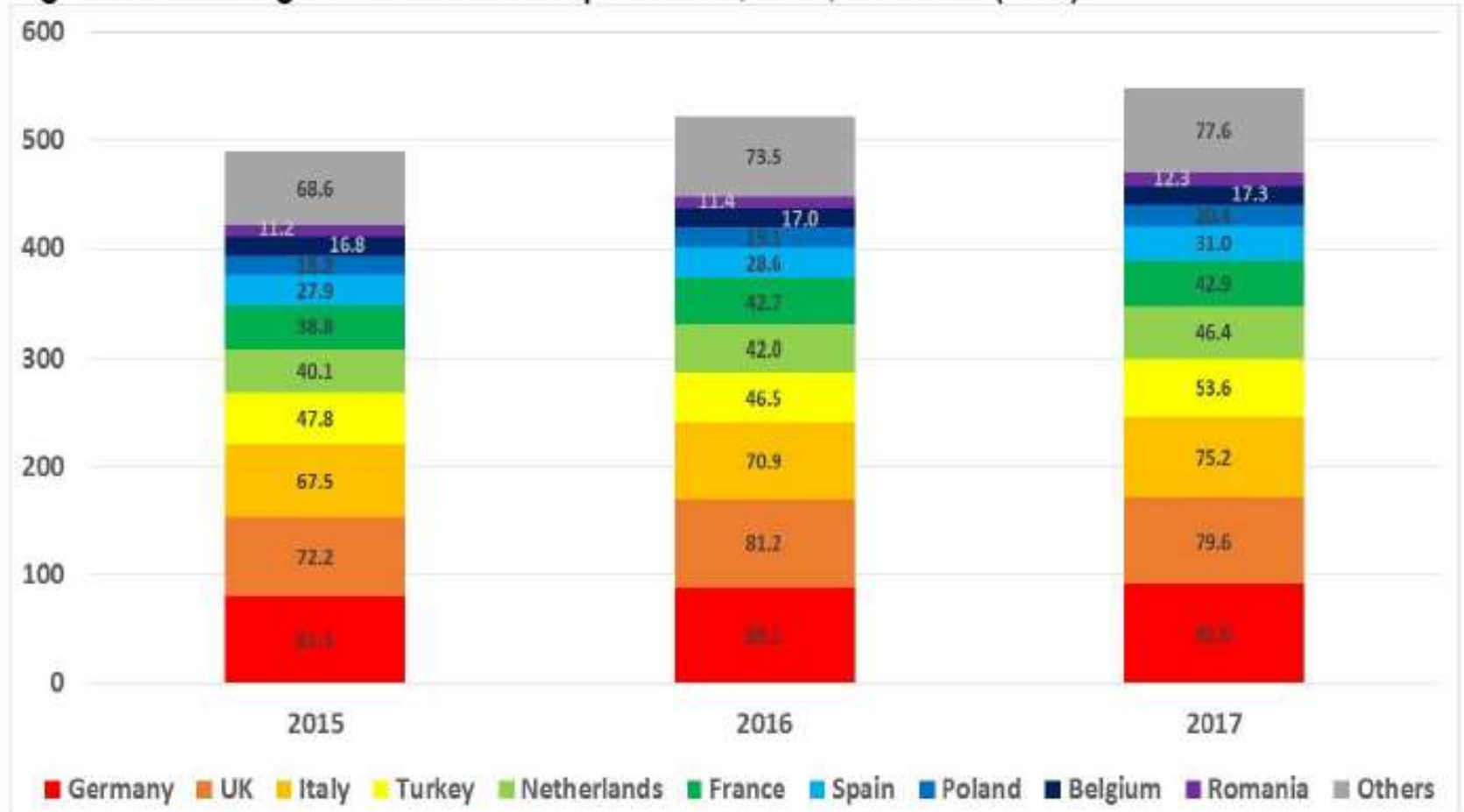
**Stephan Kamphues, Managing Director, Vier Gas Transport GmbH**

