



Welcome

Analytical approaches to regional transition

Platform for Coal Regions in Transition

#CoalRegionsEU

Energy

Paris Agreement compatible scenarios for the European Union – implications for regional policy making and co-benefits

Sixth Working Group of the Platform for Coal Regions in Transition

Paola A. Yanguas Parra, Climate Analytics

Brussels, 16 October 2019

1.5°C

The long-term temperature goal of the Paris Agreement and the best available science



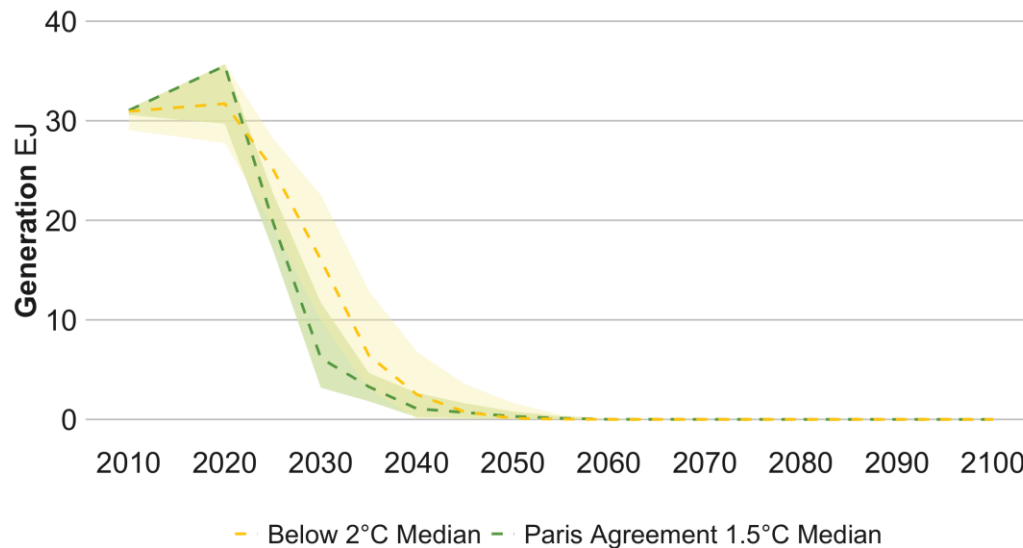
COP21 • CMP11
PARIS 2015
UN CLIMATE CHANGE CONFERENCE

- Art 2: Paris Agreement long-term temperature goal: limit warming to “**well below 2°C** and pursuing efforts to limit the temperature increase to **1.5°C** above pre-industrial levels”
- Art 4: Parties aim to reach a **global peaking** as soon as possible ... and to undertake **rapid reductions** thereafter **in accordance with best available science**
- Substantial new data on 1.5°C is presented by the IPCC SR1.5

Rapid Phaseout of Coal needed to get to 1.5°C ... and even to 2°C

Generation From Coal (w/o CCS)

Region: World



Source: Pathways from Huppmann et al. (2019) filtered with sustainability criteria

CLIMATE ANALYTICS Climate Analytics: Science-Based Policy to Prevent Dangerous Climate Change

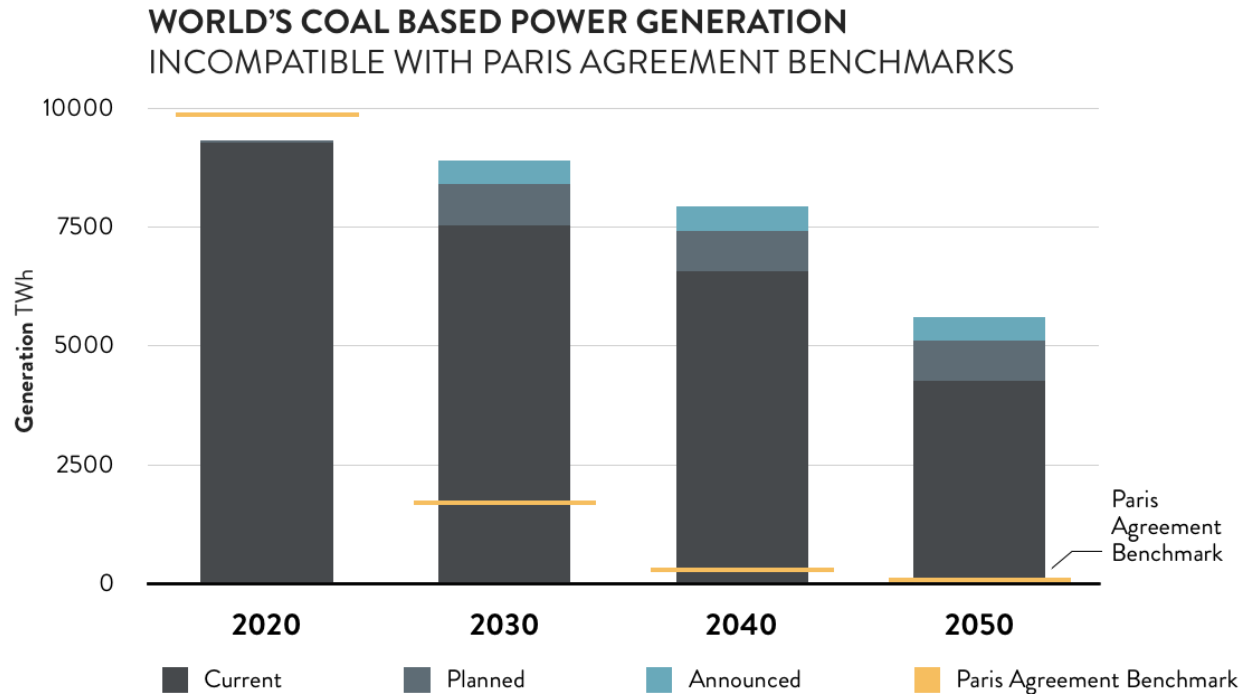
Region	Phaseout Date
OECD+EU	2031
ASIA	2037
LATIN AMERICA	2032
MIDDLE EAST AND AFRICA	2034
EASTERN EUROPE AND FORMER SOVIET UNION	2031

Coal power generation must:

- **Peak by 2020**, and
- Rapidly decrease to **80% below 2010 levels by 2030**, and
- Be **phased out by 2040** at the latest

Single most important step to keep the door open
for achieving the Paris Agreement

Large gap between Paris Agreement and current plans



Current **coal power generation incompatible with Paris Agreement.** Gap will be growing substantially in next decade.

No new capacity can be installed and operated over its full economic lifetime **anywhere**

Cancelling the planned expansion is a step in the right direction, but **far from enough**: Early retirements and reduced utilization needed

