

# Energy Community Sustainability Forum

## Plenary 1: Accelerating the clean energy transition

Matthias Buck

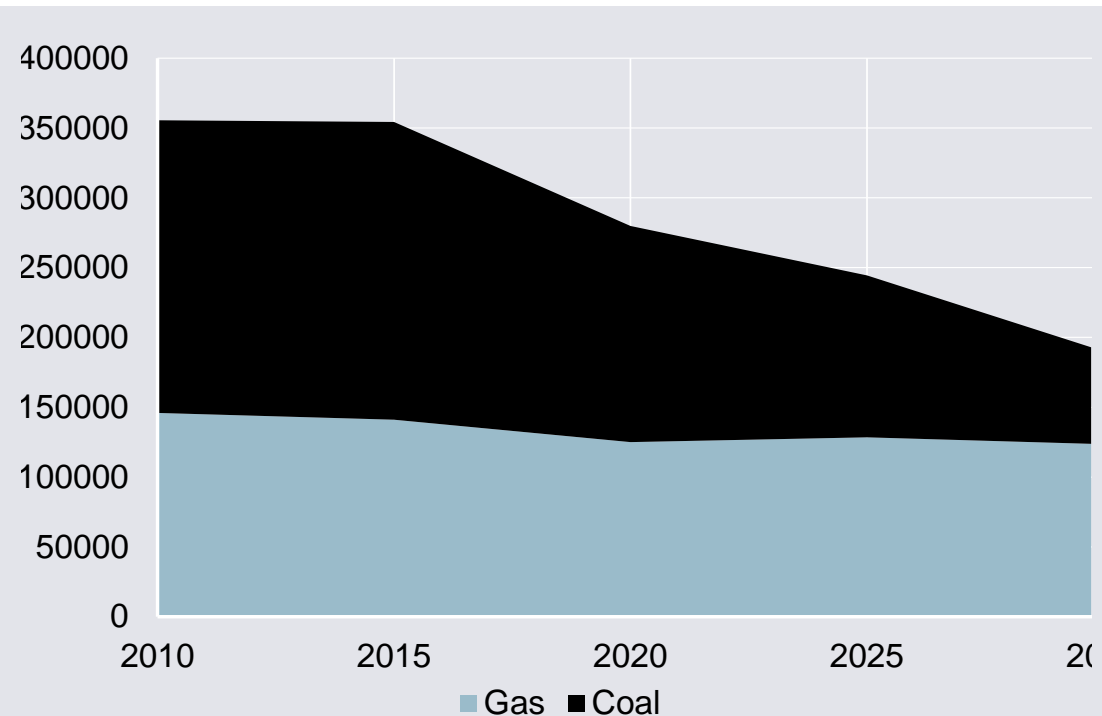
VIENNA, 22 JUNE 2018



# The EU climate & energy targets imply halving of coal-fired capacity by 2030

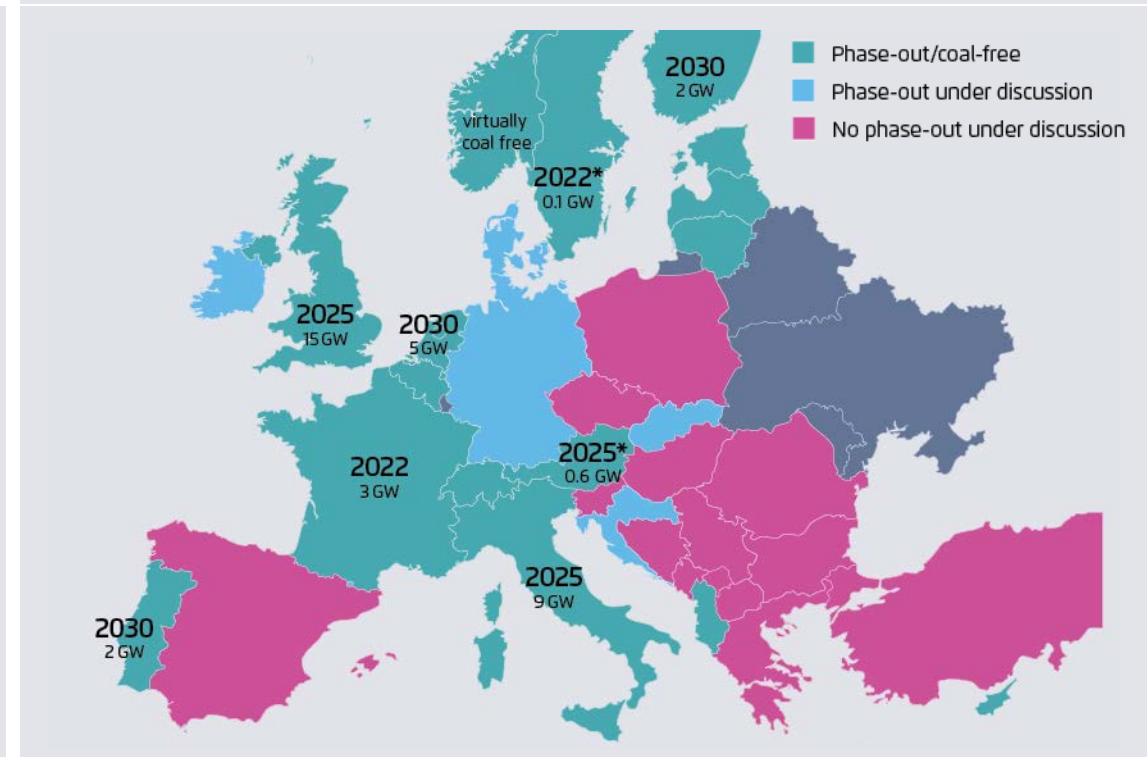
## Western Europe is phasing-out coal; East & South-East Europe not (yet).