**Frode Leversund, CEO, GASSCO AS**

**Ulrich Lissek, Head of Communications, Nordstream 2 AG**

# 3 consecutive years of gas demand growth

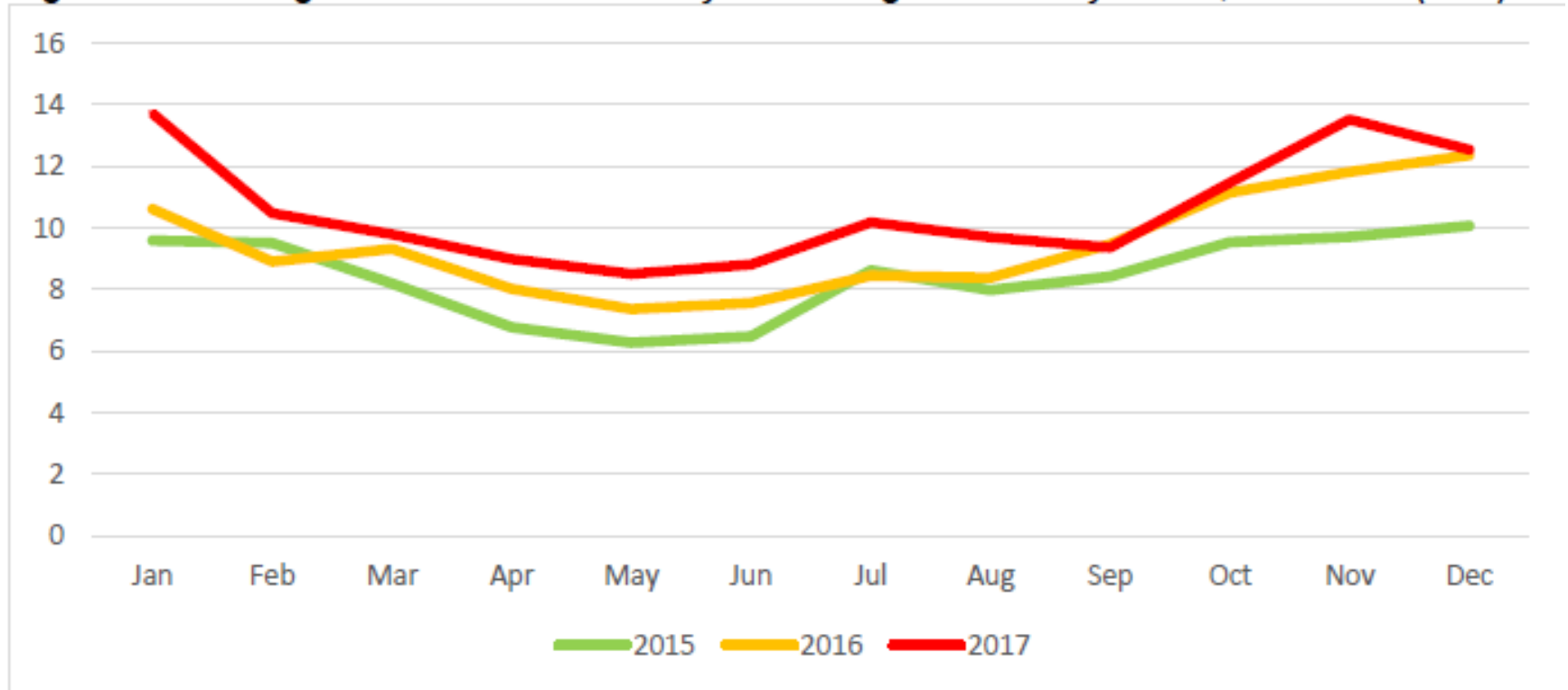
Figure 1: Natural gas demand in Europe in 2015, 2016, and 2017 (bcm)



Source: OIES 2018

# Additional demand in the power sector?

Figure 8: Natural gas demand for electricity and heat generation by month, 2015-2017 (bcm)