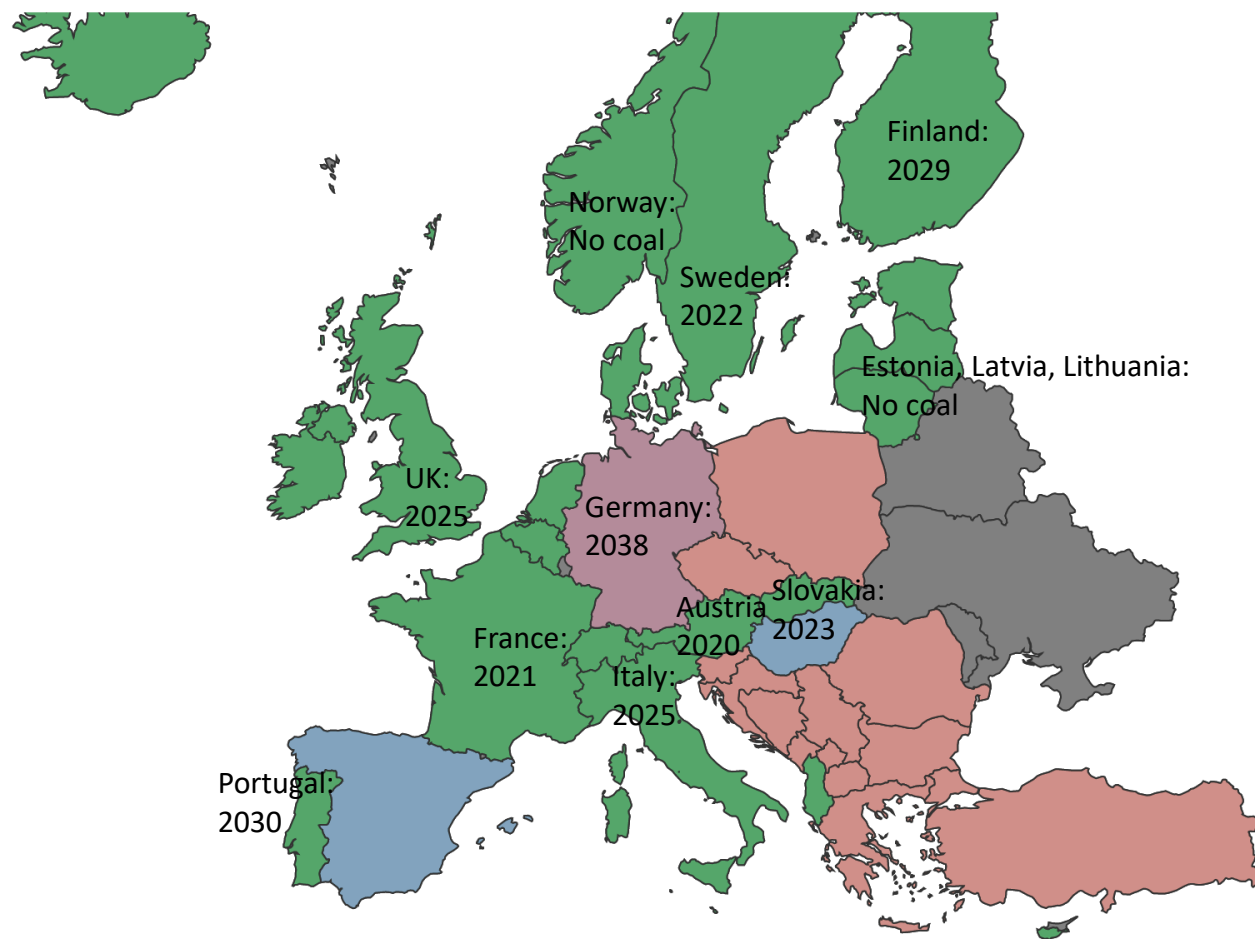


2040



2030

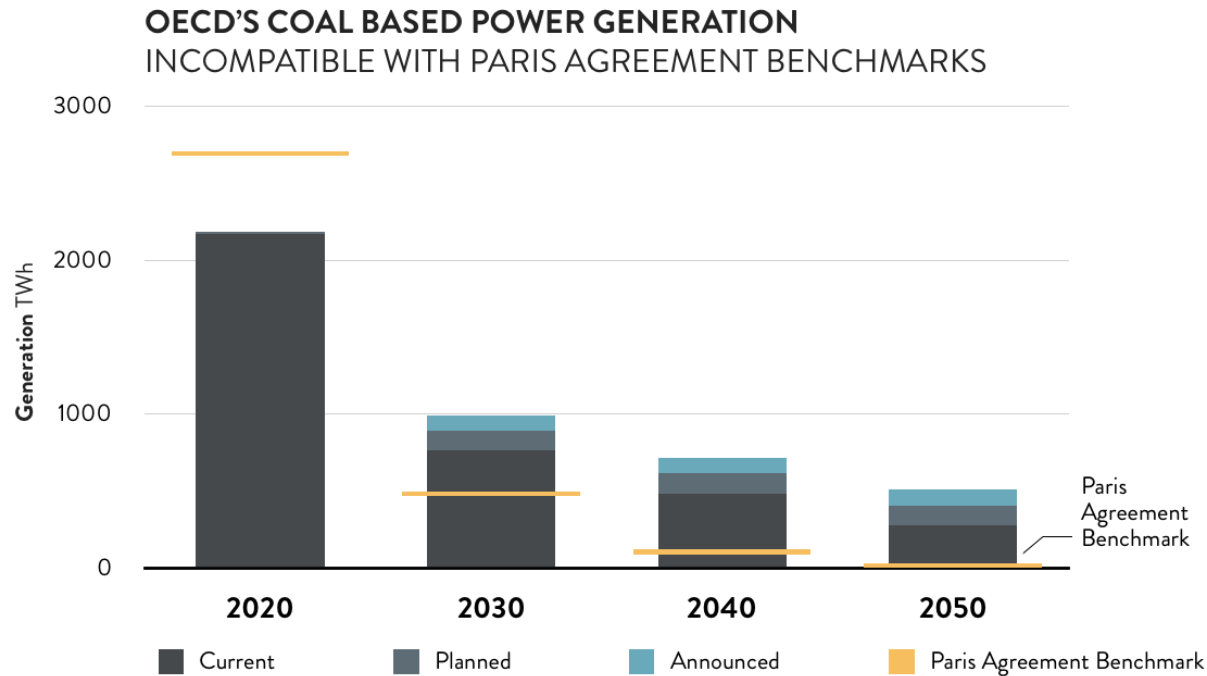
Zoom-in: The European Union



Source: *Europe Beyond Coal - Oct 2019*



2030



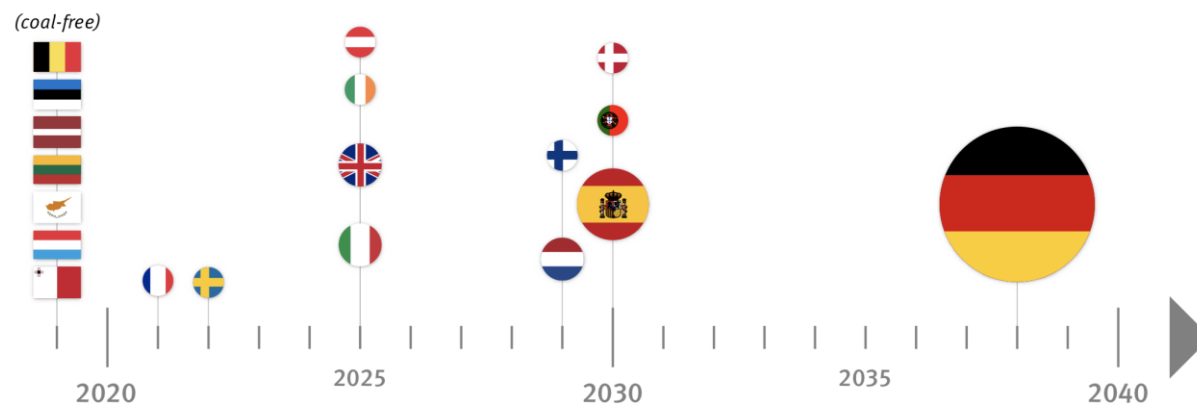
No new capacity can be installed and operated over its full economic lifetime anywhere

Retiring as soon as possible all capacity older than 40 years is important

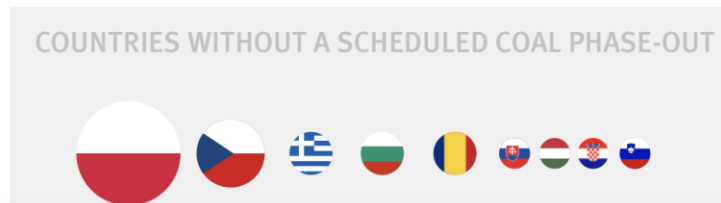
Early retirements and reduced utilization of remaining fleet needed

Adequacy of coal phase-out policies in the EU

EU national coal phase-out plans



The size of each bubble is proportional to the country's emissions from coal.



Source: Carbon Market Watch (2019); Climate Analytics (2018)



RETIRED



ANNOUNCED TO RETIRE

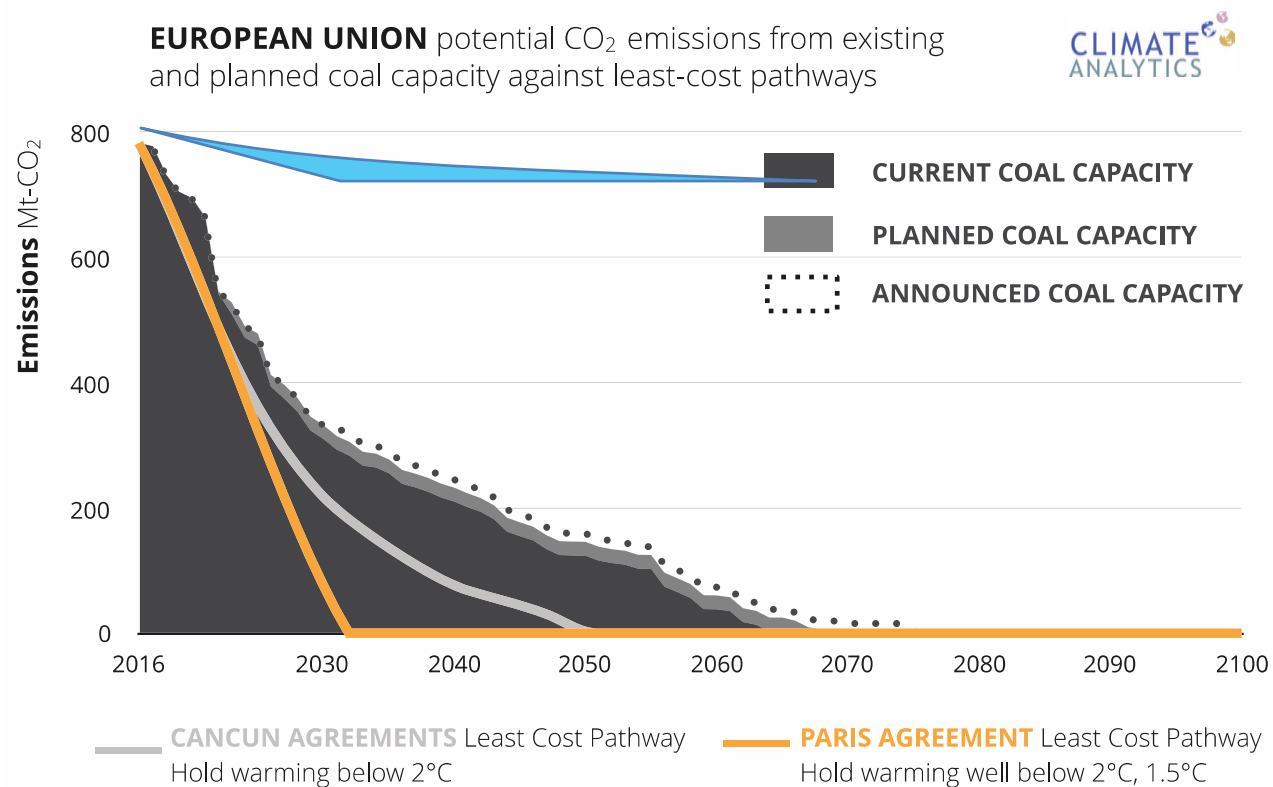


LEFT TO GO



PLANNED PROJECTS

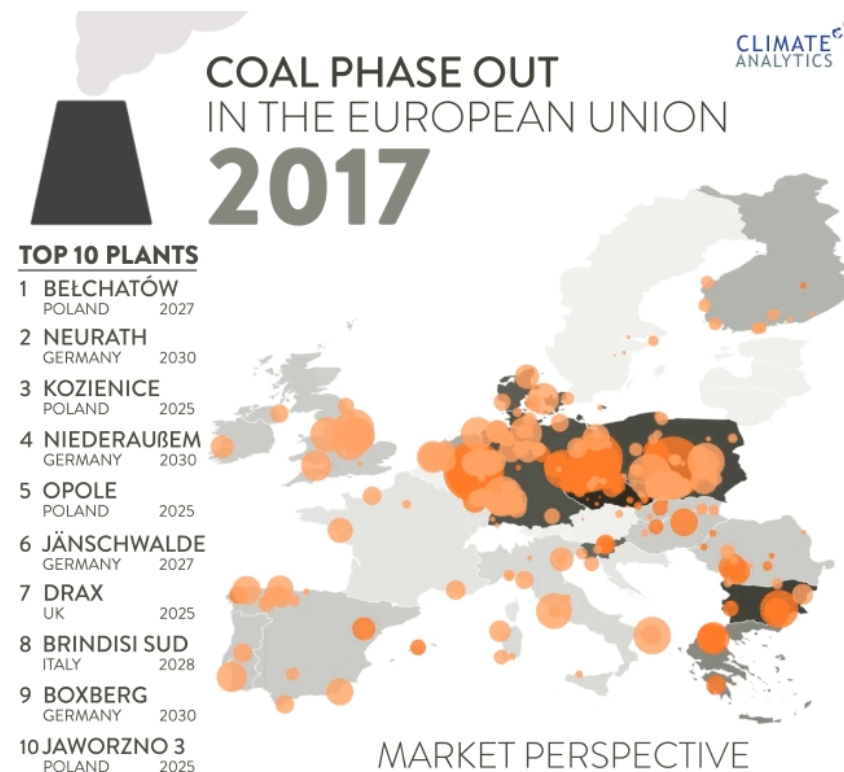
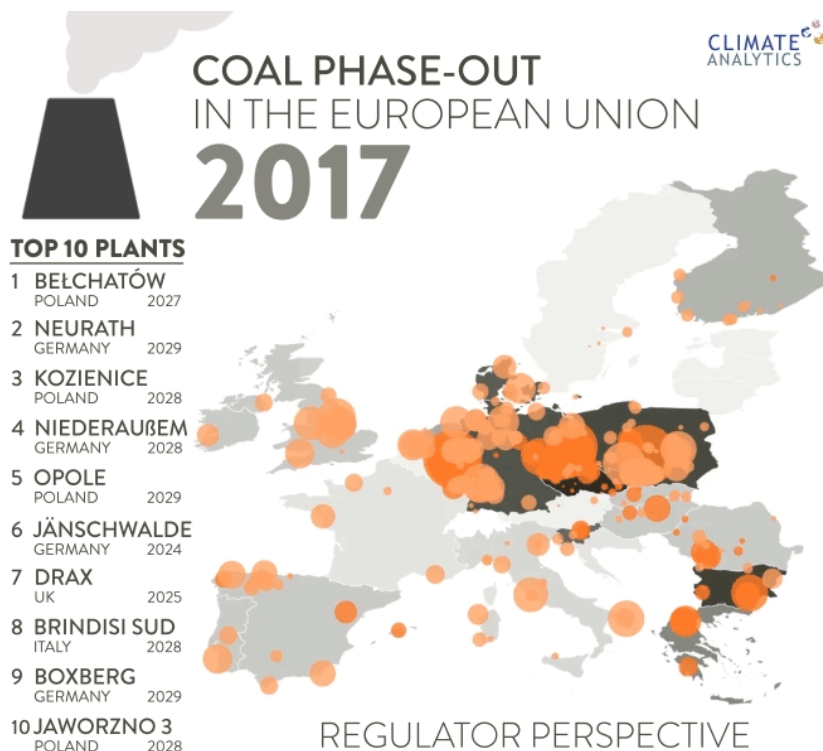
Which plants retire when?