Actual and projected coal use in EU power generation



EU Commission (2011): Impact Assessment on the 2050 Energy Roadmap

Coal phase-out years and operational capacity

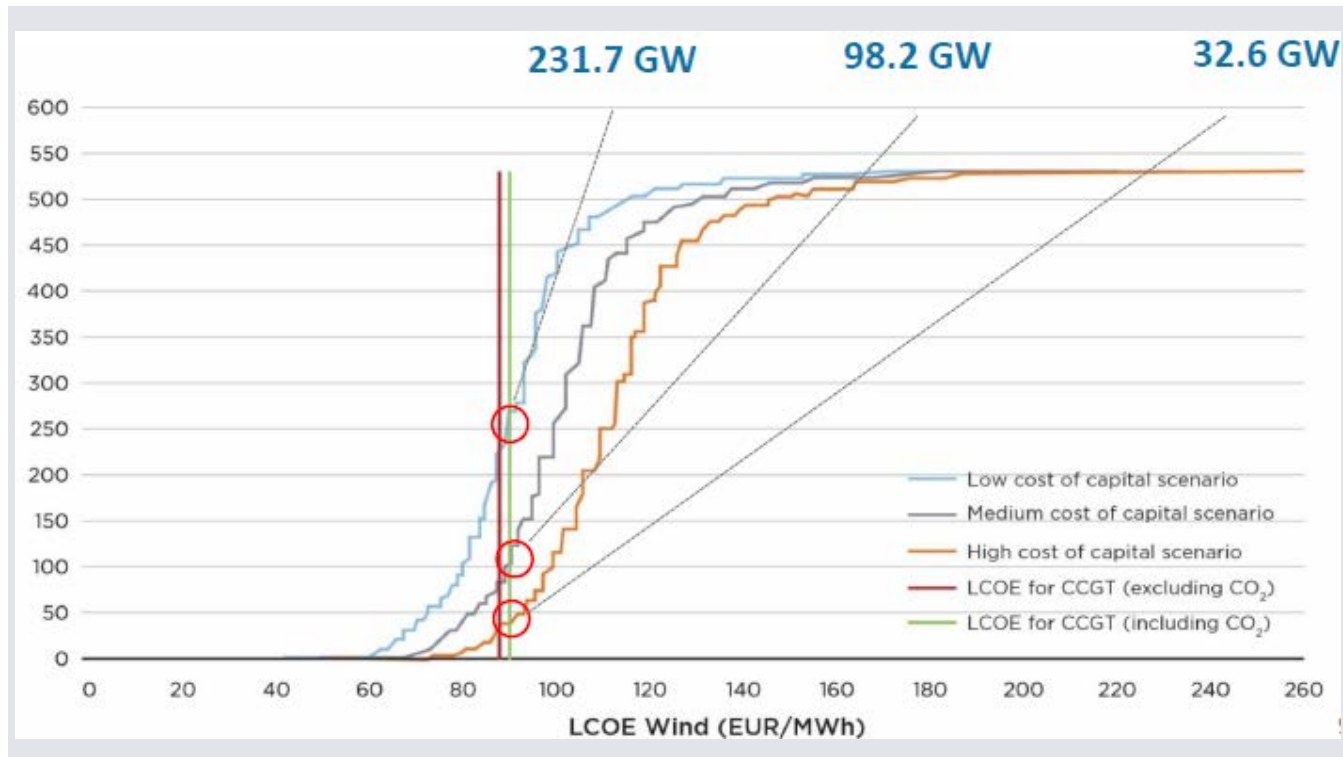


Beyond Coal campaign 2018

# The new EU renewable energy target implies 55% share of renewable electricity by 2030

## South-East Europe has huge cost-competitive potential

Wind potential in SEE in 2016



IRENA (2018)



- PV and wind characterized by a high share of fixed costs and very low (often close to zero) variable operating costs
- Conditions for financing of the initial investment are major determinant of cost of generated electricity
- Financing conditions reflect ex ante risk perception. Reducing ex ante risk is key to reducing investment cost
- Targets, stable regulatory frameworks, technology-specific pathways and innovative financing significantly reduce risk and thereby costs
- RES Directive, NECPs and EU Budget key enablers for low cost RES deployment

# National Energy & Climate Plans, new EU laws on Renewables and Efficiency, and the new EU Budget for 2021-2028 are key enablers to advance the clean energy transition at low cost

- An energy transition based on efficiency, renewables and reduced use of coal is economically sound, enhances energy security and delivers clean air, employment and climate change benefits
- Countries in South-East Europe have relatively high inter-connection levels. Cooperation will reduce the flexibility challenge from higher shares of renewable power
- Robust and stable national energy and climate plans will:
  - identify economic, energy security and climate protection opportunities from renewables and enhanced efficiency
  - Facilitate planning ahead in regions affected by structural change and identifying well in advance need for financial support (including from the new EU budget)