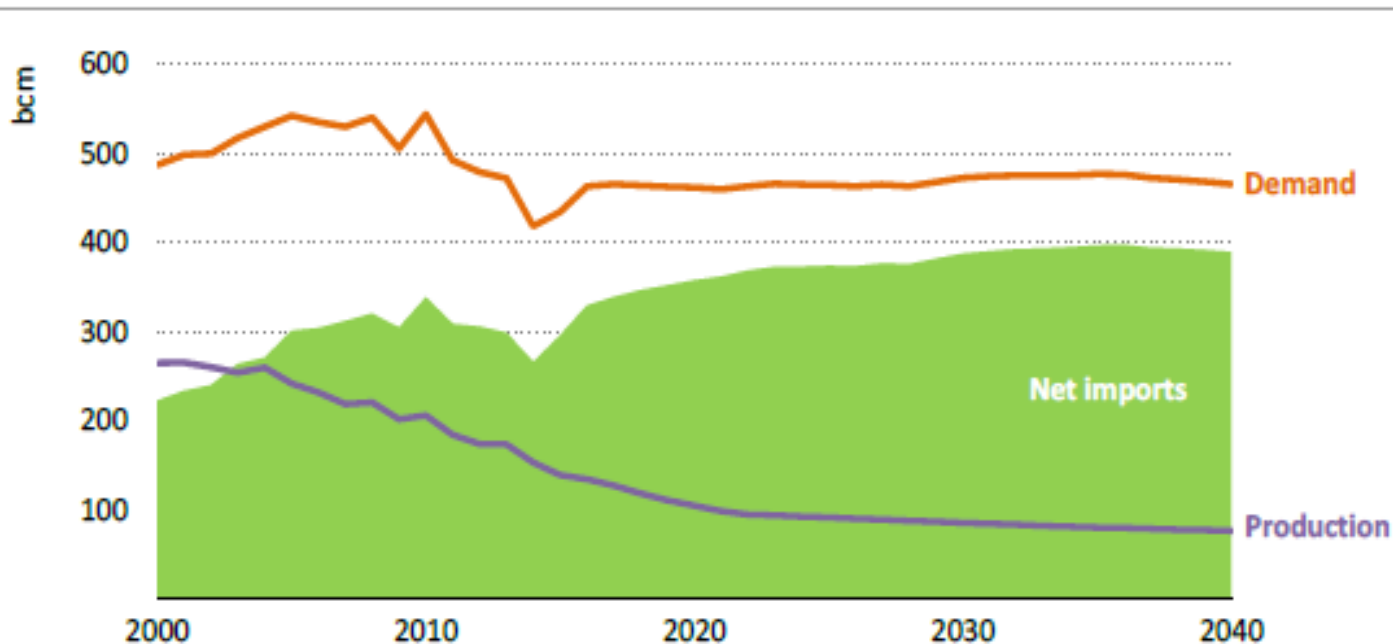


Source: JODI, data as of 2 April 2018

Source: OIES 2018

## IEA: European import demand at ~390 bcm/a in 2040

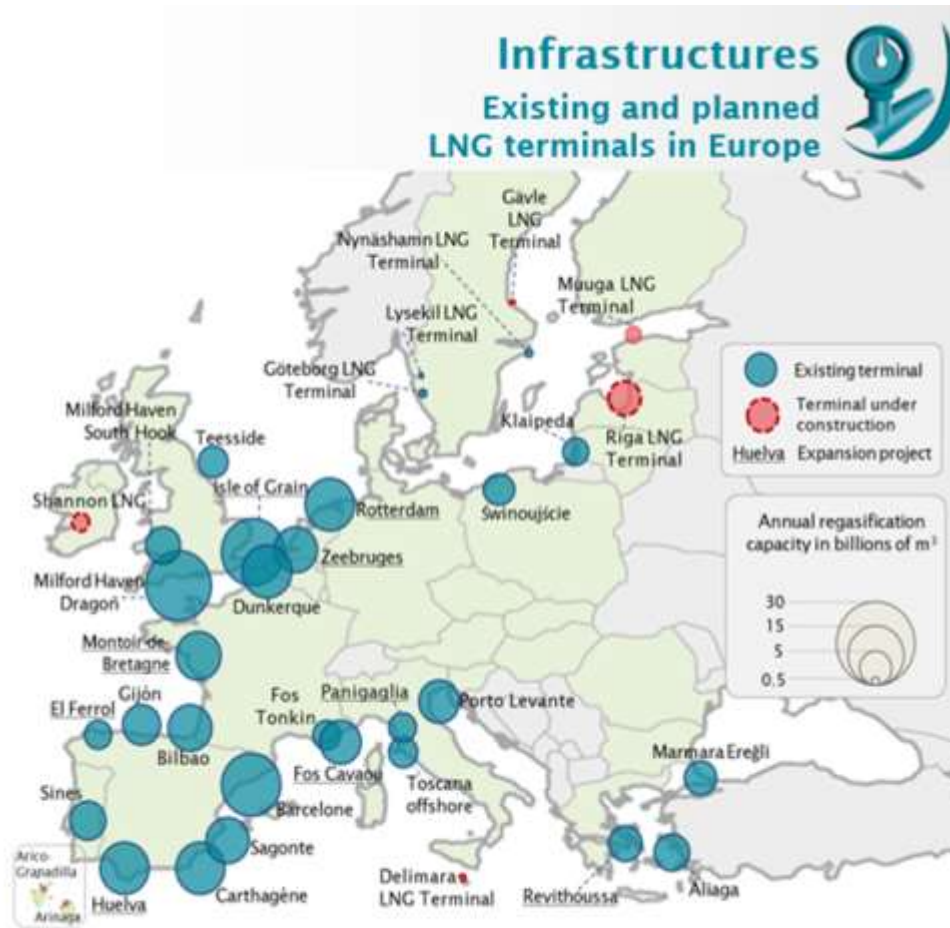
**Figure 8.9** ▷ Natural gas balance of the European Union in the New Policies Scenario



*Even with a flat demand outlook, the European Union's gas imports increase to 2040 as domestic output continues to decline*

