



Ministry of Environment and Energy



Region of Western Macedonia



**Coal Regions in Transition Platform
Working Group Meetings and High-Level Dialogue on
Financing and Investments**

Brussels, Belgium – 26 February 2018



**Coal Regions
in Transition
Platform**

Regional Strategy towards to the transition process of Western Macedonia

Working Team for Coal Platform of Western Macedonia

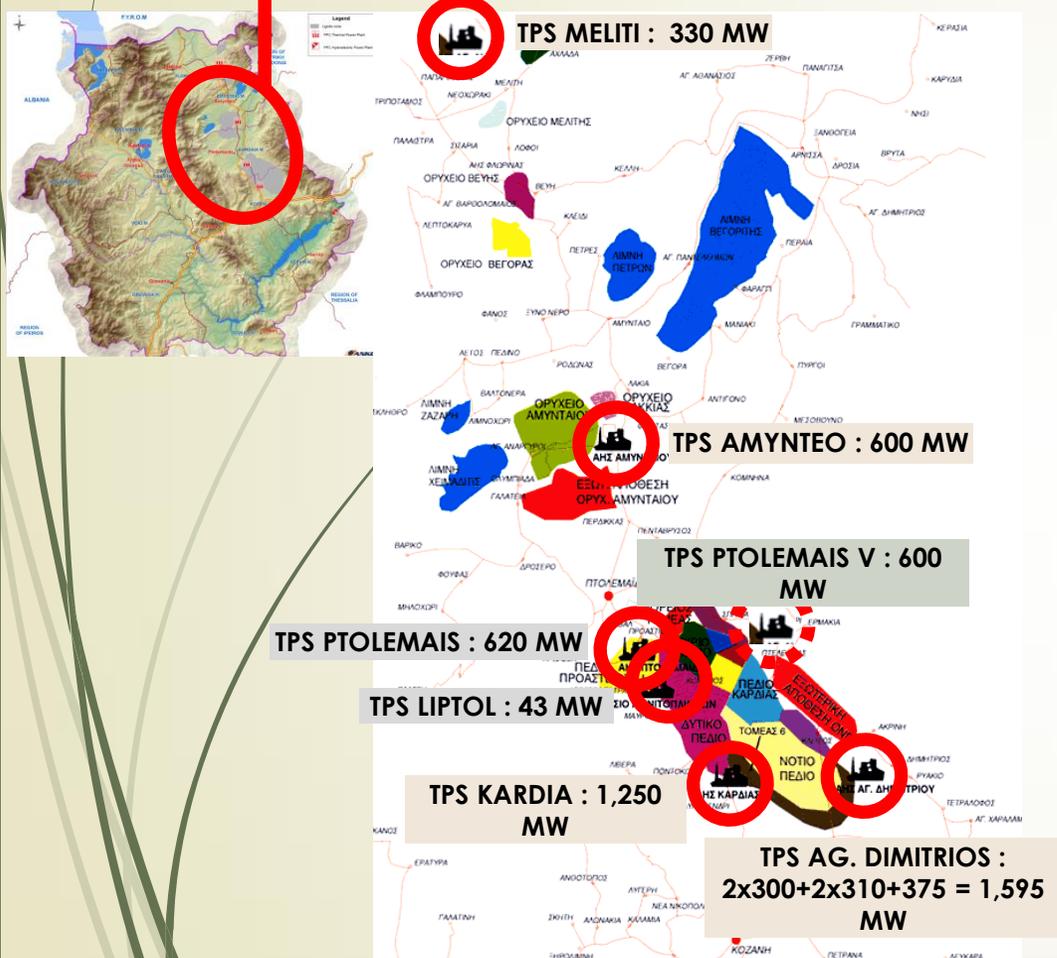
Western Macedonia regional profile



- Western Macedonia is **the only landlocked** Region in Greece
- The Region's **area covers** 9,451 km² (7.16% of the total country)
- The **population** arises to 283,689 (data 2011) inh. (2.62% of the total country)
- **Unemployment rate:** 27.3% (3rd Sem. 2017)
- **GDP per capita** (in PPS): 18,200 € (2015) 63% of the EU-28 average
- **Productive structure:**
 - ✓ Primary sector (6.7%),
 - ✓ Energy-mining (40.9%),
 - ✓ Processing (4.8%),
 - ✓ Construction (2.2%),
 - ✓ Services (45.5%) [2015]