The main question is which plants to retire first?

- Regulator perspective
- Market perspective

Retirement schedule – Regulators vs market perspective



Unit level retirement information

- For 95% of the units there is a difference in retirement dates of ≤ 3 years.
- 56% of the units retire the same year under both perspectives

<https://climateanalytics.org/briefings/eu-coal-phase-out/eu-coal-phase-out-detailed-information/>

COAL-FIRED POWER GENERATION UNITS BY COUNTRY

Country	Unit Name	Opening year	Closing year Regulator	Closing year Market
Austria	Duernrohr 2	1987	2025	2019
Austria	Lenzing Energy-1 No T5	1999	2025	2019
Austria	Mellach power station Unit 1	1986	2020	2017
Austria	Riedersbach 2	1986	2016	2016
Bulgaria	Bobov Dol power station Unit 1	1973	2019	2019
Bulgaria	Bobov Dol power station Unit 2	1974	2016	2016
Bulgaria	Bobov Dol power station Unit 3	1975	2017	2017
Bulgaria	Brikel 3	1961	2020	2020
Bulgaria	Brikel 4	1962	2020	2020
Bulgaria	Brikel 5	1962	2020	2020
Bulgaria	Brikel 6	1962	2020	2020
Bulgaria	Deven 1	2009	2027	2027



The Lowdown: an interactive tool to track the global coal pipeline

The Lowdown

- Coal pipeline at the country level and changes since 2015 for all countries.
- Emissions implications and PA benchmarks for a smaller set of countries (to be expanded).
- Based on data from the “Global Coal Plant Tracker” by Global Energy Monitor, version July 2019.

<http://tools.climateanalytics.org/lowdown/>

36.84 GW

Fleet Size (1.52% of Global Fleet)

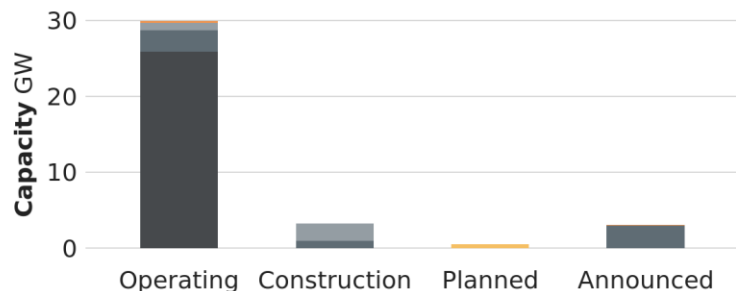
10.83%

Expansion of Coal Fleet

-
Planned Phaseout Date

COAL FLEET IN POLAND

CAPACITY BY STATUS AND TECHNOLOGY



■ Sub Critical ■ Super Critical ■ Ultra Super Critical ■ Other ■ Unk

More information

<https://climateanalytics.org/briefings/coal-phase-out/>

Useful links

Investors vs. the Paris Agreement

This briefing paper summarises research Urgewald and its partners commissioned to determine which institutional investors are backing the world’s top 120 coal plant developers.

Coal Exit List

A global list by Urgewald of coal companies and subsidiaries.

Global Coal Finance Tracker

Project tracking the financial support for coal plant projects globally. Currently include only foreign financing flows from public finance institutions such as export credit agencies and development banks.

The Global Plant Tracker

Provides information on all existing coal plants of 30 MW or larger, as well as every plant proposed since January 1, 2010.

Beyond Coal

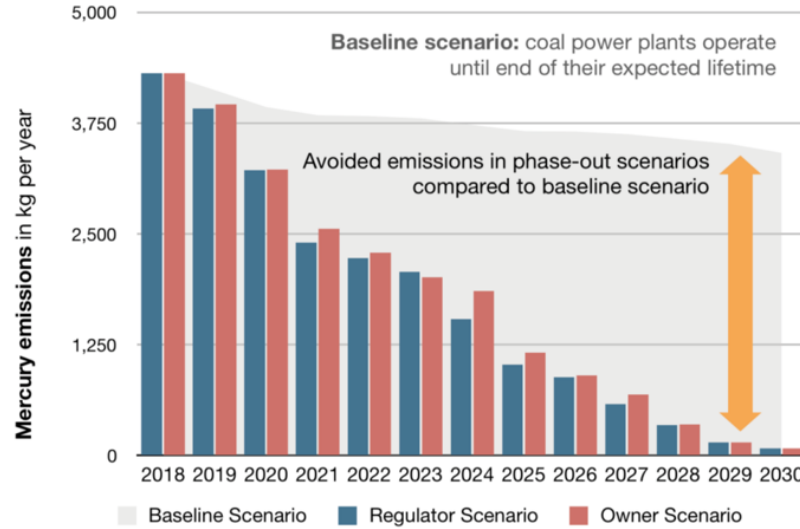
Campaign which provides data on coal in the United States.

Europe Beyond Coal

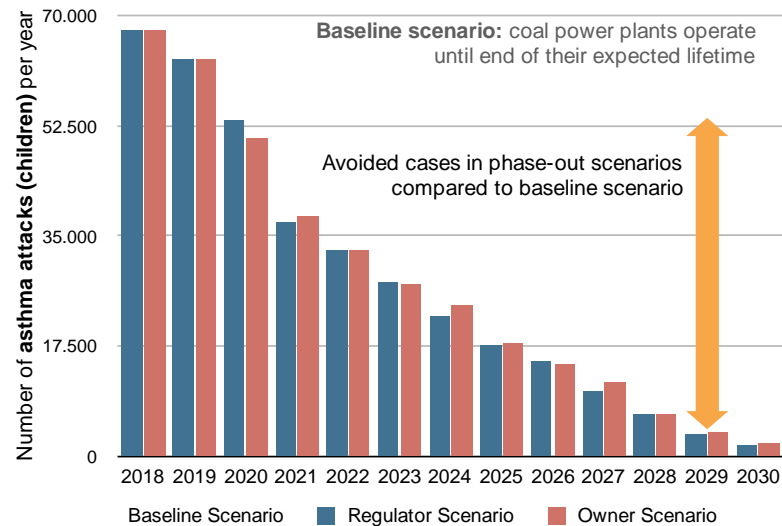
Campaign which provides data on coal in the European Union.

The benefits of a coal phase out: Reduced air pollution and health impacts

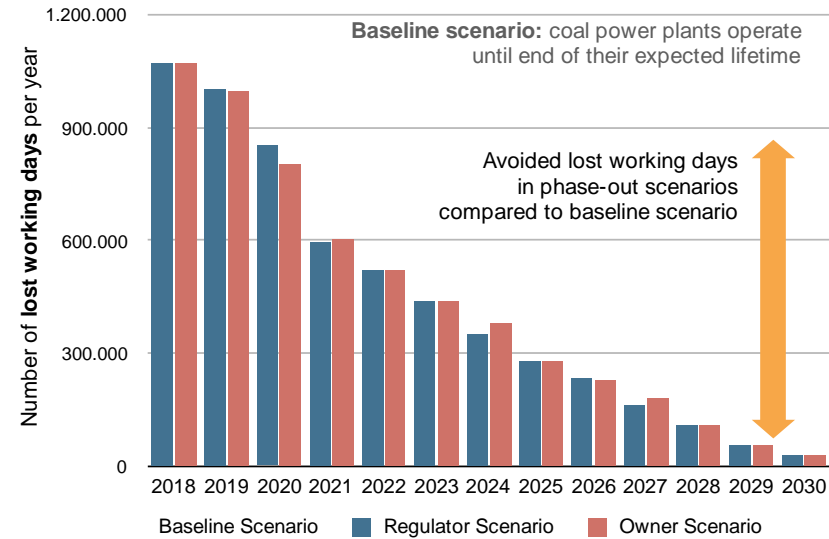
Mercury emission estimates comparing the Paris Agreement compatible phase out scenarios to the baseline scenario (in kg)



Estimates of coal-power related **asthma attacks (children)** comparing the Paris Agreement compatible phase out scenarios to the baseline scenario



Estimates of coal-power related **lost working days** comparing the Paris Agreement compatible phase out scenarios to the baseline scenario



- Achieving the Paris Agreement requires **transformative action in all sectors**.
- **Coal power** generation is the **single most important sector** we need to address to keep the door open for the Paris Agreement goal.
- Current plans in many countries in the European Union are not in line with Paris Agreement: great risk of stranded assets
- **No new capacity** can be installed **anywhere and** additional efforts required to **retire early** operating coal plants, and **reduce their utilisation rate** substantially.
- There are **large co-benefits** for an early and managed coal phase-out.

Thank you !

For additional information about our work on coal phase-out:

<https://climateanalytics.org/briefings/coal-phase-out/>



Supporting science based policy to prevent dangerous climate change enabling sustainable development
www.climateanalytics.org



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Regional roadmaps on Just Transition

Stavros Mavrogenis, WWF Greece

16.10.2019

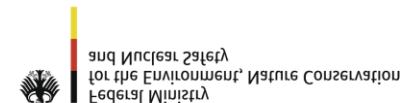




Project Goal

- “Relevant stakeholders in Bulgaria, Greece, and Poland, but also in Brussels and Germany, **recognize Just Transition as a fully legitimate component of climate policy.** Through the development and roll out of the **Just Transition plans,** the project strengthens dialogue and sets out courses of action on the Just Transition agenda throughout **Europe.**”
- Stakeholders : local authorities, national institutions, trade unions, civil society, EU institutions.
- Partners: WWF BG, WWF GER, WWF GR, and WWF POL
- Duration: October 2017 – February 2020

based on a decision of the German Bundestag



supported by:



Silesia, PL



- Last large coal mining area in the EU
- 4,6 mln people [12,14% of Polish population]
- Strong urban development
- Low unemployment (4,3%)
- Industry accounting for 1/3 of the regional GDP