  - reduce investment costs for the clean energy transition.
- Lessons can be learned from “first-mover” countries (positive and things to be avoided)

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# Thank you for your attention!

Questions or Comments? Feel free to contact me:  
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Agora Energiewende is a joint initiative of the Mercator  
Foundation and the European Climate Foundation.



# Back-Up Slides



## Agora Energiewende – Who we are

### The team



Agora

Independent think tank with more than 30 energy policy experts

Independent and non-partisan

Project duration 2012-2021

Financed by the Mercator Foundation and the European Climate Foundation

Mission: How do we make the energy transition in Germany and worldwide a success story?

Scientific assessments

Dialogue

Putting forward proposals

# Our SEE energy transition projects





# Western Balkans Energy Transition Dialogue (WeBET Dialogue)

Donor: Austrian Federal Ministry of Sustainability and Tourism

Implementing organisation: Agora Energiewende, Germany

Partners:

NERDA, Bosnia and Herzegovina; INDEP, Kosovo;

MACEF, Macedonia, Green Alternative, Montenegro;

ASOR and RES Foundation, Serbia



RES Foundation  
Partnerships  
for Resilience



## South East Europe Energy Transition Dialogue

Donor: German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMUB); The European Climate Initiative (EUKI)

Implementing organisation: Agora Energiewende, Germany



Partners:

Center for the Study of Democracy, Bulgaria;

University of Zagreb, Faculty of Mechanical Engineering and Naval Architecture, Croatia;

The National Observatory of Athens (NOA), IERSD, Greece; Energy Policy Group, Romania



Supported by:

