

The clean energy potential of coal regions in transition

Coal regions in transition virtual week

2 July 2020

Platform for coal regions in transition



A few rules before we begin

Participants are muted at all times

Questions are asked in the Q&A section

For social media: #CoalRegionsEU

INTRODUCTION

Investing in the Recovery and Transition of Europe's Coal Regions

Katherine Poseidon

Policy Analyst, Bloomberg New Energy Finance

Investing in the Recovery and Transition of Europe's Coal Regions

Coal Regions in Transition Platform

Katherine Poseidon

2 July 2020

BNEF offices around the world



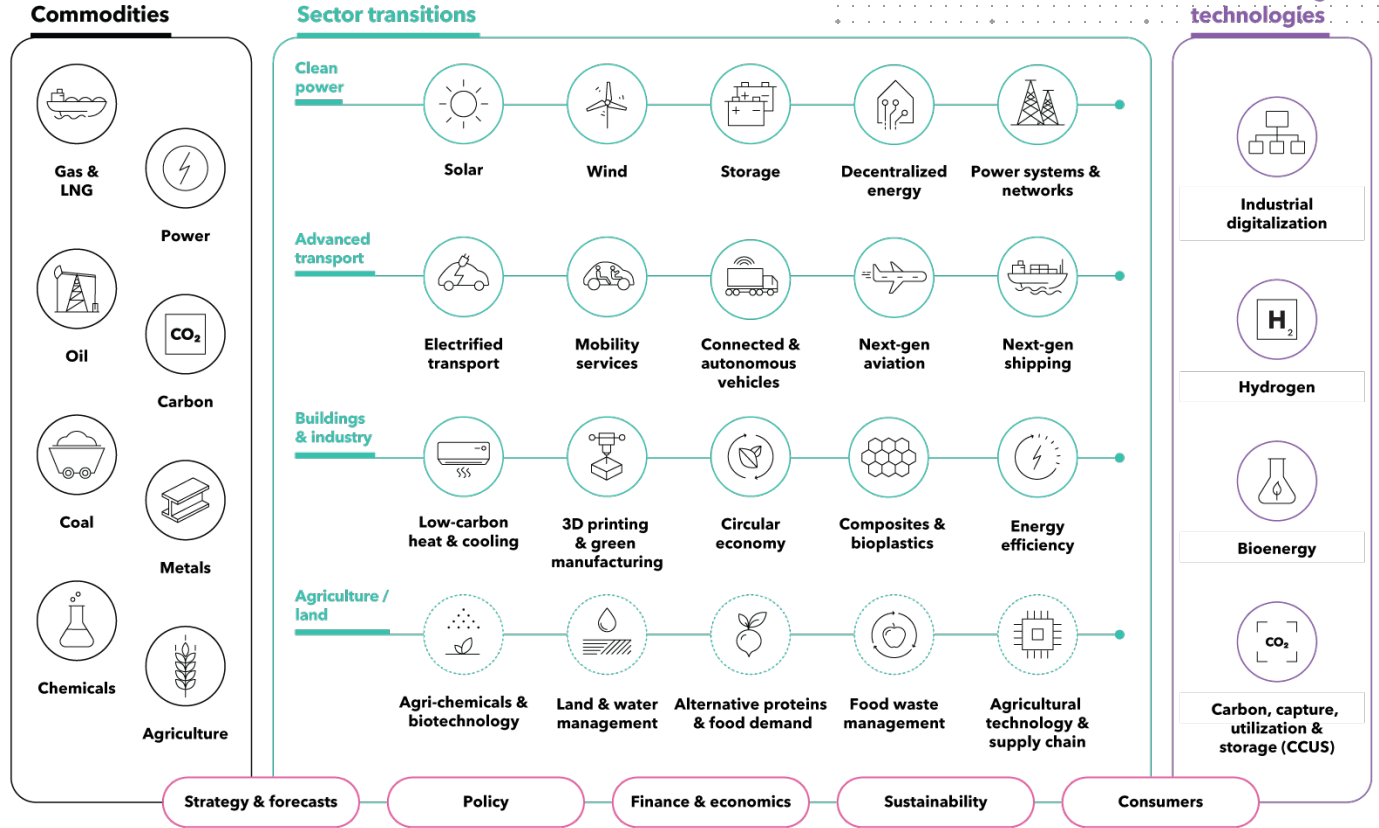
250

BNEF professionals in
17 locations*

* Part of the Bloomberg LP network of
19,000 employees in 176 locations.

BNEF coverage

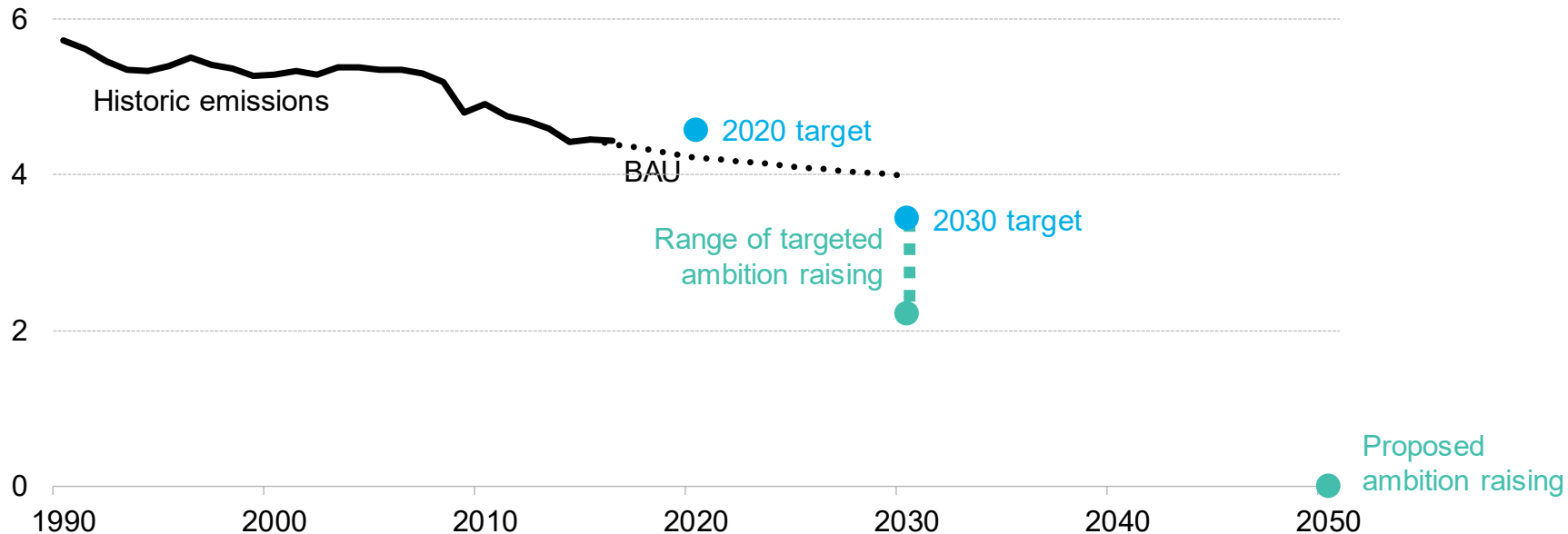
Strategies for a cleaner, more competitive future