Silesia's challenges

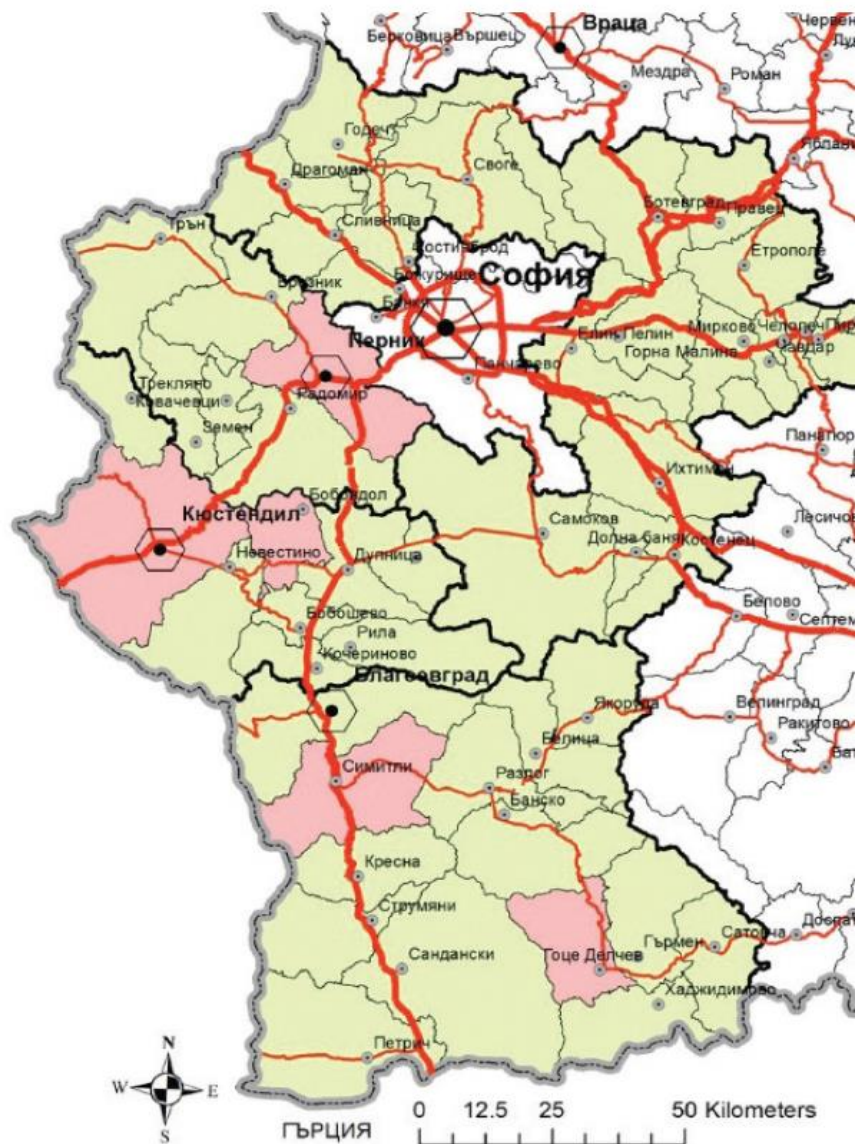


- Big differences between subregions, high level of post-mining devastations
- Ageing society & depopulation
- Decline in the workforce of mining and metalurgy sectors
- Lack of workforce
- Insufficient local infrastructure
- High crime rate
- Generally lower quality of life

Territorial scope of the study – Southwest Bulgaria

Southwest Bulgaria

Areas: Bobov Dol and Kyustendil, Pernik and Simitli, Gotse Delchev.



er centers
st-class roads
ls

Bulgaria
th a special focus
aria and project



SWB's Challenges

- **Infrastructure that is underdeveloped** or in a poor state and does not raise any interest in new locations and investments
- **The workforce profile** is not targeted at modern businesses and jobs
- Poor knowledge of solutions for alternative business and employment in agriculture, renewable energy sources, food production, etc.
- Active internal and external **migration** of secondary and higher education graduates and professional development outside the region

Western Macedonia, Greece



- Region: Western Macedonia
- Population (2015): 276.000
- Area: 9.451 km²
- 12 municipalities
- 4 “Lignite” municipalities
- 8 open lignite mines,
- 4 TPS

W.Macedonia's challenges

- Mines, electricity production etc: 45% of regional GDP
- PPC: ~46% of direct jobs in secondary sector
- WMR 9th in **unemployment rates** amongst EU regions
- Increasing unemployment trends
- **Lignite phase-out by 2028** will leave more than 4.000 workers unemployed



ROADMAP FOR THE TRANSITION OF THE WESTERN MACEDONIA REGION TO A POST-LIGNITE ERA

The Greek Roadmap

- Collaboration with Panteion University of Athens
- Published in 2016
- First presented to local stakeholders in Kozani
- Serves as the blueprint for the PL and BG plans but also replicated to other cases as well (e.g. Romania).

How you do it?

- The study should be based on thorough and detailed information and **statistical data from reliable sources**
- It should **take into consideration all relevant national and local strategic documents** for the region
- It should be based on **close cooperation with relevant stakeholders and most importantly local communities** (such as local administration, people, trade unions and businesses).

How you structure it?

- Presentation of the geographical scope and information for the region
- Best practices and current developments
- Scenarios for alternative (to coal and mining) economic activities
- Comparative evaluation of the scenarios
- financial needs and funding tools

Lessons learned from Greece

- Inaction scenario: 6.128 lost jobs and € 1,14 billion lost in reg. GDP
- Investments of €2,35 billion (until 2030) in 12 sustainable economic activities.
- x2 the # of jobs (11,595)-more than x2 the regional GDP (€2,48 billion) compared to losses from plant retirement.
- The rejuvenation of the regional economy in Western Macedonia **is possible** provided funds are directed towards sustainable economic activities and not wasted in the wrong ones (e.g. “clean” coal technologies, lignite subsidies etc)

Lessons learned from Bulgaria

- Scenario 1 - maintain the status quo or do nothing;

1.820 jobs will be lost

- Scenario 2 - a growth scenario based on the internal opportunities and advantages of the region;

2.910 new jobs

- Scenario 3 – “Creative upgrade” scenario with the participation of foreign investors based on the concept of “creative destruction”.

4.412 new jobs

Take home messages

- **Tailor made strategies!** Different Coal regions face different challenges
- **Quantifiable**, long-term and cost estimated strategies
- Include **everyone** in the process!!!
- **Funding:** Just Transition Fund needs to offer “fresh money”.
4.8 billion euros is not enough

WWW.REGIONSBEYONDCOAL.EU



Thank you for your attention!

Comparison of coal regions to better identify synergies and accelerate transition processes in Eastern countries

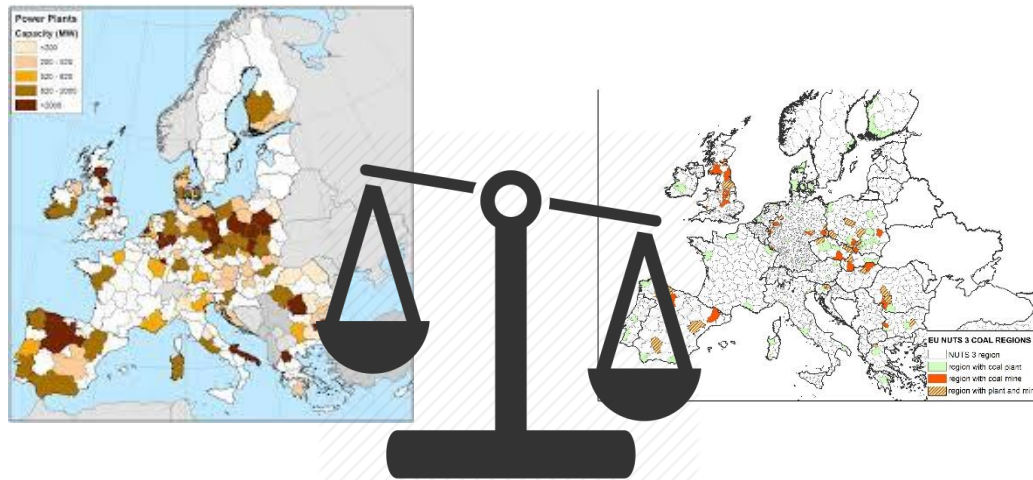
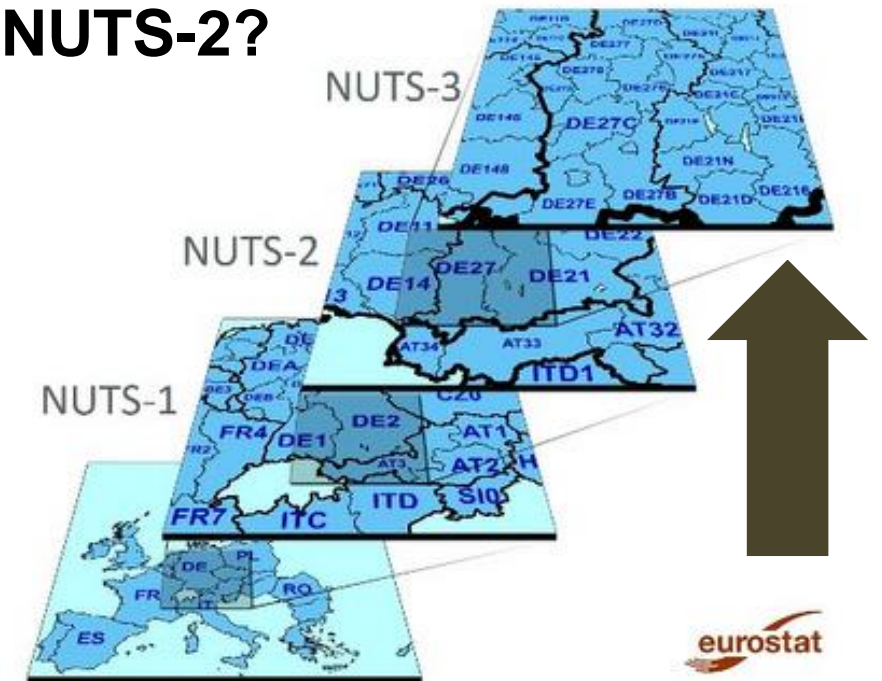
6th Working group meeting
October 16th 2019, Brussels

Presenter: Csaba Vaszkó

Introduction and Assumptions

Does NUTS-3 level classification provide more comprehensive comparison of coal regions than NUTS-2?