 Federal Ministry for the Environment, Nature Conservation and Nuclear Safety

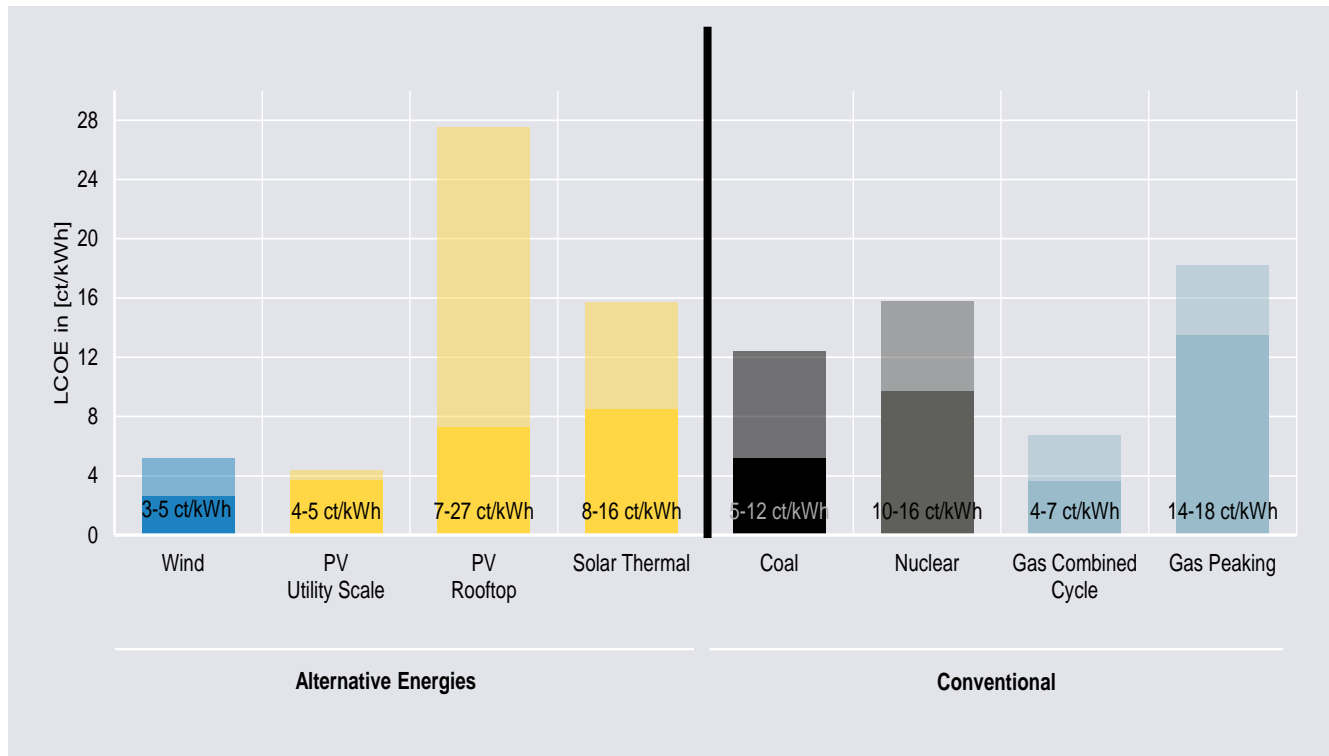
based on a decision of the German Bundestag

## Supporting the SEE energy transition through stakeholder dialogue & fact-based analysis

- Decisions for modernizing or replacing a significant share of old coal fleet in SEE will be taken within the next decade
- National work streams give input to long term planning processes to advance RES, focusing on integrated National Energy & Climate plans
  - Showing how long term energy system planning can yield clean, secure and cost-efficient power systems and avoiding costly barriers to RES deployment
- Regional work streams to highlight benefits of regional and EU policy framework that targets cost of capital for RES investments and benefits from regional integration to minimize the flexibility challenge and maximize security of supply
- Strengthening think-tank network
- SEE Energy Transition Dialogue
  - Covers four EU Member States (BG, CRO, GR, RO), with four SEE think-tank partners
- Western Balkans Energy Transition Dialogue
  - Covers five Western Balkan countries (BiH, KOS, MAC, MON, SER) with six WB-6 think-tank partners

# Today, wind and solar are already cost competitive to all other newly built power plants

Range\* of Unsubsidized Levelized Cost of Electricity (LCOE) 2017



Agora Energiewende based on Lazard (2017)

## LCOE

Compares the cost for generating one kWh of electricity based on the cost, utilization and life-time of different technologies

## Range\*

Illustrates the range of cost of capital and utilization for one specific technology