Lignite industry in Western Macedonia

Lignite exploitation



Lignite production and utilization – main features

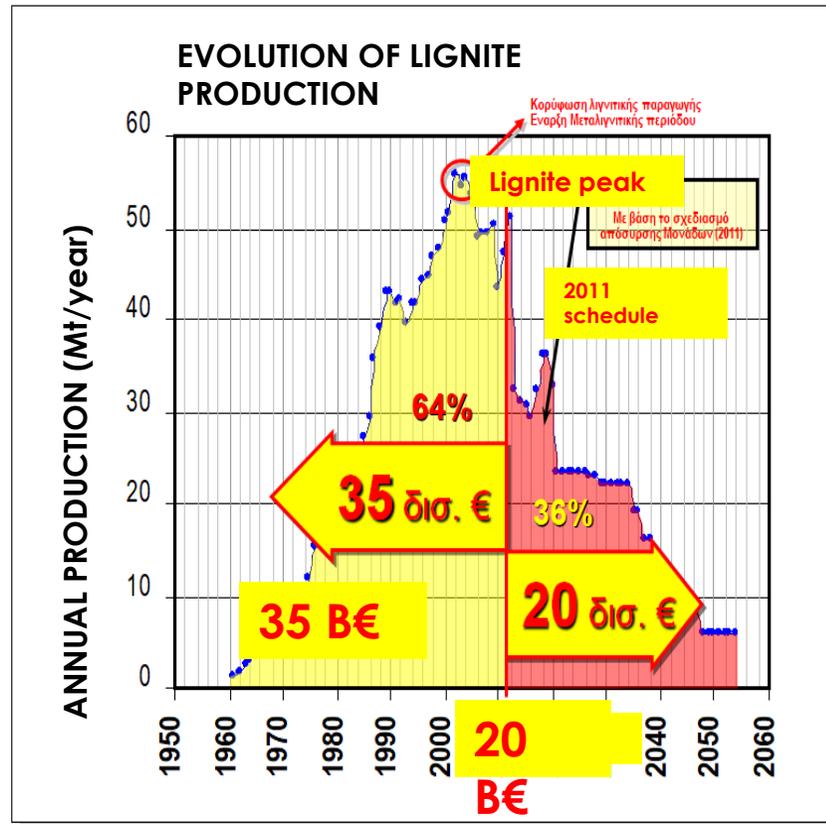
- Supplies electricity to Greek interconnected system since 1960, acting for several decades as the Greek energy pillar of economic growth due to the electricity low cost and utilisation of domestic energy sources
- Lignite activity includes open-cast mines of 160 thousand acres total area



- 4 lignite fired power plants of 12 units are nowadays in operation representing the 40% of thermal units and 20% of the total installed net capacity of the interconnected system in Greece.
- About 100.000 citizens of Kozani, Ptolemaida and Amynteo are heated by district heating systems from lignite power plants