- NUTS-2 classification is too coarse to define clusters
- NUTS-3 analysis can provide better basis
 - to identify potential **synergies** between coal regions on risks, challenges, opportunities
 - to identify segments or clusters of coal regions where **segment specific transition tools and strategies** can be deployed



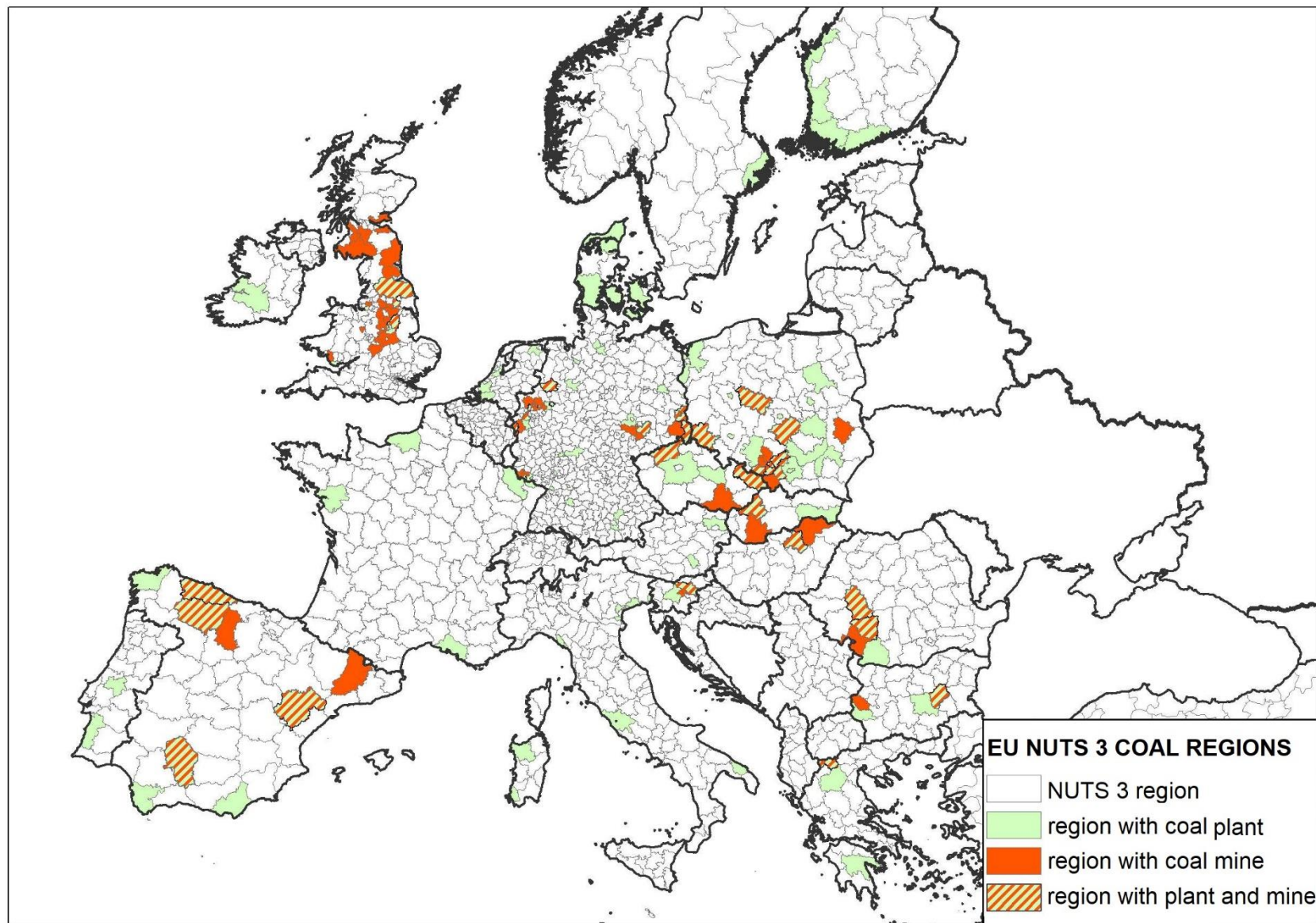
Identification and segmentation of coal regions

The segmentation approach facilitates the selection and evaluation of segment-specific tools

Identify coal regions at NUTS3 level

- Listing and selecting regions with coal mines and/or coal power plants in Europe
- Characterization based on: capacity, location, production
- Level of classification: NUTS-3

NUTS3 regions with coal assets



In total: 154 NUTS3 regions have coal mines or/and coal power plants

Datasets:
EUROSTAT
ENTSO-E
EURACOAL

Identification and segmentation of coal regions

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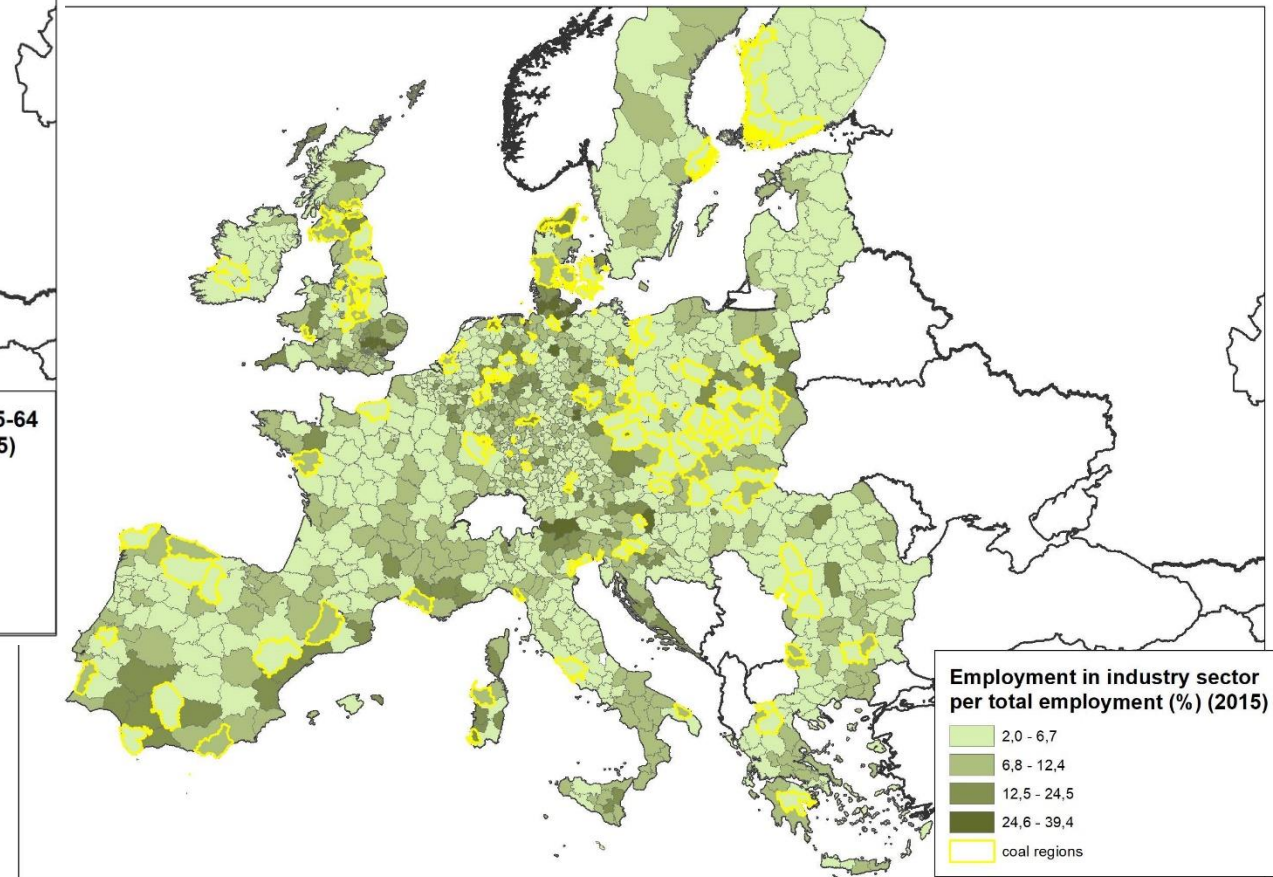
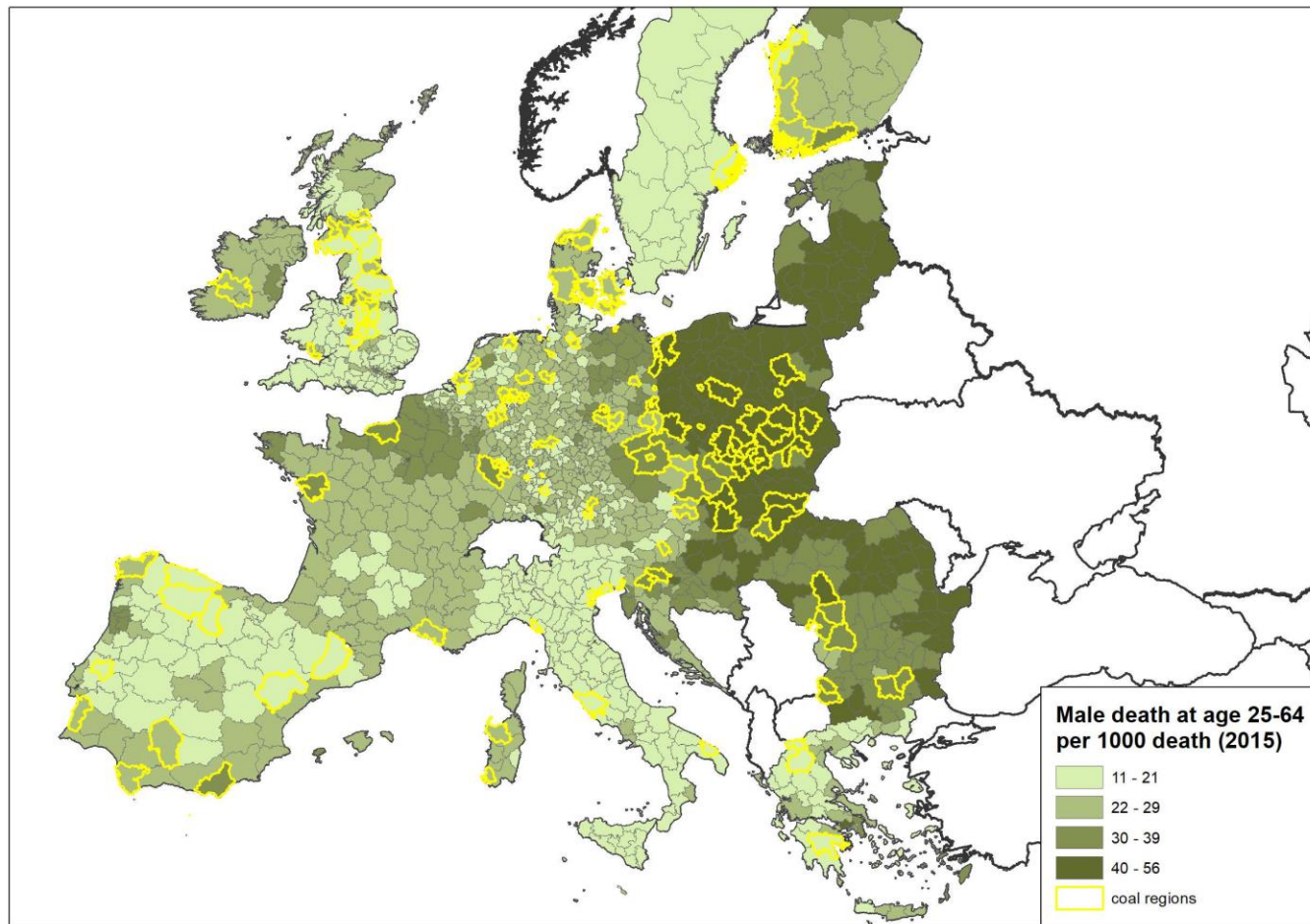
Coal vs. Non-coal regions

- Defining socio-economic characteristics that can describe NUTS3 regions
- Select indicators that can differentiate coal and non-coal regions

Socio-economic indicators for identifying the disparities between coal and non-coal regions

- Demographic features
 - Migration balance, male death
 - Population by different educational level
 - Age structure
 - Employment share of major sectors
 - Unemployment rate
- Economic features
 - GDP/ capita
 - Business demography
 - Foreign Direct Investments per capita
- Emmission features
 - Emmission of different air pollutants per sector
 - Air pollution induced deaths