EU policy targets will bring in a step change in ambition

EU greenhouse gas emissions and climate targets

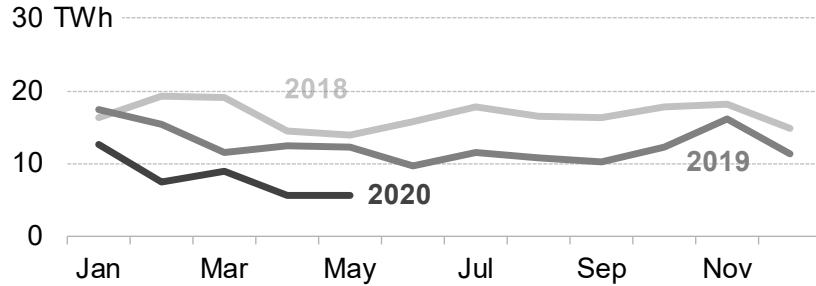
Gt CO₂e



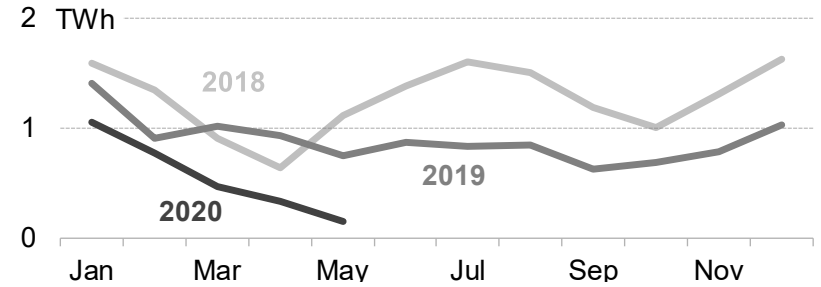
Source: European Environment Agency, European Commission BloombergNEF