IN OPERATION
 CLOSED
 UNDER
 CONSTRUCTION

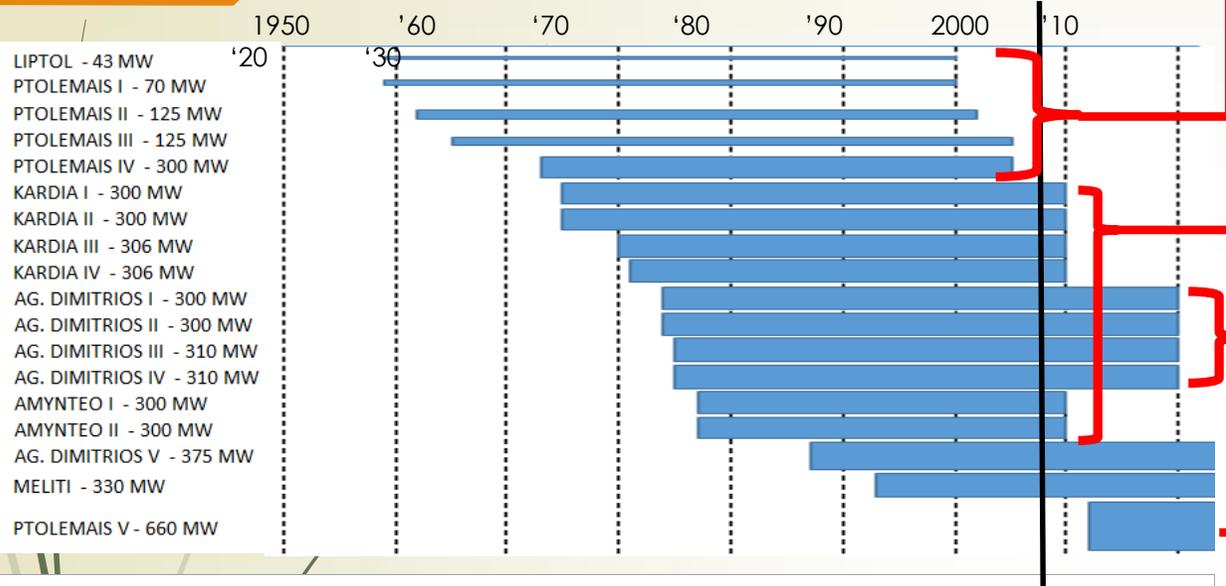
Western Macedonia is confronting radical changes on its profile (1/3)