Socio-economic characteristics of coal and non-coal regions



Identification and segmentation of coal regions

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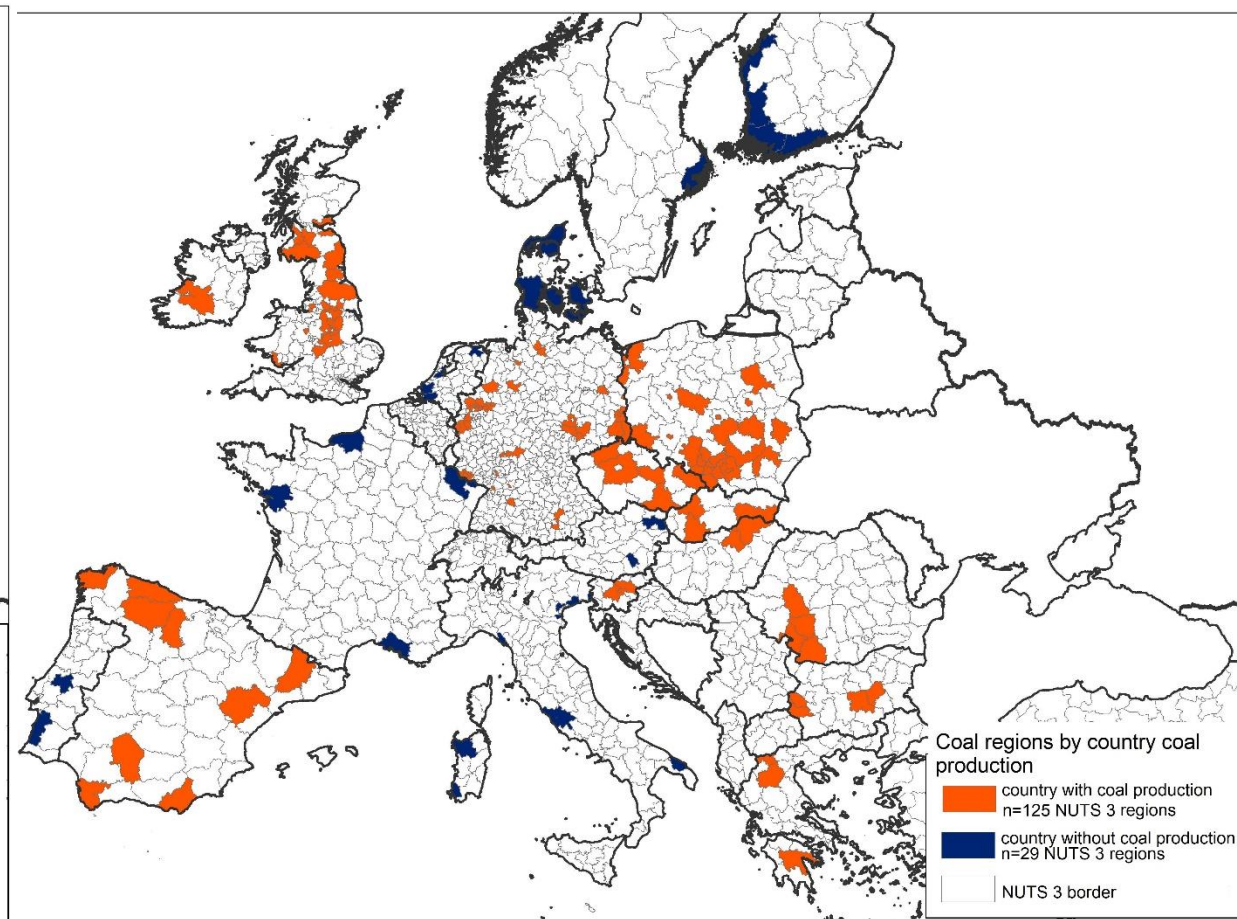
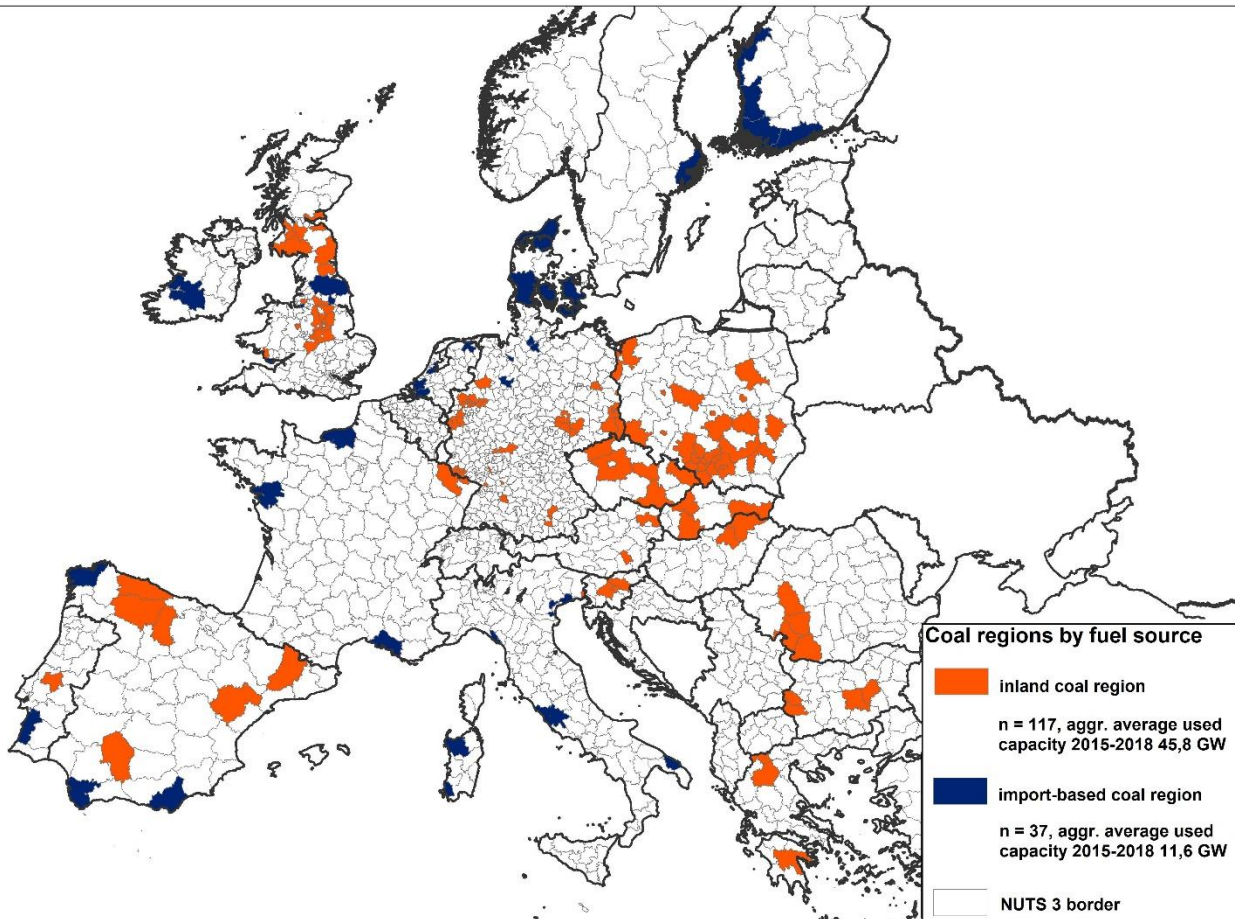
Coal vs. Non-coal regions

- Defining socio-economic characteristics that can describe NUTS3 regions
- Select indicators that can differentiate coal and non-coal regions

Segmentation of coal regions

- Differentiation between coal regions based on source of coal supply
- Coal power plants are located on the coast
 - Coal power plants near coast or navigable rivers
 - Coal power plants in countries without coal production

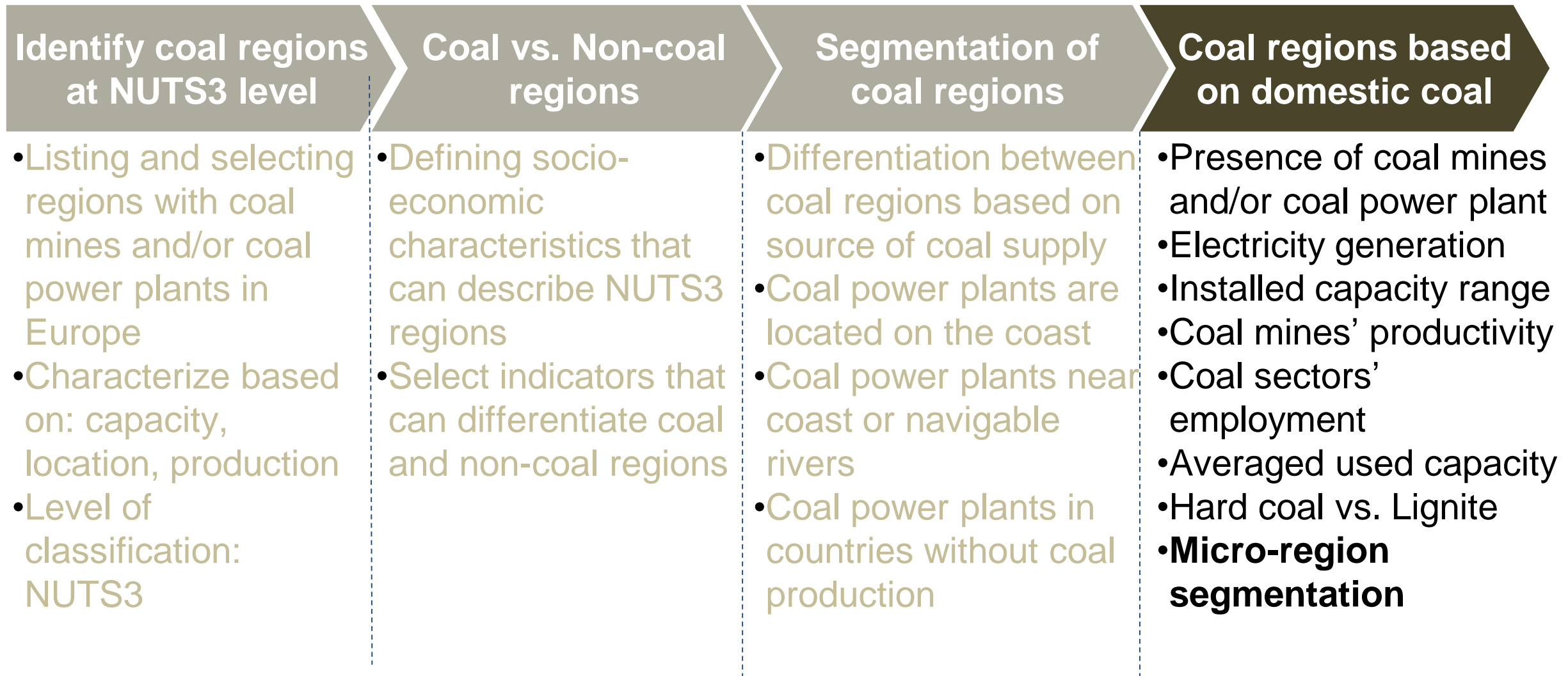
Segmentation based on source of coal/lignite supply