## Cost of Capital

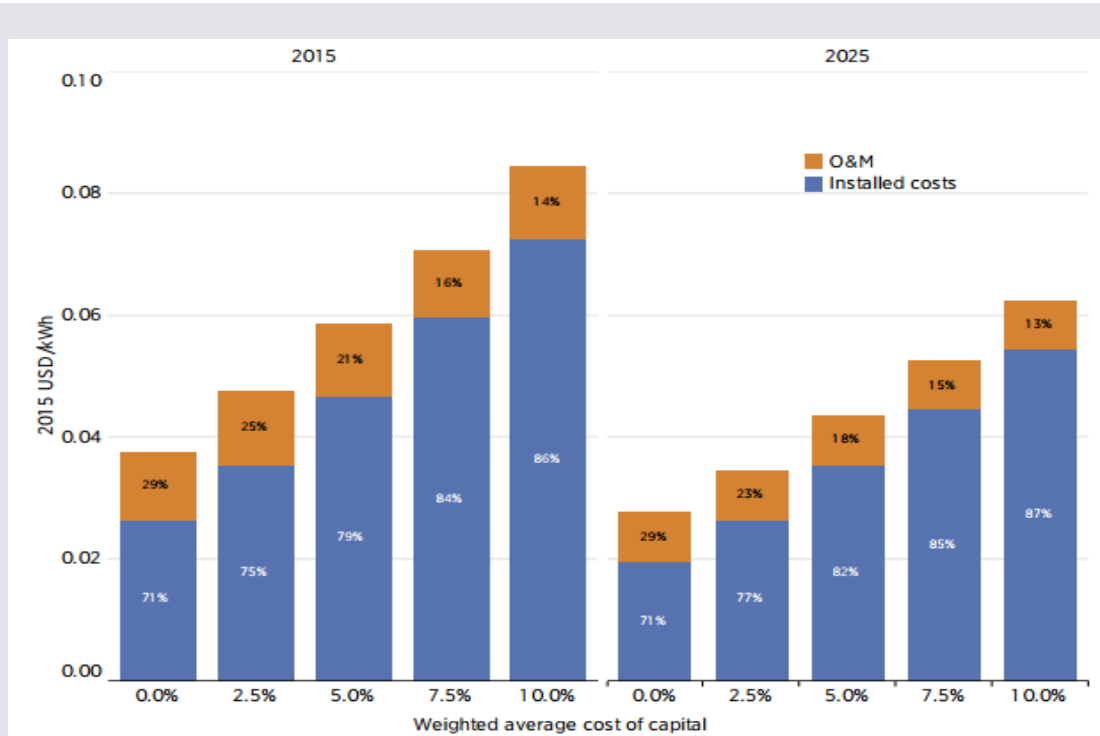
Reflects global, illustrative costs of capital, which may be significantly higher than OECD country costs of capital

## Global Cost of Capital Assumptions

- 60% debt at 8% interest rate
- 40% equity at 12% interest rate

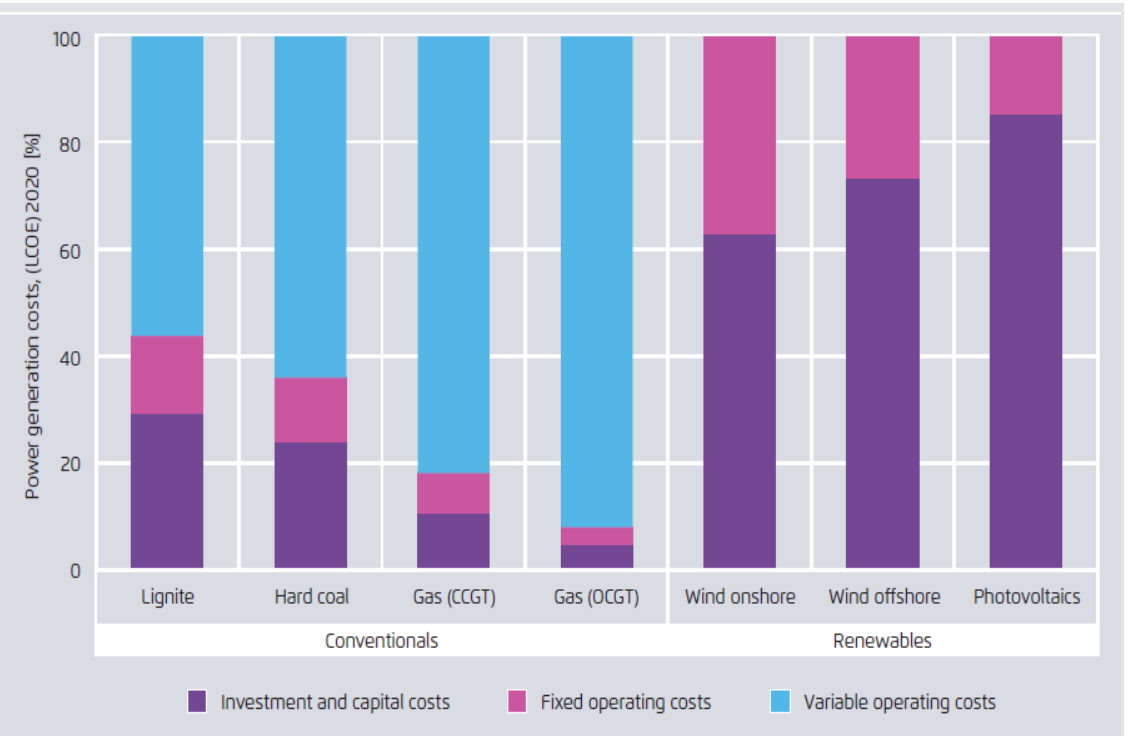
# Wind power and solar PV have high upfront investment cost and very low operating cost. Financing conditions for upfront investment are critical for economic viability of RES projects