Coal generation is feeling pressure from all sides, accelerated by Covid-19

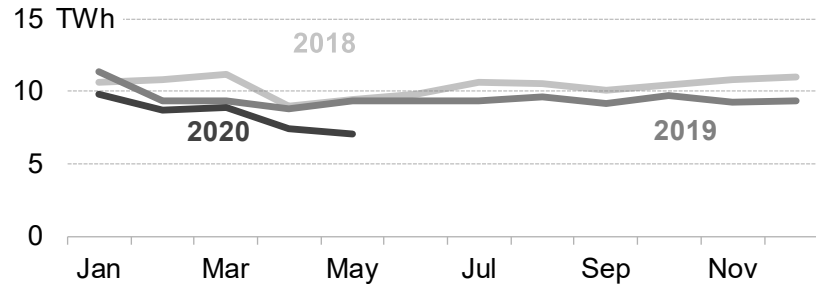
Germany



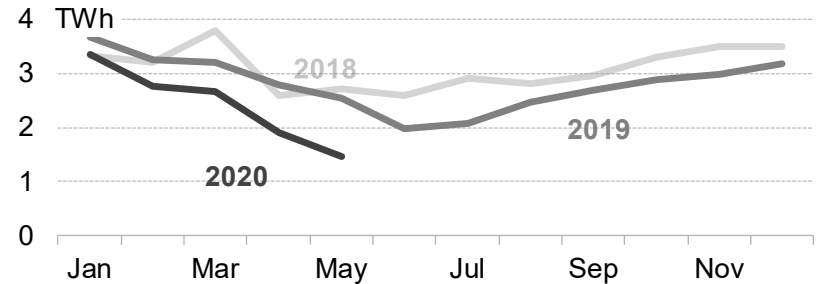
Greece



Poland



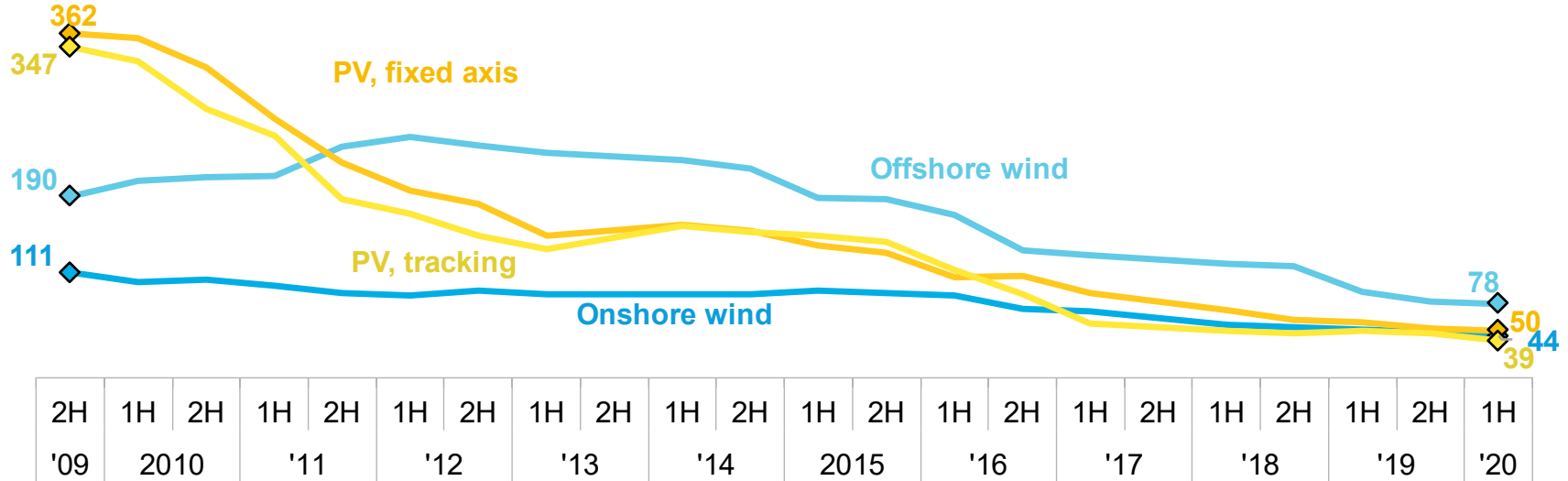
Czechia



Renewables offer the cheapest source of new baseload electricity

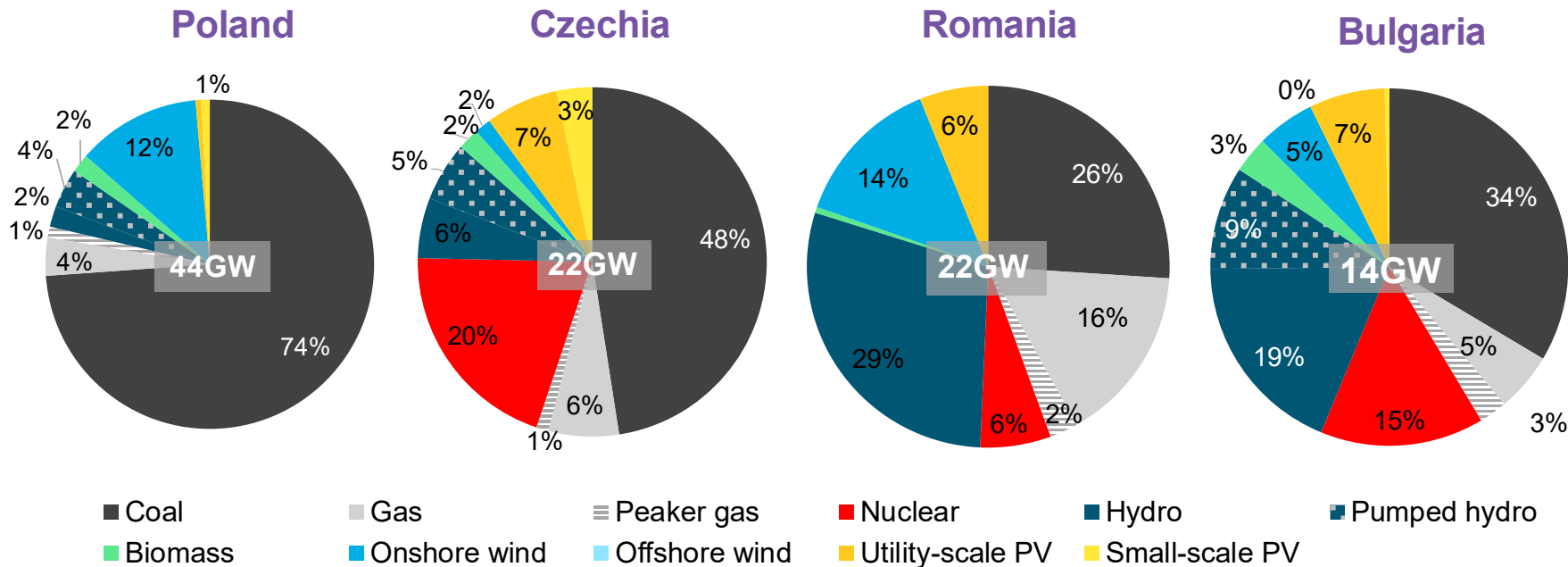
Global benchmark LCOEs for PV and wind

LCOE (\$/MWh, 2019 real)



Source: BloombergNEF

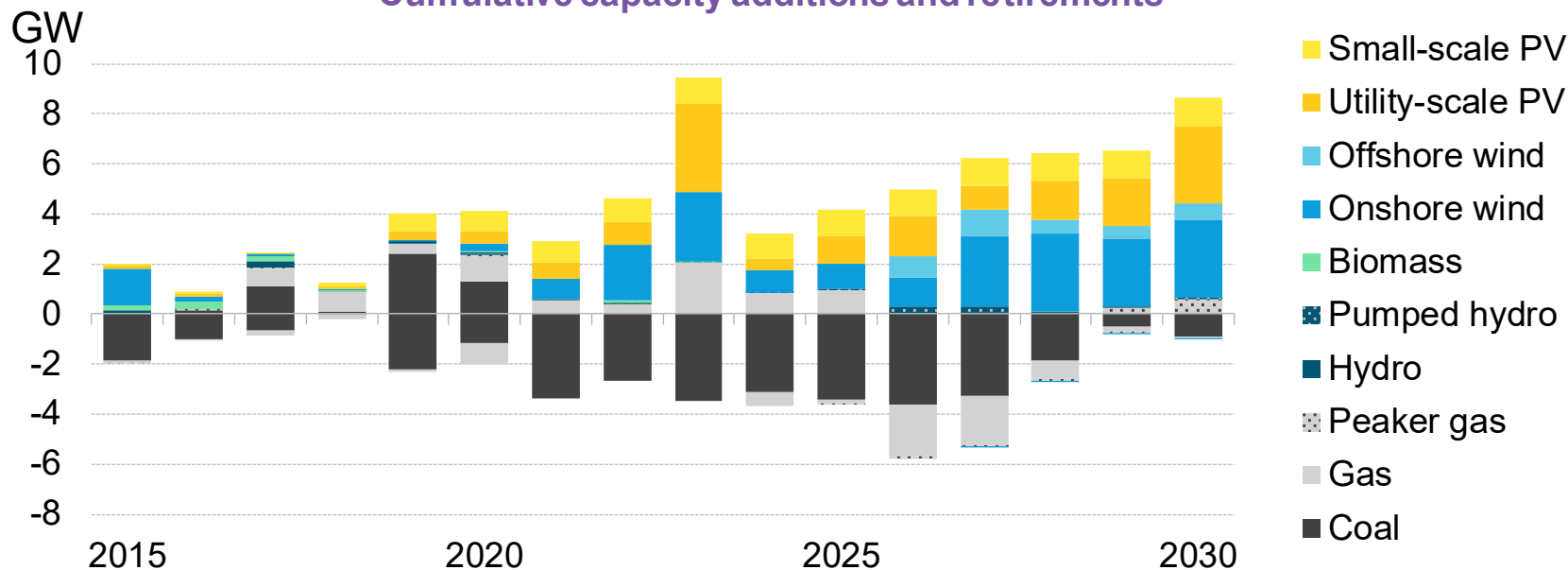
Methodology and scope



Source: BloombergNEF

Some 53GW of new renewables added in the next decade

Cumulative capacity additions and retirements

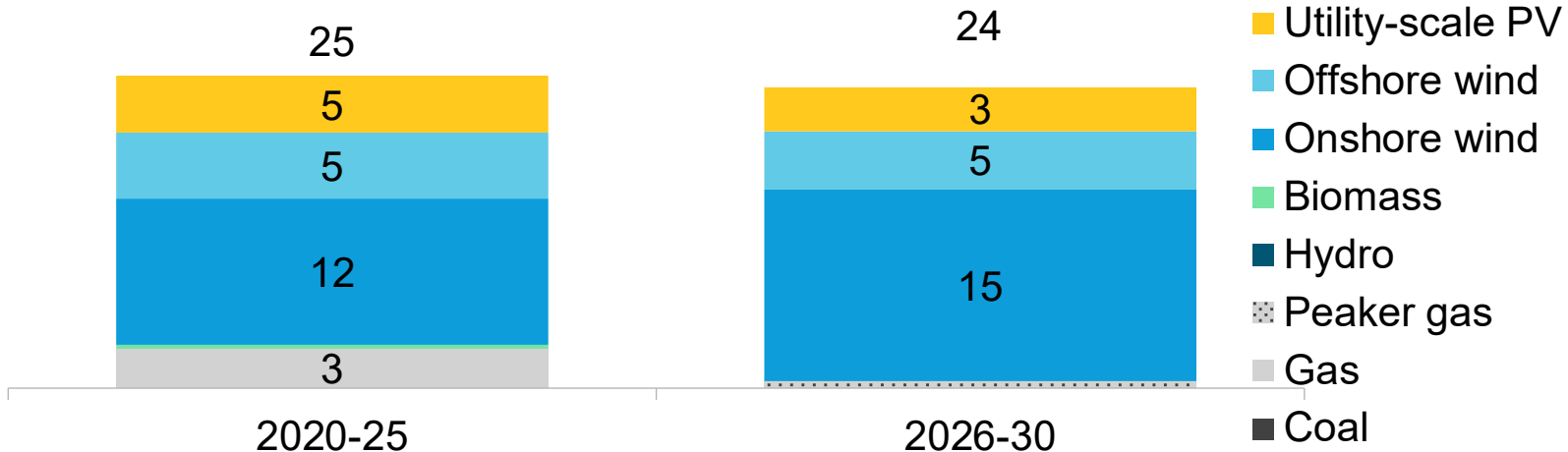


Source: BloombergNEF. Note: additions and retirements represent Poland, Czechia, Romania and Bulgaria.