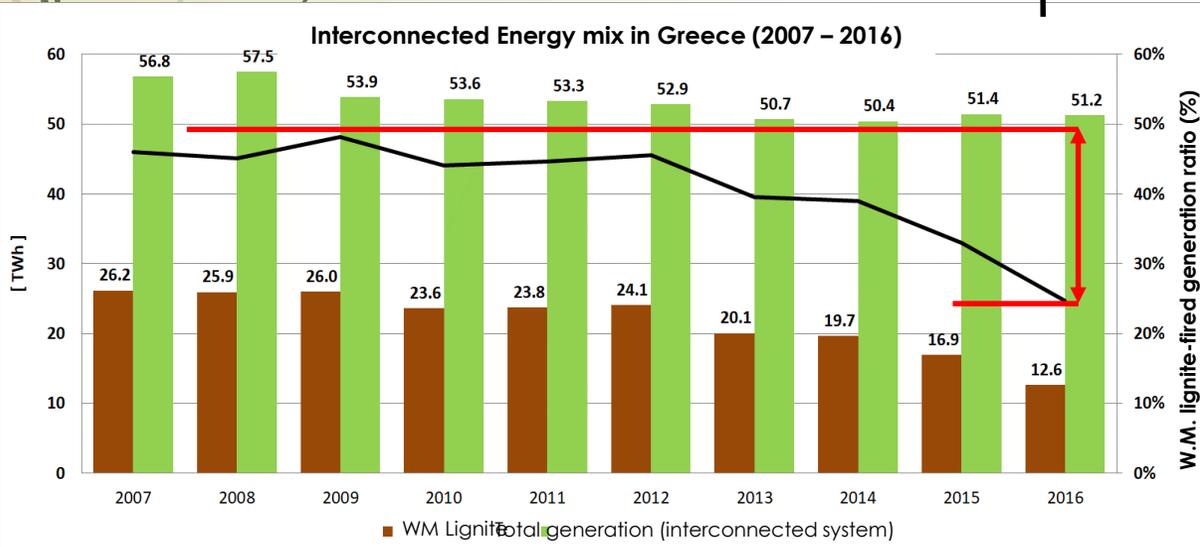
Local economy structure information

- Regional economic development has one-dimensional characteristics, focused on the energy sector, with all the traits of pathogenesis established through the years. Traditional professional skills have been substantially confined. A high negative environmental impact was caused, with strong pressure both on human and natural environment.
- At the peak of lignite production, more than 34% of the Gross Added Value of the Region of Western Macedonia, about € 1.5 billion, came from the mining and energy sector.
- 22.5 thousand of direct, indirect or inductive jobs are related to the power production industry (2009).
- For each permanent staff position in the lignite mining and power production, 2.6 positions are created and maintained in the local labor market (2013)
- The current unemployment rate is approximately 30% and the unemployment rate among young people is the highest at European Union level.

Western Macedonia is confronting radical changes on its profile (2/3)