Sensitivity of LCOE of wind to the cost of capital, 2015 and 2025



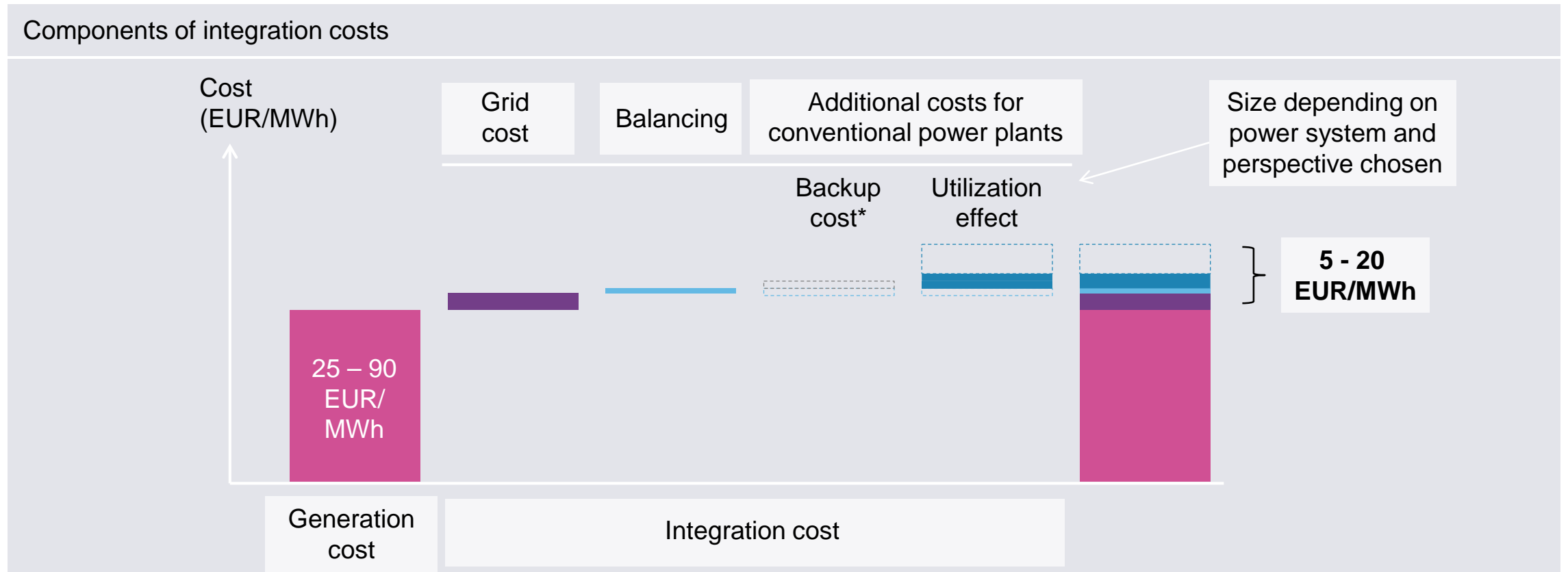
Source: IRENA 2016

High fixed costs for renewables



Source: Agora, based on IEA/NEA (2015)

# The integration cost of wind and solar (5 to 20 EUR/MWh) do not change the picture



More information and studies available at our website  
[www.agora-energiewende.org](http://www.agora-energiewende.org)

Understanding the  
*Energiewende*

FAQ on the ongoing transition of the German power system

**BACKGROUND**

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Refining Short-Term Electricity Markets to Enhance Flexibility

Stocktaking as well as Options for Reform in the Pentilateral Energy Forum Region

**STUDY**

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MicroEconomics 

Eleven Principles for a Consensus on Coal

Concept for a stepwise decarbonisation of the German power sector (Short Version)

**IMPULSE**

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