45 billion euros in clean energy investment is unlocked

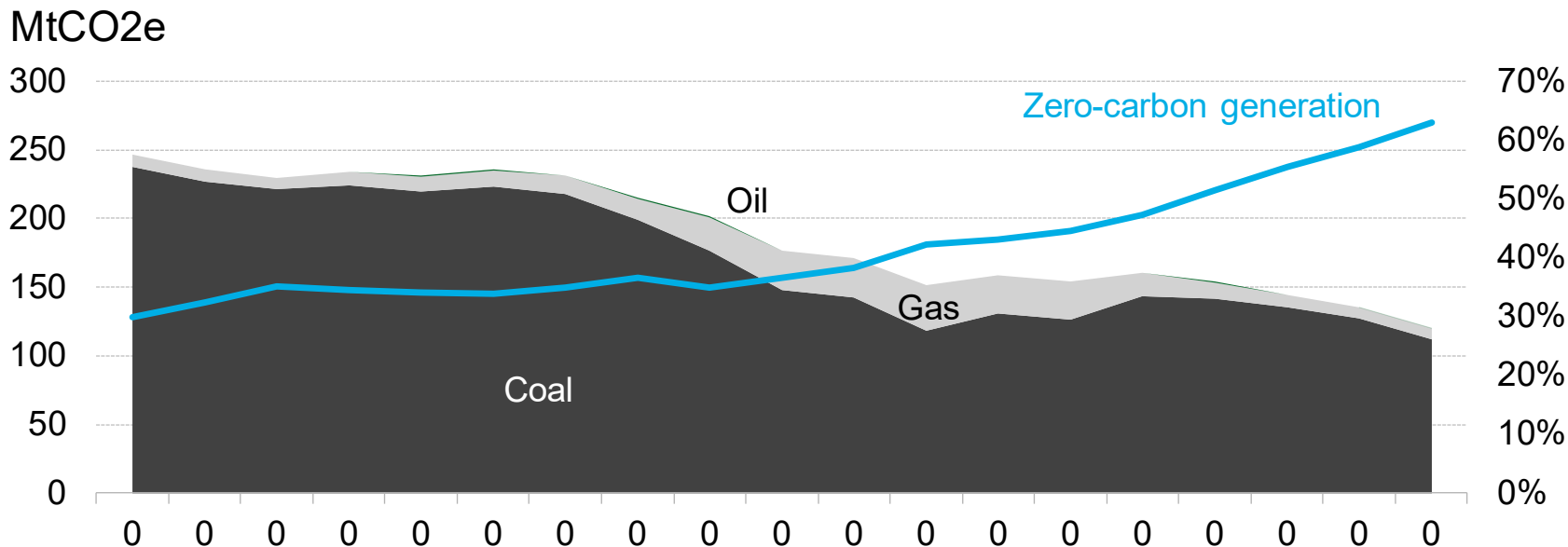
Investment in new capacity

euros bn (real 2018)



Source: BloombergNEF. Note: investments are measured at the time of investment, accounting for construction lead times. Small-scale PV is not included. Data refers to Poland, Czechia, Romania and Bulgaria in aggregate.

Emissions fall 48% from 2018 levels by 2030, in the least-cost scenario



Source: BloombergNEF. Note: Data refers to Poland, Czechia, Romania and Bulgaria in aggregate.

Join us for the launch of the full study!

Bloomberg Philanthropies and BNEF Present:

Investing in the Clean Recovery and Transition of Europe's Coal Regions

July 6, 2020 at 3.15PM CET

With remarks from:

Michael R. Bloomberg, Founder of Bloomberg LP and Bloomberg Philanthropies

Frans Timmermans, Executive Vice-President of the European Commission for the European Green Deal

Michal Kurtyka, Minister of Climate of Poland and President of COP24

Followed by a presentation and discussion on the least-cost power sector transition pathways of Poland, Czechia, Romania and Bulgaria.

Register by scanning this code:



Copyright and disclaimer

Copyright

© Bloomberg Finance L.P. 2019. This publication is the copyright of Bloomberg Finance L.P. in connection with BloombergNEF. No portion of this document may be photocopied, reproduced, scanned into an electronic system or transmitted, forwarded or distributed in any way without prior consent of BloombergNEF.

Disclaimer

The BloombergNEF ("BNEF"), service/information is derived from selected public sources. Bloomberg Finance L.P. and its affiliates, in providing the service/information, believe that the information it uses comes from reliable sources, but do not guarantee the accuracy or completeness of this information, which is subject to change without notice, and nothing in this document shall be construed as such a guarantee. The statements in this service/document reflect the current judgment of the authors of the relevant articles or features, and do not necessarily reflect the opinion of Bloomberg Finance L.P., Bloomberg L.P. or any of their affiliates ("Bloomberg"). Bloomberg disclaims any liability arising from use of this document, its contents and/or this service. Nothing herein shall constitute or be construed as an offering of financial instruments or as investment advice or recommendations by Bloomberg of an investment or other strategy (e.g., whether or not to "buy", "sell", or "hold" an investment). The information available through this service is not based on consideration of a subscriber's individual circumstances and should not be considered as information sufficient upon which to base an investment decision. You should determine on your own whether you agree with the content. This service should not be construed as tax or accounting advice or as a service designed to facilitate any subscriber's compliance with its tax, accounting or other legal obligations. Employees involved in this service may hold positions in the companies mentioned in the services/information.

The data included in these materials are for illustrative purposes only. The BLOOMBERG TERMINAL service and Bloomberg data products (the "Services") are owned and distributed by Bloomberg Finance L.P. ("BFLP") except (i) in Argentina, Australia and certain jurisdictions in the Pacific islands, Bermuda, China, India, Japan, Korea and New Zealand, where Bloomberg L.P. and its subsidiaries ("BLP") distribute these products, and (ii) in Singapore and the jurisdictions serviced by Bloomberg's Singapore office, where a subsidiary of BFLP distributes these products. BLP provides BFLP and its subsidiaries with global marketing and operational support and service. Certain features, functions, products and services are available only to sophisticated investors and only where permitted. BFLP, BLP and their affiliates do not guarantee the accuracy of prices or other information in the Services. Nothing in the Services shall constitute or be construed as an offering of financial instruments by BFLP, BLP or their affiliates, or as investment advice or recommendations by BFLP, BLP or their affiliates of an investment strategy or whether or not to "buy", "sell" or "hold" an investment. Information available via the Services should not be considered as information sufficient upon which to base an investment decision. The following are trademarks and service marks of BFLP, a Delaware limited partnership, or its subsidiaries: BLOOMBERG, BLOOMBERG ANYWHERE, BLOOMBERG MARKETS, BLOOMBERG NEWS, BLOOMBERG PROFESSIONAL, BLOOMBERG TERMINAL and BLOOMBERG.COM. Absence of any trademark or service mark from this list does not waive Bloomberg's intellectual property rights in that name, mark or logo. All rights reserved. © 2019 Bloomberg.

BloombergNEF (BNEF) is a leading provider of primary research on clean energy, advanced transport, digital industry, innovative materials, and commodities.

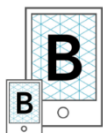
BNEF's global team leverages the world's most sophisticated data sets to create clear perspectives and in-depth forecasts that frame the financial, economic and policy implications of industry-transforming trends and technologies.

BNEF research and analysis is accessible via web and mobile platforms, as well as on the Bloomberg Terminal.

Coverage.