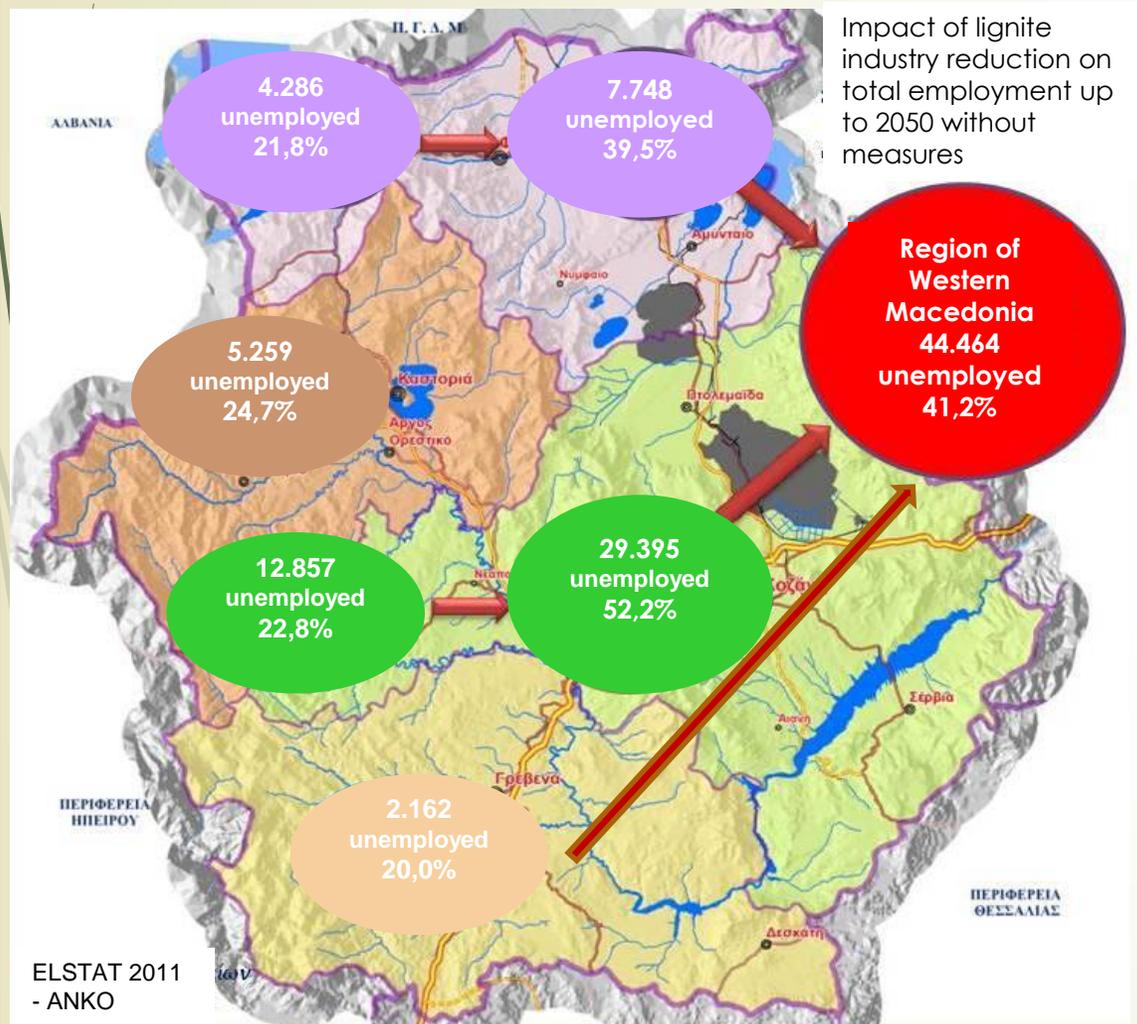


- A first phase of local lignite industry shrinkage occurred during the period 2010 – 2015, where 663 MW of the oldest lignite-fired units ceased operation. In parallel lignite electricity production has lost its significant position in the Greek energy mix.
- A second, more severe wave of lignite sector reduction will occur in 2020, due to the 6 lignite-fired units planned operation termination dealing with 1812 MW capacity, according to the existing environmental limitations
- By 2030, 4 units of 1220 MW capacity will reach their lifetime, leaving only 15% of the initial lignite capacity in operation in the region.
- A new lignite power plant of 660 MW will start its operation by 2022



According to the proposed National Strategy for Adaptation Measures to Climate Change, Ministry of Energy (2015), where regions vulnerability was examined in terms of economic activity sectors, it was estimated that the local negative impact could possibly be fourfold compared to other Greek regions, mainly derived from the reduction of lignite mining activity.

Western Macedonia is confronting radical changes on its profile (3/3)



Local economy structure information

- The Western Macedonia Region production model based on conditions of one-dimensional growth presents a limited range of flexibility in terms of its sectoral structure
- The system is extremely vulnerable either to the declining economic activities or even more to situations of general economic crisis. For example, decommissioning of 300 MW capacity would deprive the local economy by 83 million EUR on annual basis.
- The radical restructuring of the regional economy is of major importance, on the one hand, in areas and sectors that capitalize the existing human resources experience in the energy sector and on new activities that set high income and employment multipliers to achieve the goal of combating high existing and emerging unemployment and safeguarding social cohesion.

SWOT analysis of Western Macedonia Region

Advantages

- Important geographical position regarding the country's borders to Western Balkan countries
- Characterization of the Region as Energy Centre of Greece
- Significant and skilled human resources on energy sector and fur/leather production
- Valuable tourist resources, natural ecosystems and a rich cultural heritage.
- Primary sector produces quality products (e.g. wines, fruits, dairy products) with the potential to improve their added value.
- Operation of University and Research Institutions

Opportunities

- Empowerment of policies towards to new economic activities (green economy, use of RES, social economy, agriculture of high productivity etc.)
- Possibilities of reuse of out of operation lignite industry installations, integrating them into the new economic and social reality.
- Development of economic relations with the Balkan countries and penetration in the Balkan market.
- Increase of demand for quality tourism services based on natural environment, local production and culture.