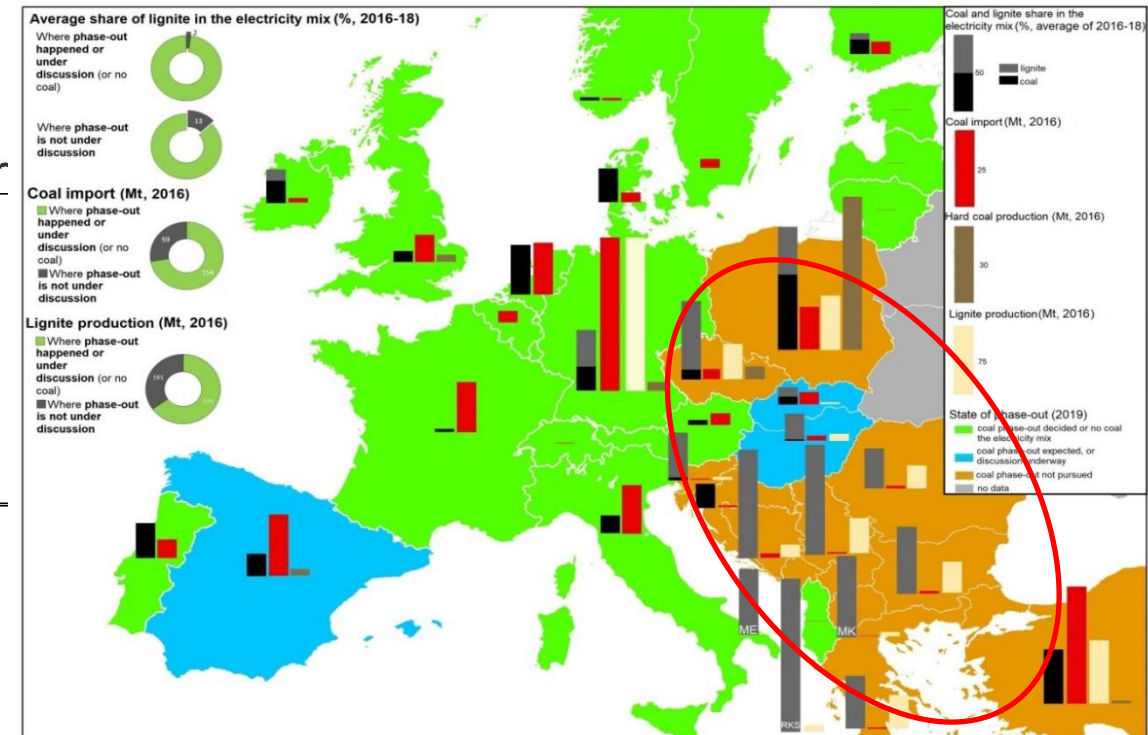
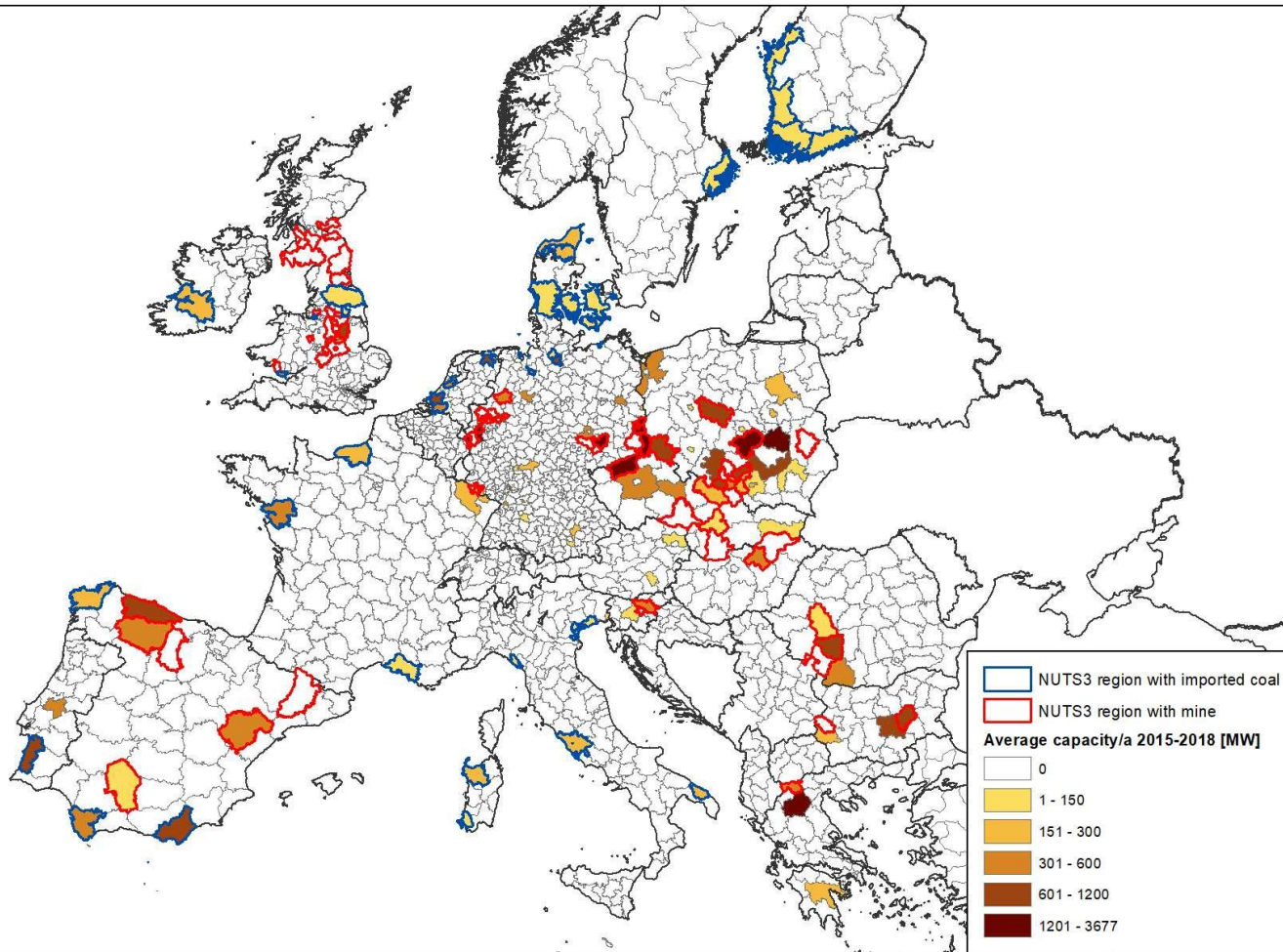
- **117 inland coal regions = 45,8GWh**
- **37 import-based coal regions = 11,8GWh (stand-alone power plants)**
- **Inland coal regions: based on lignite mining, vertically integrated, in Eastern countries**

Identification and segmentation of coal regions

The segmentation approach facilitates the selection and evaluation of segment-specific tools



Source of supply, fuel type and presence of mining



Further segmentation is needed to identify differences between col regions

Western coal regions

- More **stand-alone** coal power plants
- More coal **import**
- Mainly **hard-coal** sources, lignite is less significant
- Affected **surface area** (of currently operating mining)

Eastern coal regions

- more **significant mining assets, costs, jobs** (volume, affected area, direct&indirect jobs, liabilities);
- more **lignite electricity** production (diff. costs);
- **less coal import**
- **vertically integrated coal companies**
- **additional income** sources
- **residential heating**

Coal specific indicators

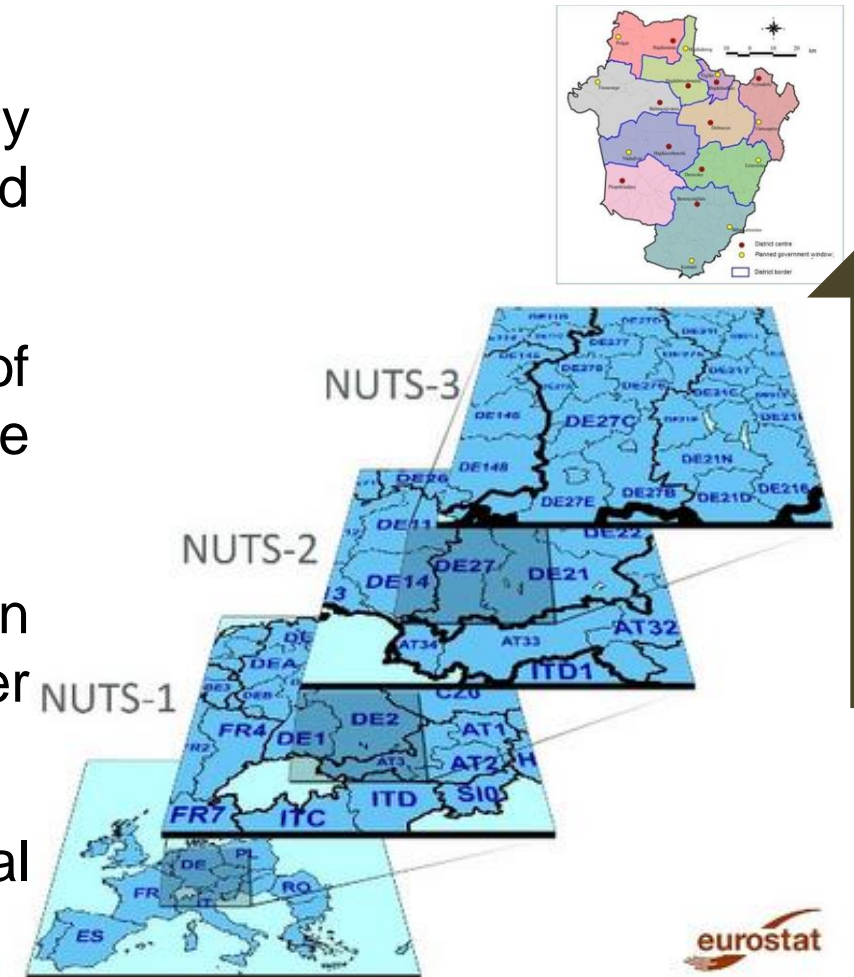
- Mine productivity, mining costs
- Level of vertical integration, ownership;
- Businesses interconnected with the coal sector's supply chains (service providers and recipients, suppliers, flow of materials etc.)
- Additional revenues streams from other services and products

Socio-economic and environmental indicators

- Workforce classified by age, education, experience
- Other sectors' absorption capacity of coal related jobs,
- Current industry tax paid by coal industry
- Level of residential lignite based heating – energy poverty
- Renewable energy potential (affected area, depth, slope)

Conclusions

- NUTS-3 level classification provides more comprehensive comparison of coal regions than NUTS-2
- Better basis for comparative learning and identify synergies based on risks, challenges and opportunities
- Opportunity to identify segments or clusters of regions where segment specific tools can be deployed
- Micro-region (smaller than NUTS-3, bigger than municipality) level analyses is needed to better identify groups of similar coal regions
- New indicators to better understand the role of coal in the regional socio-economic processes



Thank you very much!