Clean energy
Advanced transport
Commodities
Digital industry

Get the app



On IOS + Android
about.bnef.com/mobile

BloombergNEF

Katherine Poseidon

Client enquiries:

Bloomberg Terminal: press <Help> key twice
Email: support.bnef@bloomberg.net

Learn more:

about.bnef.com | [@BloombergNEF](https://twitter.com/BloombergNEF)

Presentation

Study “RES potential in Coal Regions”, JRC

Zoe Kapetaki

Project Officer, Knowledge management, Fossil power generation in transition, JRC - Petten

Pablo Ruiz-Castello

Project Officer, Knowledge management, Energy scenarios Analyst, JRC - Petten



Clean energy technologies in coal regions: Opportunities for jobs and growth

Coal Regions in Transition (CRiT) Platform

7th Working Group

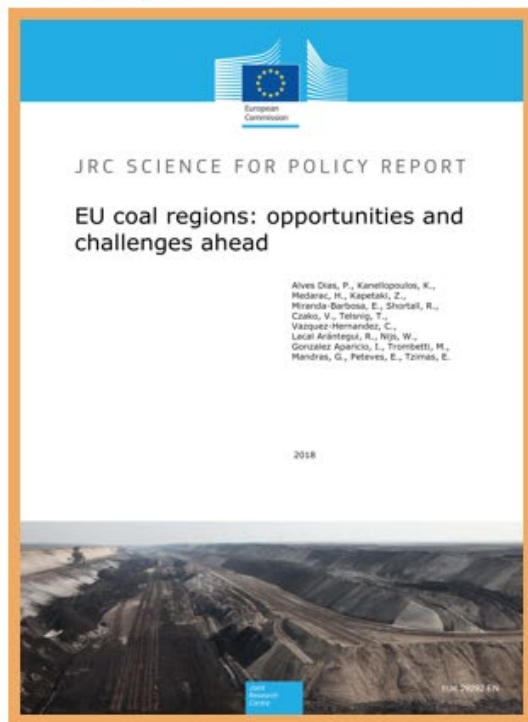
July 2020

Zoe Kapetaki, Pablo Ruiz
Joint Research Centre

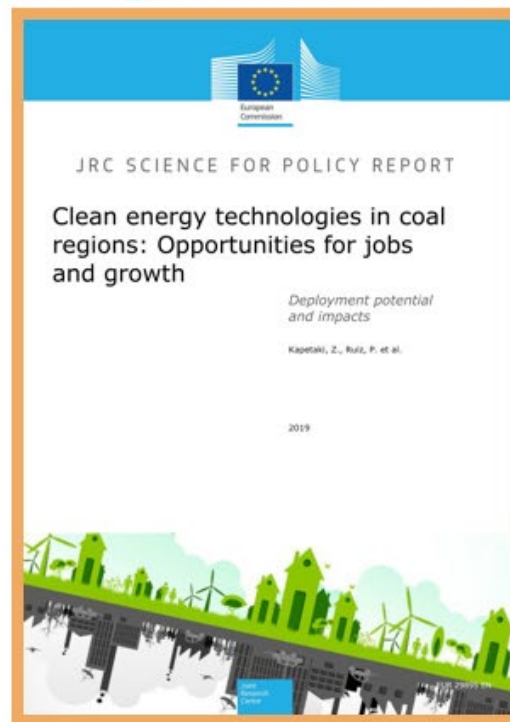
JRC support to the Coal Regions in Transition



JRC support to the Coal Regions in Transition

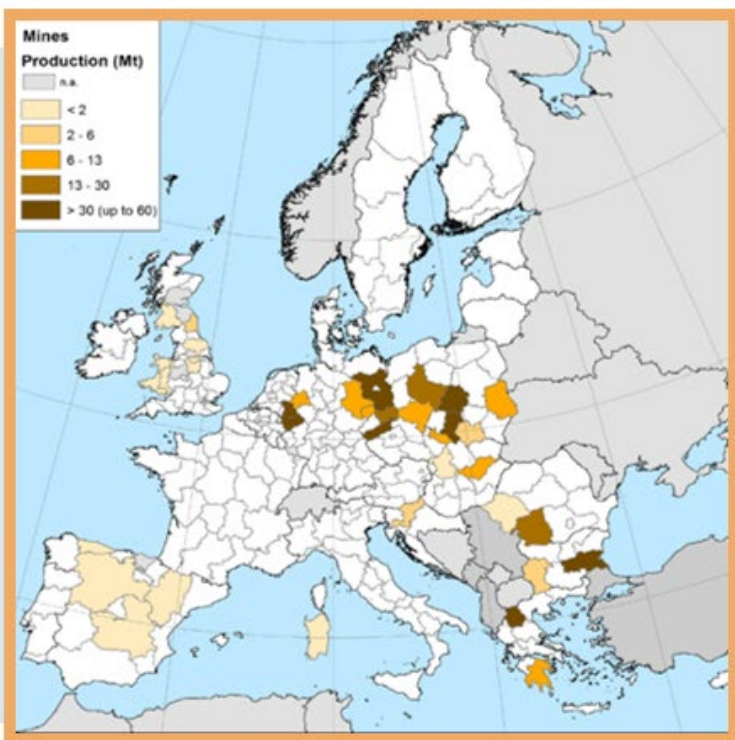


JRC 2018 CRiT Report



JRC 2019 CRiT Report

Challenges of Coal Regions in Transition

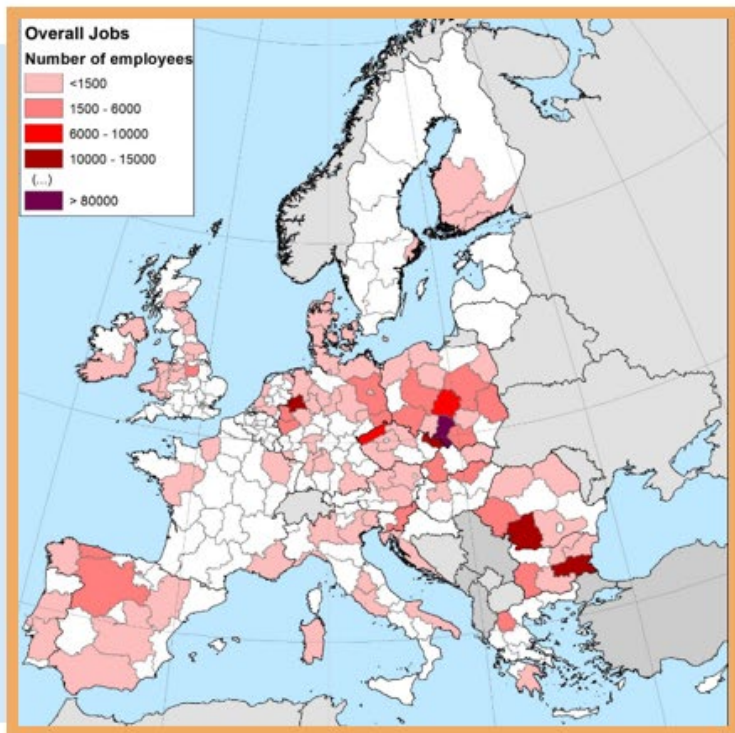


- Coal related activities in the EU28 regions:
 - **128 coal mines** in 12 Member States (500 Mt of hard coal and lignite, 72% of EU consumption).
 - **207 coal-fired power plants** in 21 Member States (150GW, 35% of fossil fuel power generation).
- Foreseen capacity drop⁽¹⁾ from 150 GW in 2016 to:
 - 105 GW in 2025.
 - around 55 GW in 2030.

Source: JRC (2018). EU coal regions: opportunities and challenges ahead.