Source: IEA WEO 2017

# Security of supply turned global ('LNG revolution): 210 bcm/a of LNG regas terminals (~75% idle)

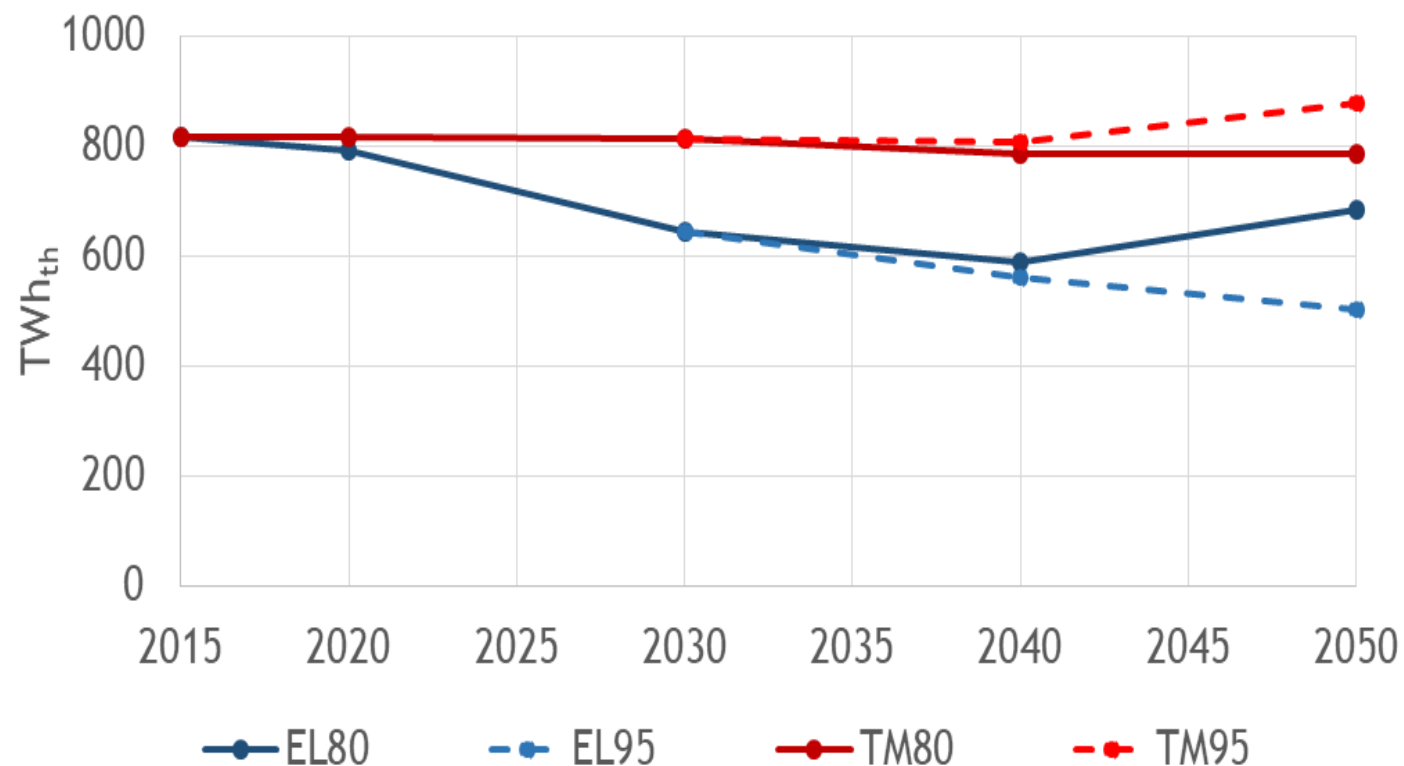


Source : GIIGNL (2016), GLE (2015)

Source: GIE LNG Map 2018

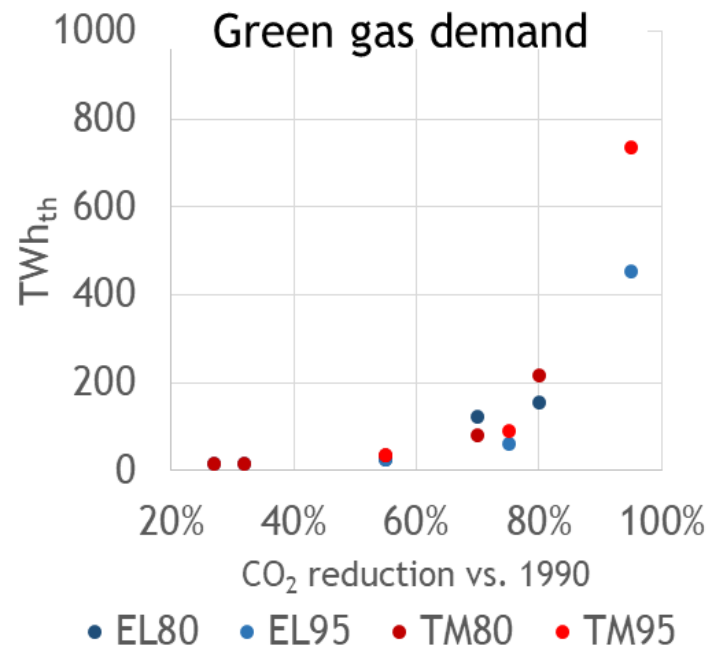
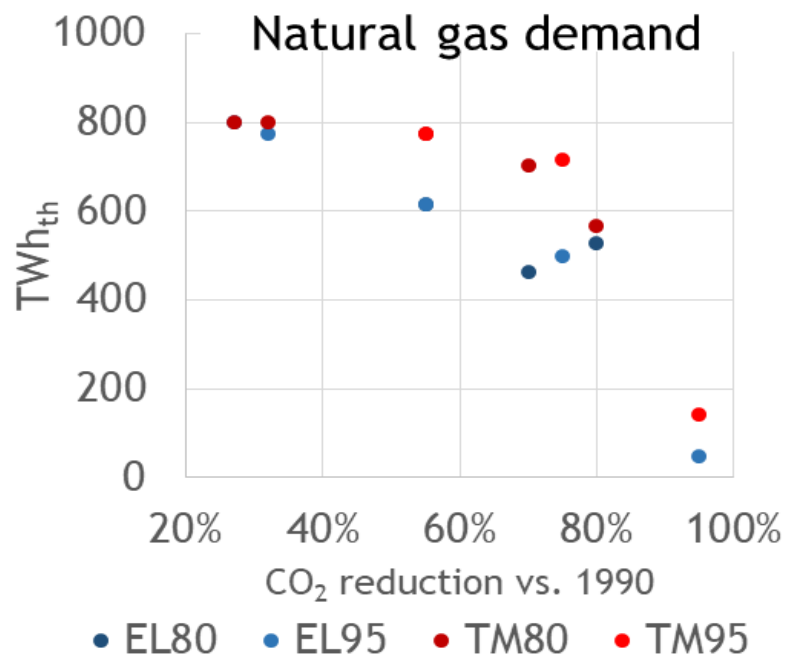
## Dena/ewi: all-electric ('EL') or technical mix ('TM')