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Jiu Valley Transition

Economic Diversification in a fair and sustainable manner

Coal Regions in Transition Platform

working group meeting

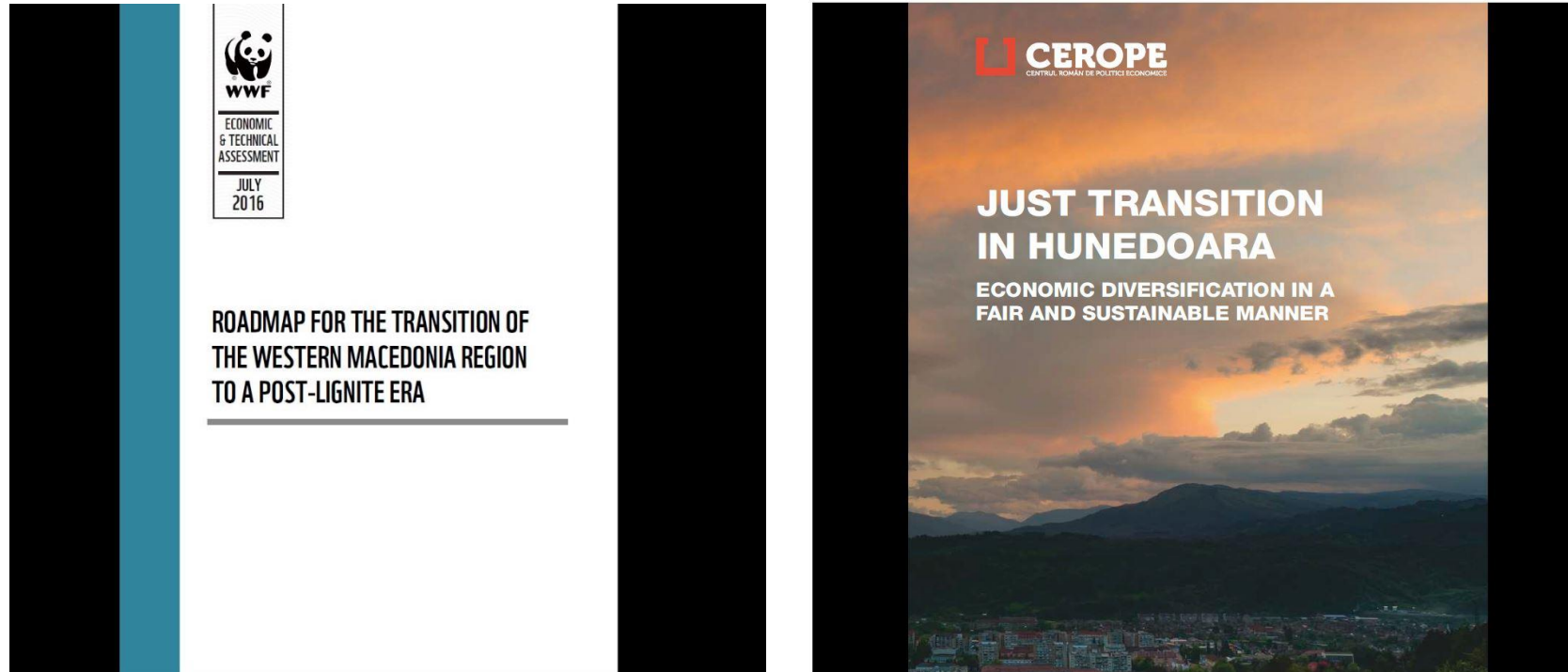
Brussels, 16.10.2019

Jiu Valley



- **Hard coal mono-industrial area**
- **6 cities – 150 000 people**
- **4 active coal mines**
- **1 Power Plant – Paroseni**
- **1 Failed Transition ('90)**

Research study



- **WWF research on Western Macedonia Region**
- **CERPE – Romanian Center for Economic Policies**
- **Macroeconomic Modelling - 5 Scenarios**

Alternative Economic Development Scenarios

	DIRECT IMPACT	TOTAL IMPACT	NET BENEFITS
PRIMARY SECTOR			
• Development of family micro-farms	• 37 mil. euro	• 163 mil. euro	• 90 mil. euro
• Berry Bush Plantations	• 760 jobs	• 1401 jobs	• 760 jobs
SECONDARY SECTOR			
• Renewable Energy Sources	• 122 mil. euro	• 717 mil. euro	• 34 mil. euro
• Increasing Energy Efficiency of Buildings	• 1520 jobs	• 4157 jobs	• 1520 jobs
• Increasing the competitiveness of other industries: food industry, textile, wood processing, furniture, IT			
TERTIARY SECTOR			
• Setting up business support structures	• 6,7 mil. euro	• 39 mil. euro	• 5,2 mil. Euro
• Agrotourism	• 260 jobs	• 434 jobs	• 260 jobs
• Tourism in nature			

- Who's using the JT report results ?

Report Context



- April debate – European, local and National stakeholders
- The Jiu Valley Partnership on Just Transition- July 2019

Report Context



- **START app – 20th of September**
- **Report release in Jiu Valley (“The Miner” Culture Palace) – September 23th**
- **Debate - Opportunities for Just Transition in Jiu Valley – September 30th**



- Jiu Valley grassroots mobilization – 27th of September

Thank you!

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Alexandru Mustață – alexandru.mustata@bankwatch.org



E3G

The German Coal Commission

Lessons learnt for European coal phase out

Rebekka Popp

 @e3g @RebekkaPopp

6th Working Group Meeting of the Platform for Coal Regions in Transition

Brussels, 16 October 2019



E3G

Agenda

- About E3G
- The role of coal in Germany
- The German Coal Commission
- Lessons learnt from the Coal Commission
- Discussion



E3G

About E3G

- E3G is an **independent climate change think tank**
- E3G aims to **accelerate the transition to a climate safe world**
- E3G has offices in London, Brussels, Berlin and Washington D.C. and staff in seven other countries
- **Key areas of activity** include: Just Transition, Climate Diplomacy, Fossil Transition, Sustainable Finance, Climate Security, Future of Europe

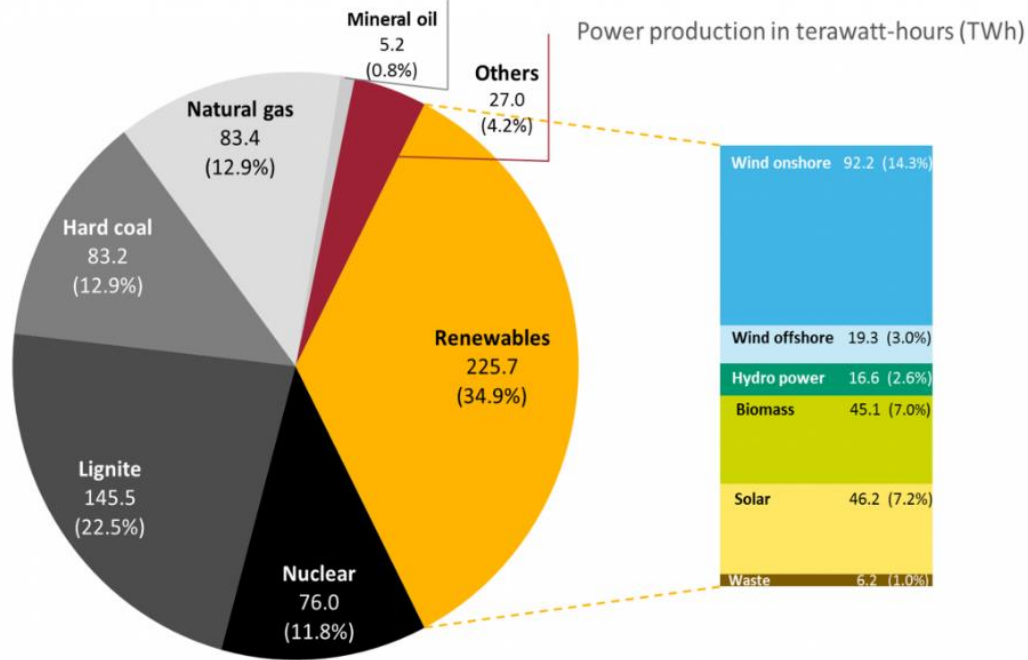


E3G

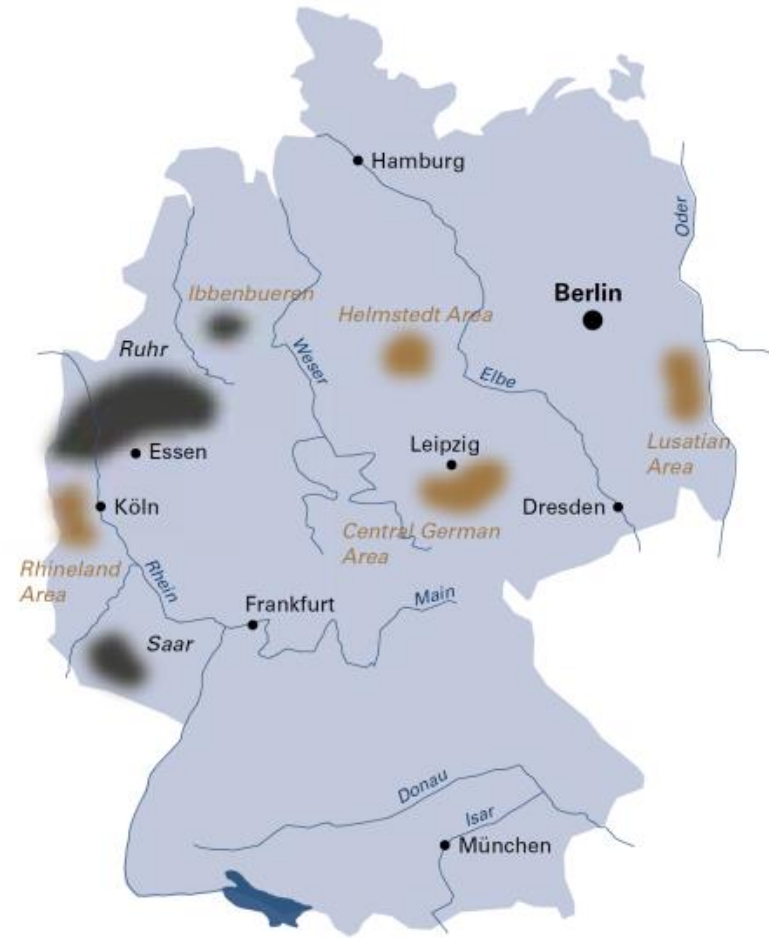
The role of coal in Germany

Share of energy sources in gross German power production in 2018.

Data: AG Energiebilanzen 2019, preliminary.



CC BY SA 4.0



Source: Euracoal



E3G

The German Coal Commission



- Phase-out of coal by 2038 at the latest
- Transition measures in coal regions (€40 billion until 2038)
- Compensation for energy users in case of rising energy prices (€2 billion per year)
- Compensation for utilities (subject to negotiation)

The German Coal Commission – A Role Model for Transformative Change (E3G 2019)?



- Multi-stakeholder formats are useful in countries in which phase out debates are complex and contentious
- Negotiating climate policy, phase out pathway and end date as well as transition measures within one mandate makes consensus difficult
- Multi-stakeholder formats need a strong regional component with regional development strategies playing an important role
- To support a Just Transition in regions domestic and European finance flows need to be aligned with climate goals



E3G

Thank you!

www.e3g.org

rebekka.popp@e3g.org

 @RebekkaPopp @e3g



E3G

About E3G

E3G is an independent climate change think tank accelerating the transition to a climate safe world.

E3G builds cross-sectoral coalitions to achieve carefully defined outcomes, chosen for their capacity to leverage change. E3G works closely with like-minded partners in government, politics, business, civil society, science, the media, public interest foundations and elsewhere. In 2018, for the third year running, E3G was ranked the fifth most globally influential environmental think tank.

More information is available at www.e3g.org