(1) Own estimations based on 2016 ENTSO-E's mid-term adequacy forecast

Employment in the Coal Sector



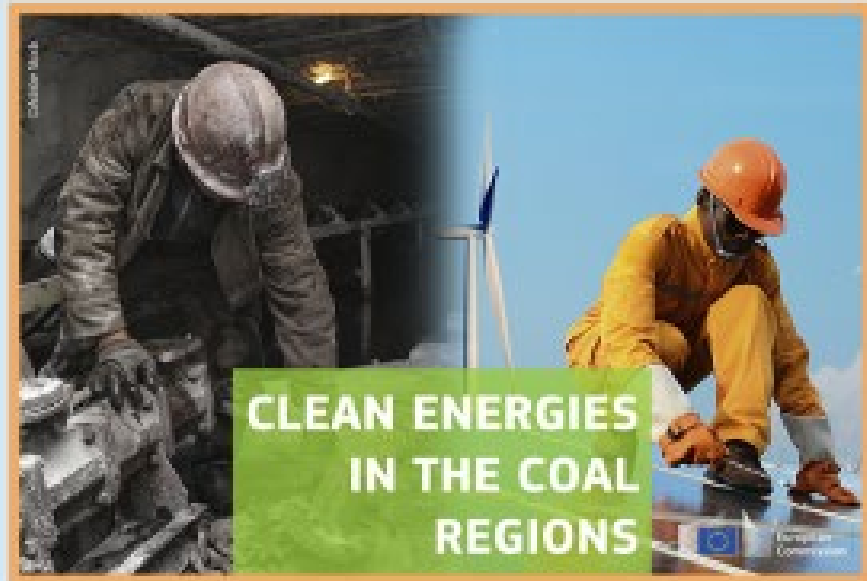
- Direct employment in the EU:
 - 52 700 in coal power plants
 - 185 000 in coal mining
 - Ranges per Member State:
 - Plants: 100 (SE) to 13 500 (PL)
 - Mining: 300 (IT) to 99 500 (PL)
- Estimated EU indirect employment:
 - 215 000 indirect jobs

Source: JRC (2018). EU coal regions: opportunities and challenges ahead.

JRC support to the Coal Regions in Transition



Employment transition



ONGOING

Hindsight



Mine
reclamation



Batteries



Residential



Wind



PV



Biomass

POTENTIAL

Foresight

The transition is already happening



Source: IBC Solar

Solar PV

- Plant in Visonta (HU)
- 16 MW, 72 500 panels

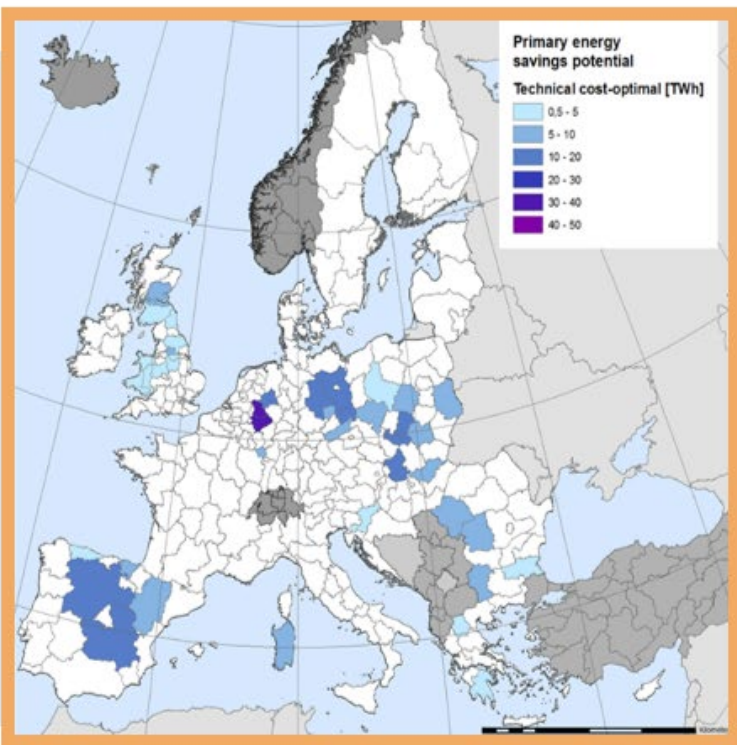


Source: Dezhnev, M. (2018)

Wind energy

- Wind farms in Klettwitz (DE)
- 145.5 MW, 5 wind farms

Residential energy savings potential in the CRiT

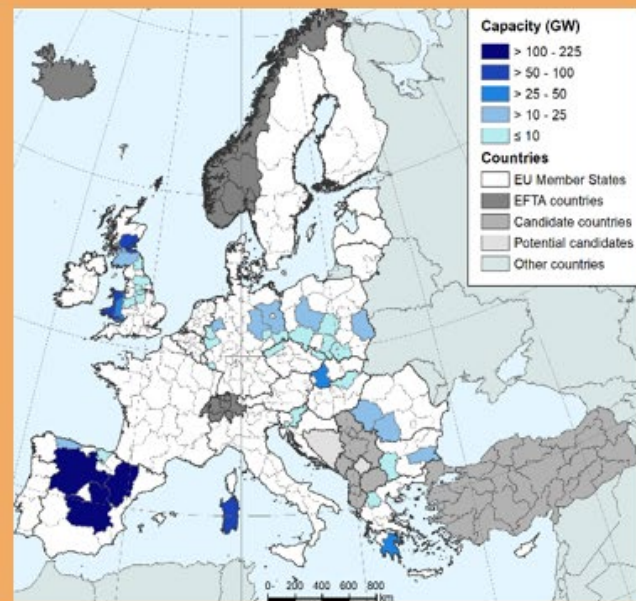


Energy savings

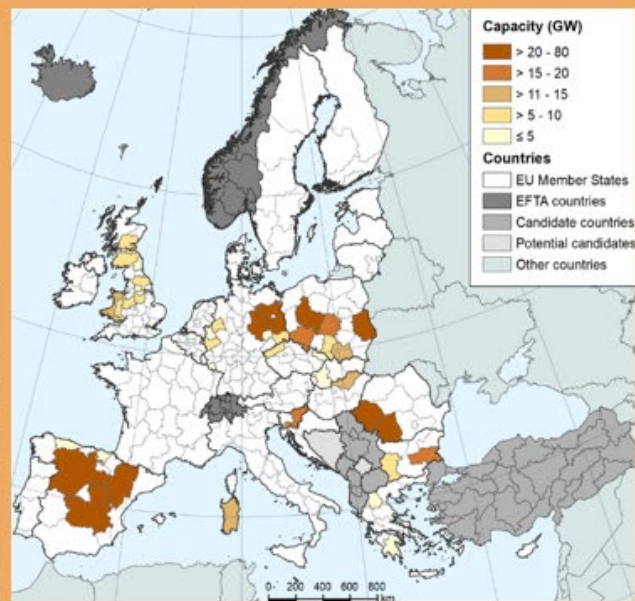
Source: JRC (2020). Clean energy technologies in coal regions: Opportunities for jobs and growth.