### Gas needed in either scenario



Source: Hecking/Peters based on ewi ER&S (2018a)

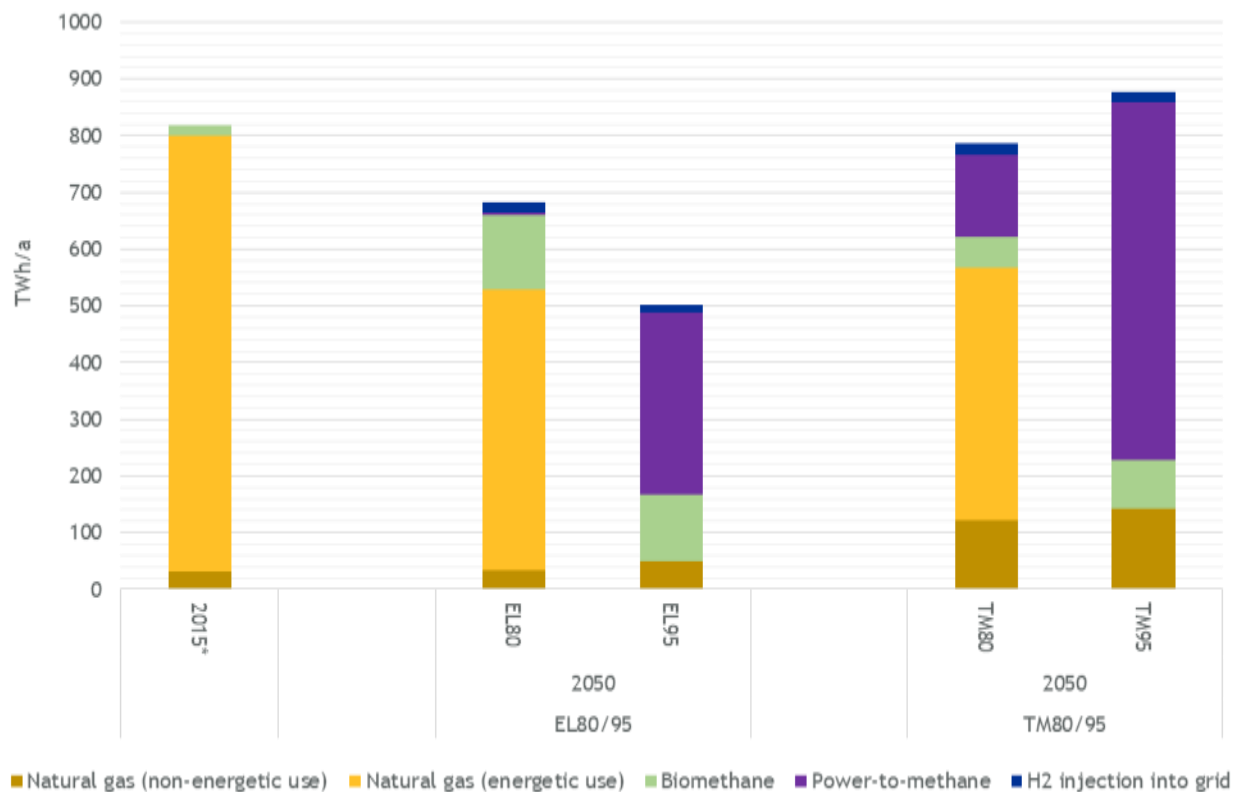
## Dena/ewi: Gas turns 'green' with rising decarbonization beyond CO<sub>2</sub> reductions of ~70% (continued use of infrastructure)



Source: Hecking/Peters based on ewi ER&S (2018a)