- Most of the existing buildings do not comply with current energy performance requirements.
- At current rates (~1% per year), more than 100 years to renovate the stock.
- The biggest cities concentrate the potential savings across the CRiT: Düsseldorf (up to 49.02 TWh), Köln (DEA2 up to 44.02) and Brandenburg (DE40 up to 26.72 TWh)
- **The maximum energy saving potential for DE equals 5.9% of the 2017 national primary energy consumption.**

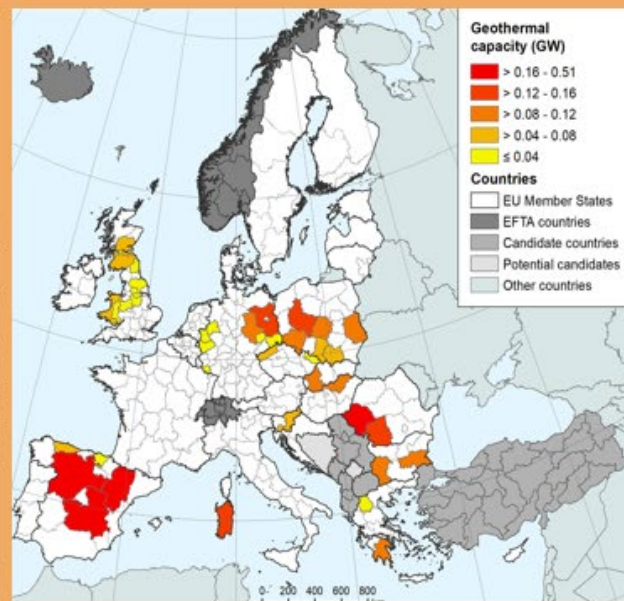
Clean energy technical potential in coal regions



Wind



Solar PV



Geothermal

Source: JRC (2020). Clean energy technologies in coal regions: Opportunities for jobs and growth.

JRC support to the Coal Regions in Transition



Employment Assessment



Regionally-induced, plausible employment scenario



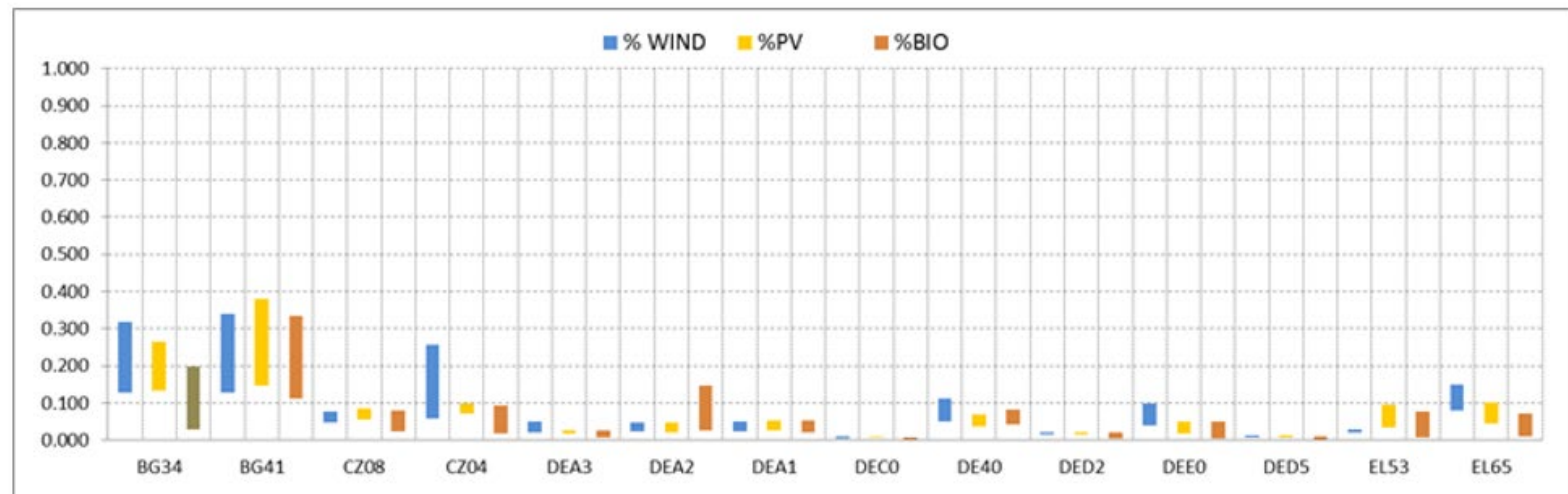
NUTS2 capacity scenario

EU27+UK
Scenario

Regional
distribution

Induced
employment
assessment

- How much of the EUCO3232.5 new national capacity will be likely installed in each NUTS2? : Plausible maximun and minimun ranges



CRiT Induced Employment

EU27+UK
Scenario

Regional
distribution

Induced
employment
assessment

"JRC extended JOB FACTOR":

- WIND
- PV
- value chain analysis
- national & EU technology trade
- technology learning

Simplified "Trace the investment" for:

- Diffuse value chain
- Investment/jobs ranking
 - Biomass
 - Energy Efficiency
 - Geothermal



Employment effects of renewable electricity deployment. A novel methodology^a

Margarita Ortega ^{a,b}, Pablo del Río ^c, Pablo Ruiz ^d, Christian Thiel ^e

^a Instituto para la Diversificación y Ahorro de la Energía, C/ Madrid, 8, 28004 Madrid, Spain
^b Department of Electromechanical Engineering, University of Burgos, 47100 Burgos, Avd. Cantabria, s/n, 09006 Burgos, Spain
^c Institute for Public Policies and C
^d Joint Research Centre, Institute J

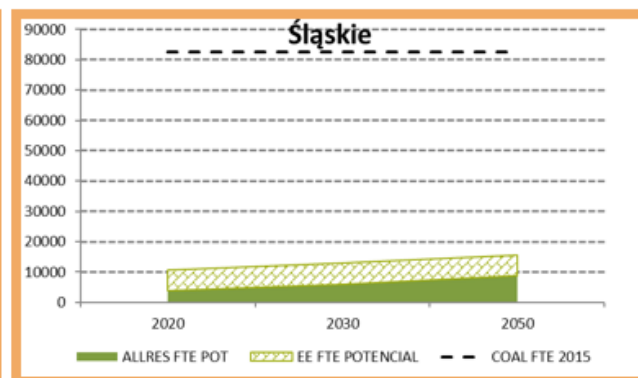
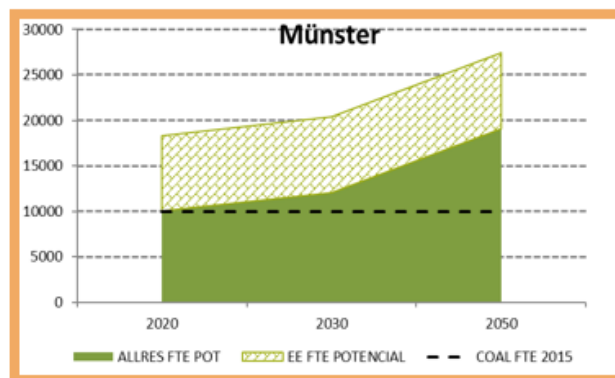
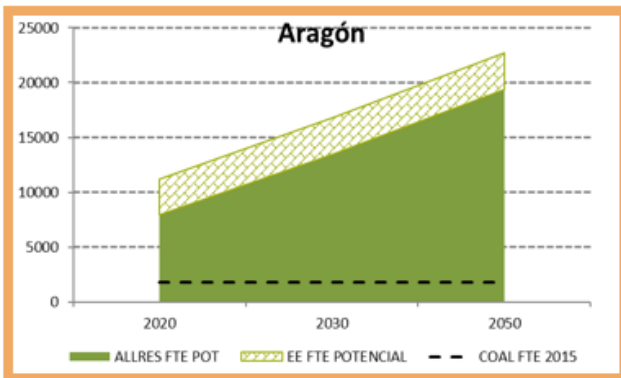


Analysing the influence of trade, technology learning and policy on the employment prospects of wind and solar energy deployment: The EU case^a

Margarita Ortega ^{a,b,c}, Pablo del Río ^d, Pablo Ruiz ^e, Wouter Nijs ^f, Savvas Politis ^g

^a European Commission, Joint Research Centre, Via Einaudi 89, I-11100, Trento, the Netherlands
^b Department of Electromechanical Engineering, University of Burgos, 47100 Burgos, Avd. Cantabria, s/n, 09006 Burgos, Spain
^c Instituto para la Diversificación y Ahorro de la Energía, C/ Madrid, 8, 28004 Madrid, Spain
^d Institute for Public Policies and CREA, National Research Council of Spain (CSIC), C/ Alameda 28-29, 28007, Madrid, Spain

Different regions, different available potentials



High potential for the deployment of additional clean energy technologies.