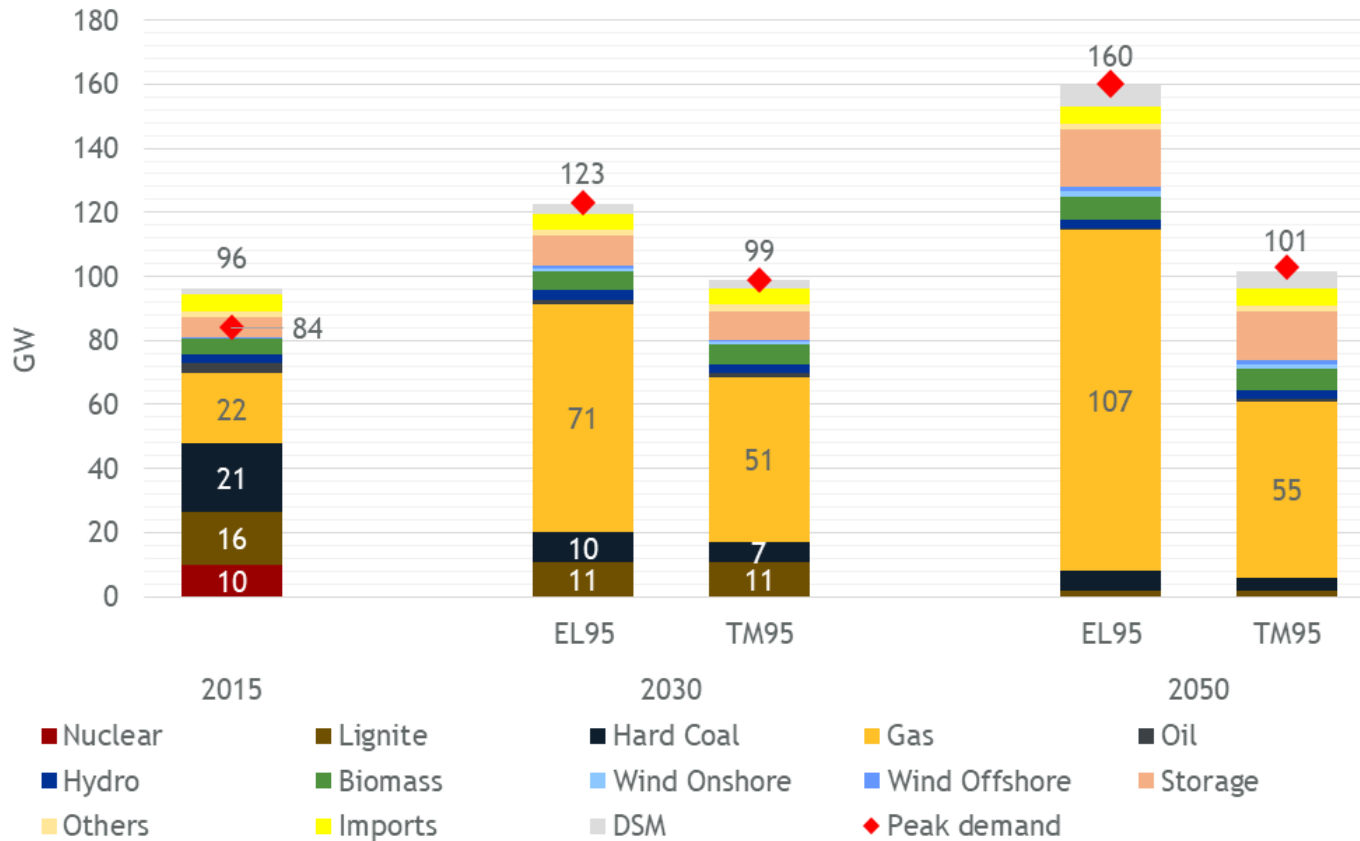


**Dena/ewi ('TM80'): 130 TWh biomethane, 20 TWh hydrogen blending, 150 TWh power-to-methane**  
**'TM95': 630 TWh power-to-methane**



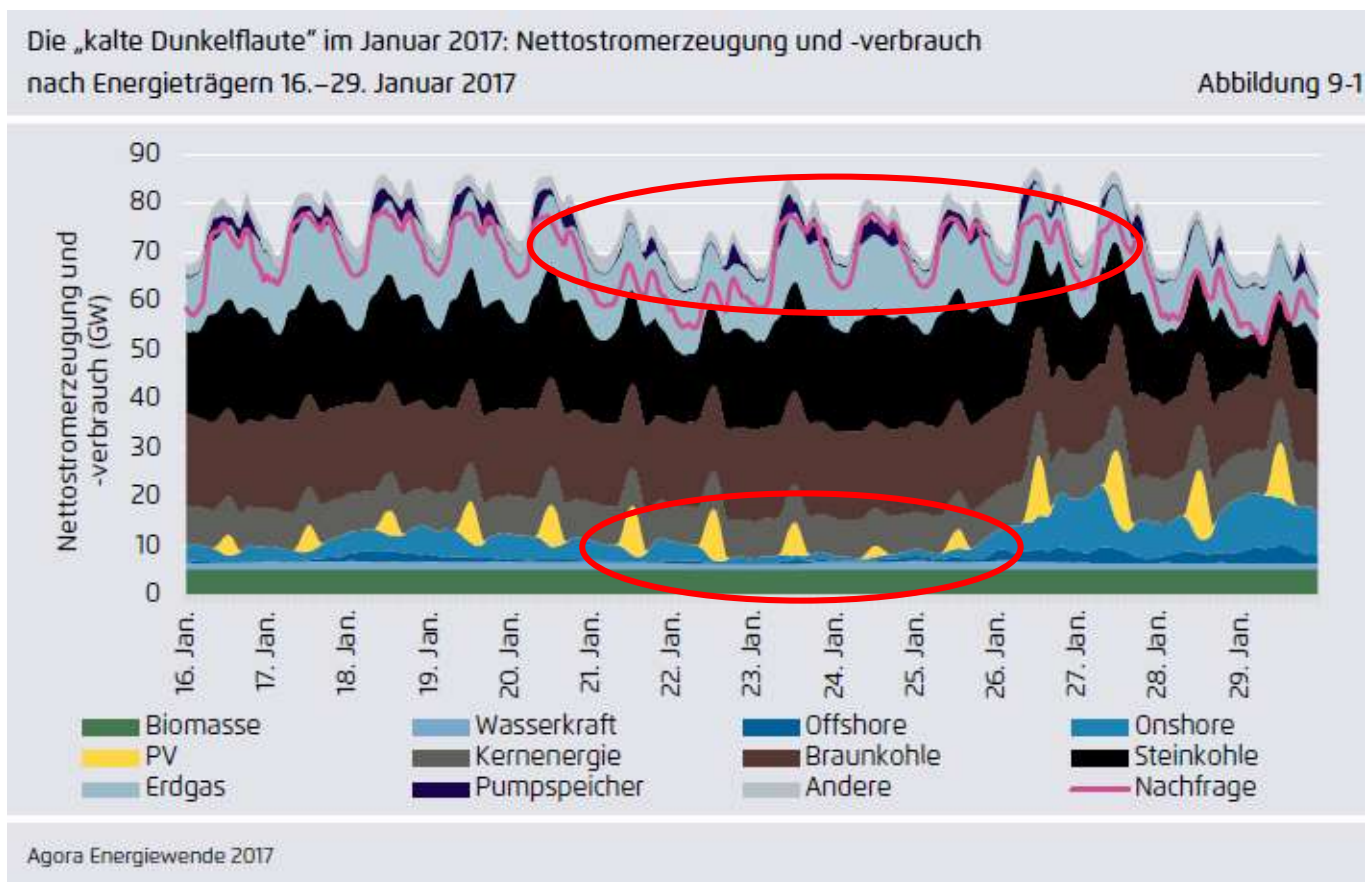
Source: Hecking/Peters based on ewi ER&S (2018a)

# Dena/ewi: Peak electricity demand requires more gas-fired capacity



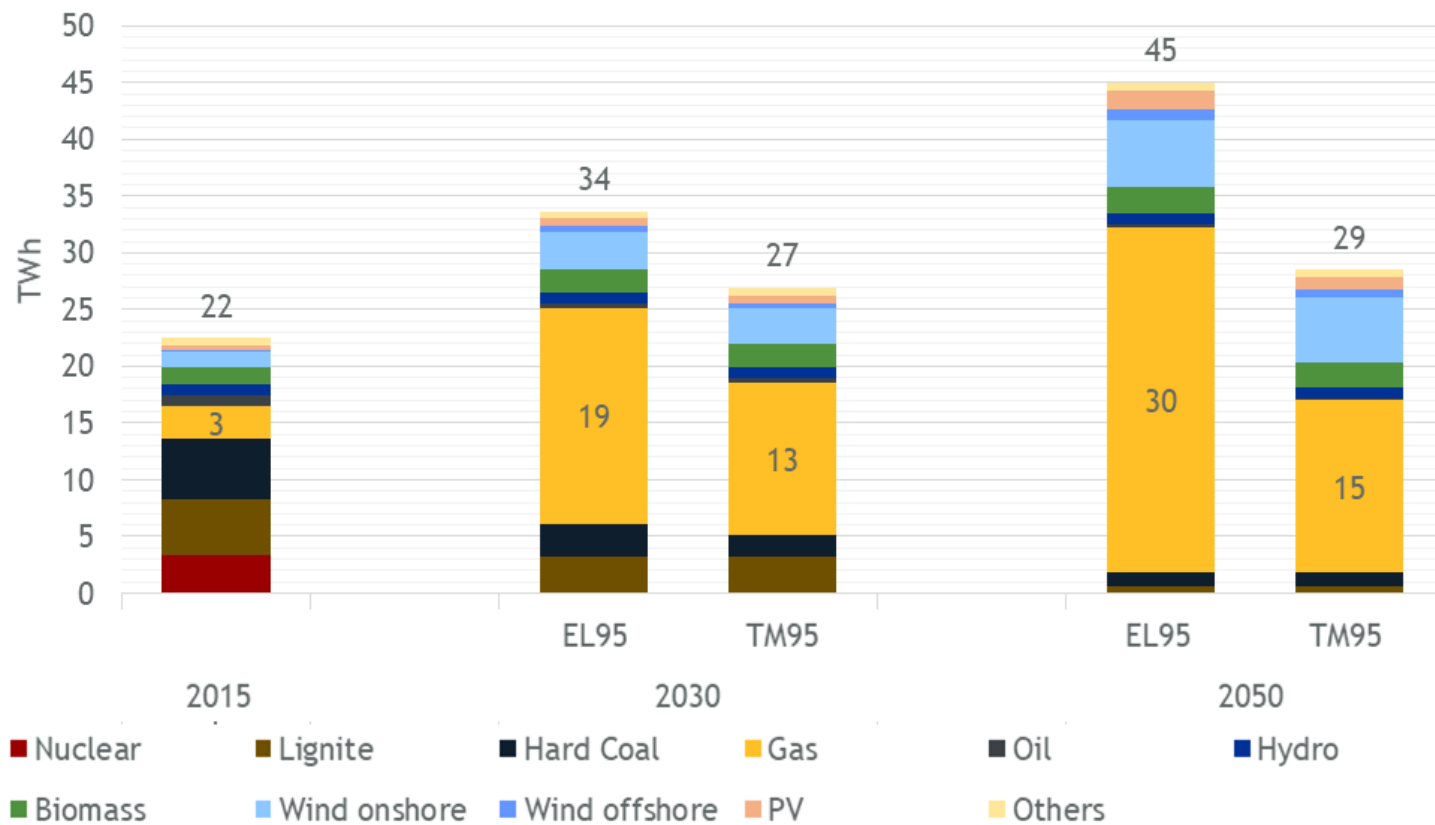
Source: Hecking/Peters based on ewi ER&S (2018a)