- 28 CRiT Regions
- Ensure exploitation of available potential

Medium potential for the deployment of additional clean energy technologies

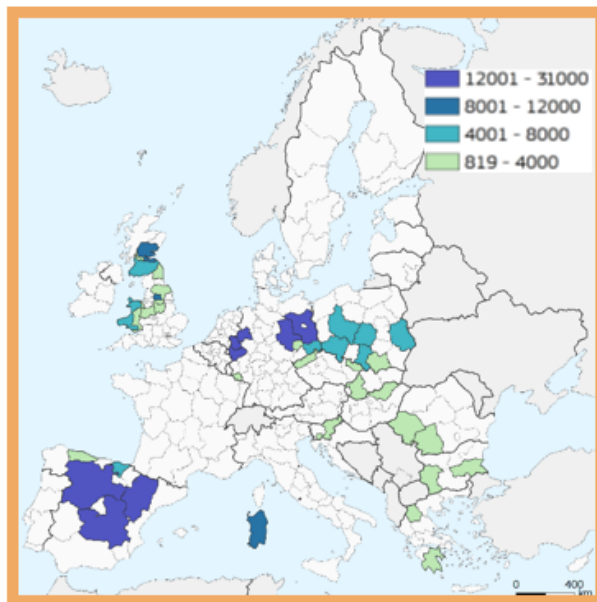
- 7 CRiT regions
- Support faster transition

Low potential for the deployment of additional clean energy technologies

- 7 CRiT regions
- Identify and develop alternatives

Source: JRC (2020). Clean energy technologies in coal regions: Opportunities for jobs and growth.

RES Employment potential in CRiT by 2030



CRiT total RES induced employment 2030 scenario

Source: JRC (2020). Clean energy technologies in coal regions: Opportunities for jobs and growth.

- By 2030, up to 315 000 jobs can be created by deploying renewable energy technologies in line with the EUCO3232.5 scenario.
- This is comparable to nearly 200 000 direct jobs currently in the coal-related activities of the coal regions.
- Regions will need different adaptation strategies to cope with a coal phase out.

Key messages

- The deployment of RES in CRiT can facilitate the energy transition and support post-mining communities with induced jobs.
- The development of such projects benefits from the availability of infrastructure, land, skills and industrial heritage.
- Close cooperation between companies, regulators, investors and local communities and authorities is essential to maximize socio-economic development.
- Support must be tailored to mobilize, further develop or identify additional available potential, depending on the starting point of the region.
- By 2030, up to 315 000 jobs can be created in the coal regions by deploying renewable energy technologies as projected in the EUCO3232.5 energy scenario. There are nearly 200 000 direct jobs related to coal activities.

Thank you



© European Union 2020

Unless otherwise noted the reuse of this presentation is authorised under the [CC BY 4.0](https://creativecommons.org/licenses/by/4.0/) license. For any use or reproduction of elements that are not owned by the EU, permission may need to be sought directly from the respective right holders.

Online questionnaire

Do you believe that Europe will succeed in using the Covid-19 crises to truly boost the clean energy transition?

Where do you identify the major roadblocks to fully realise the post-Covid green energy transition? (you can pick up to three answers)

How are you feeling in this moment about the clean energy transition of Europe? (Pick one)

ROUNDTABLE

Policy and industry talk on the green recovery

Michaela Holl

Policy Analyst, Renewables and CSS policy, DG ENER

Viktoriya Kerelska

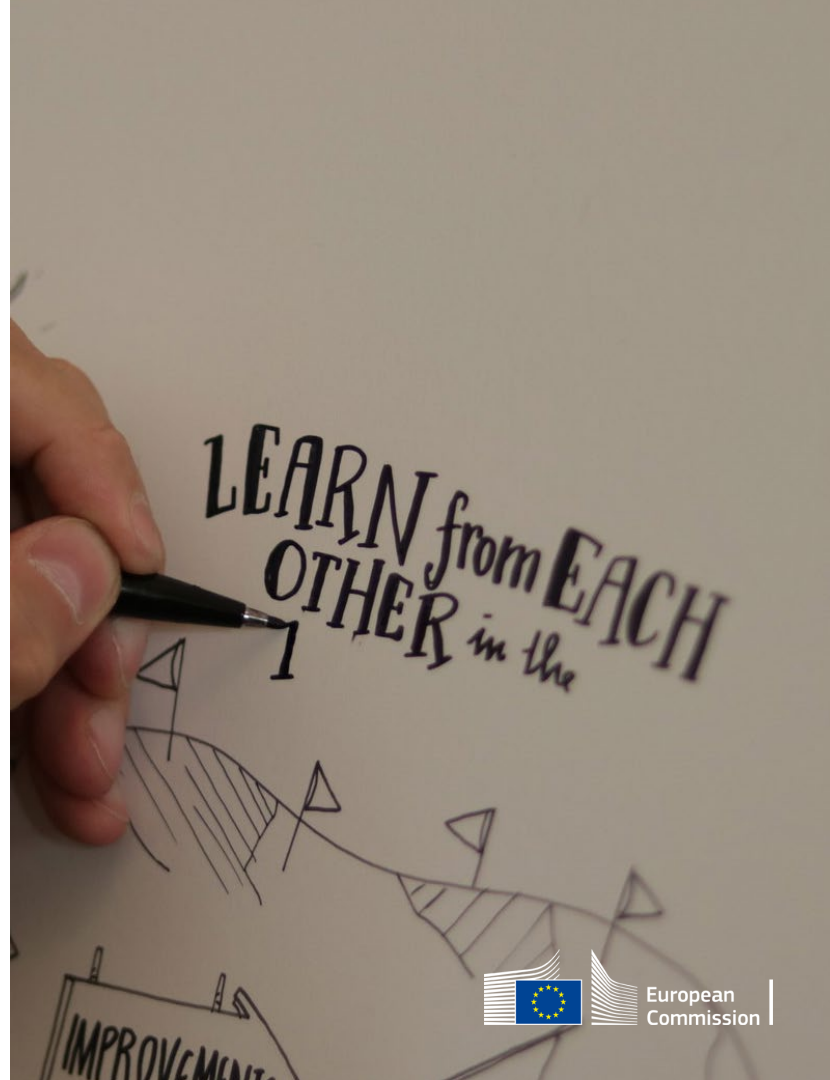
Head of Advocacy & Messaging, WindEurope

Naomi Chevillard

Policy Advisor, SolarPower Europe

Katherine Poseidon

Policy Analyst, Bloomberg New Energy Finance



Q&A



Thank you

secretariat@coalregions.eu

#CoalRegionsEU