## 'Kalte Dunkelflaute': cold spell coinciding with unavailability of wind and sun – gas saves the day



Source: Agora Energiewende 2018

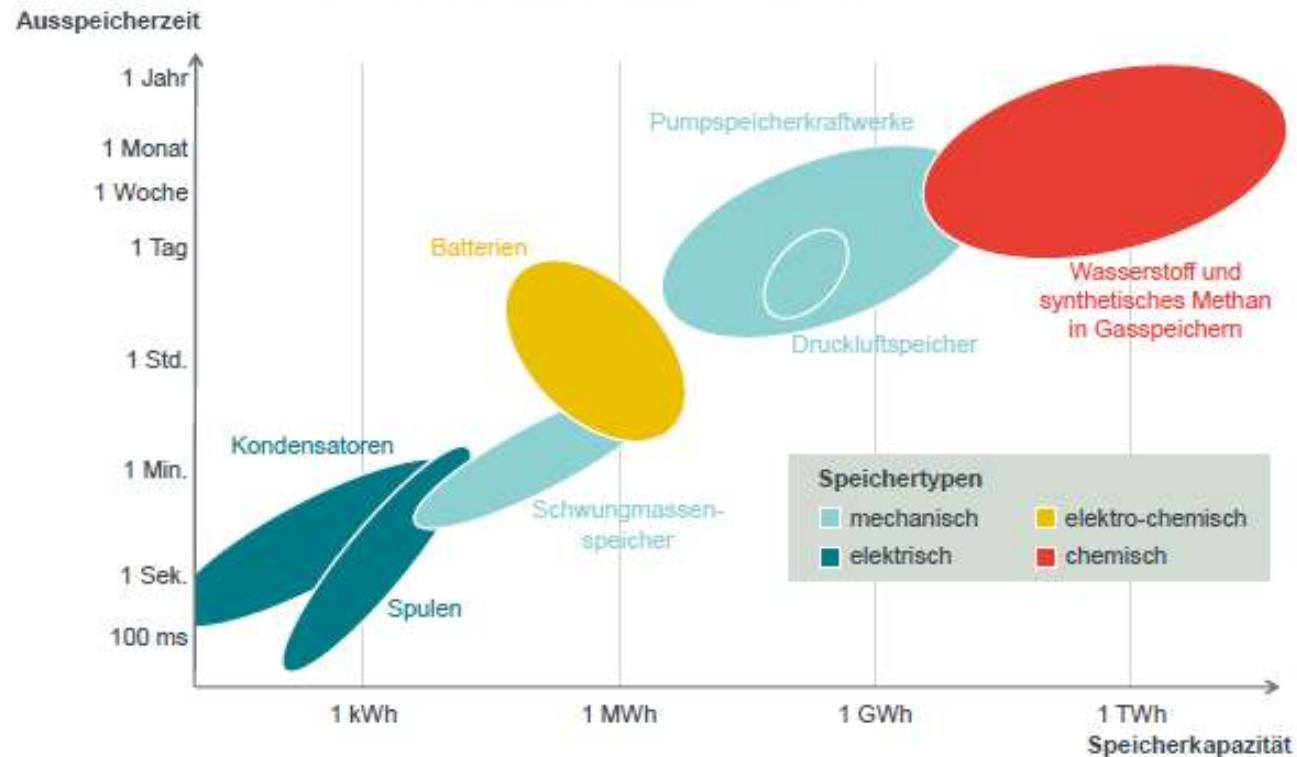
# 'Kalte Dunkelflaute': contributions to cover supply gap



Source: Hecking/Peters based on ewi ER&S (2018a)

# ‘Power to methane’: storing RES in large quantities and over long periods of time in the gas infrastructure

Abbildung 15 Speichertechnologien im Vergleich



Quelle: Frontier Economics basierend auf Sterner et. al (2014) S. 19 und eigenen Analysen

Source: Frontier Economics 2017