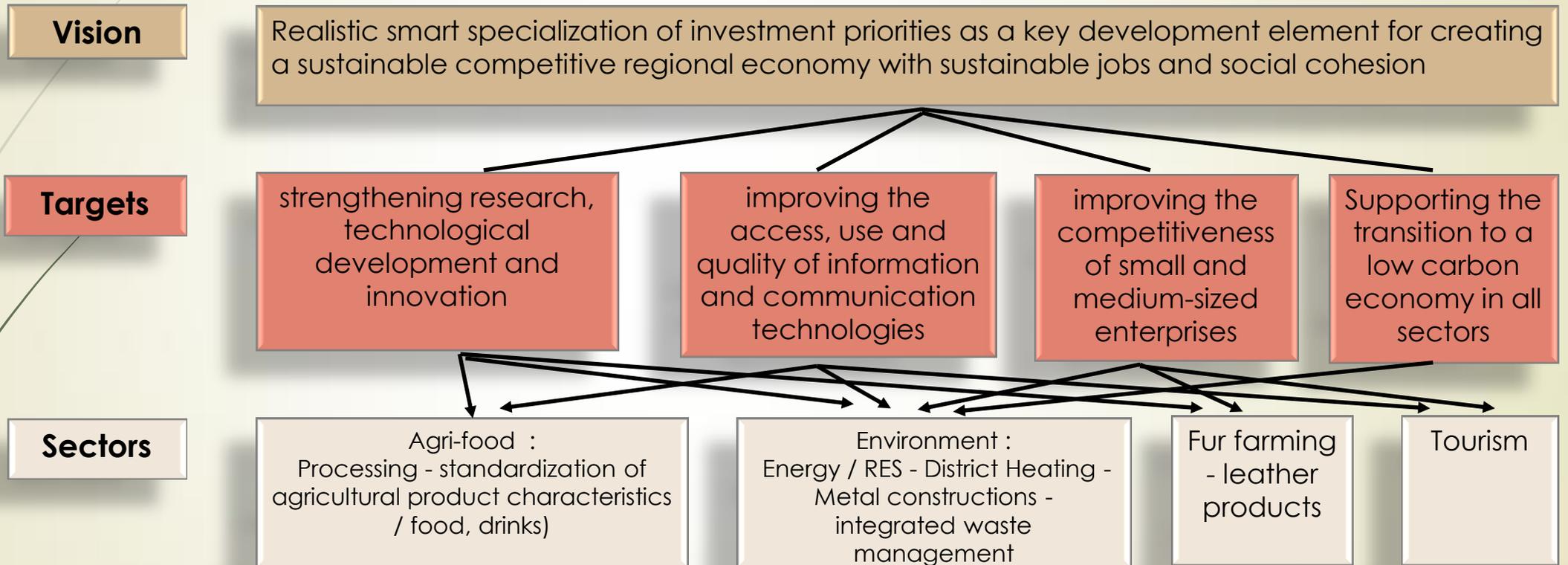
Weaknesses

- Natural and anthropogenic environment burden on the Kozani - Ptolemaida - Amynteo - Florina axis.
- Local economy's high dependence on the lignite industry activities and fur industry, against other economic activities.
- Low development of innovation and R&D by local SMEs
- Country's highest unemployment rate, especially in ages of 18-25.
- Limited spatial development and concentration of business activities, mainly along the energy axis.
- Luck of foreign investments

Threats

- The continuation of the environmental degradation of the area and in compliance with European and national commitments regarding the reduction of carbon dioxide pollutants.
- Conservation of the negative economic climate, which guides to lack of liquidity and low investment rates
- Conservation of high unemployment rates could guide to brain drain
- Delay of adopting innovations and new technologies by SMEs could guide to loss of markets in Greece and abroad

Regional Targets (NSRF 2014-2020, RIS3)



Concluding we are starting with...



- High concentration of specialized human resources
 - Industrial culture
 - Important energy and environmental infrastructure
 - Diversification of energy resources
 - Primary sector with perspective
 - Academic and research structures
 - Strategic geographic position in S.E. Balkan area
- One – dimensional characteristics of labor force
 - Scaling decrease of lignite production
 - Ongoing decommissioning of lignite units
 - High rates of unemployment
 - Energy poverty
 - Low diversification of productive model
 - Low innovation rates

Building the bridge towards the greening of our industrial culture



Strategic Axes

The regional strategy for the transition should fulfil the following specified three main axes:

- Strengthening of business activities and enrichment of the region's productive baseline with innovative and competitive activities.
- Capacity building and human resource skills development in areas directly linked to the region's potentially productive environment.
- Protection, promotion and enhancement of the natural and human environment and development of favourable living conditions.

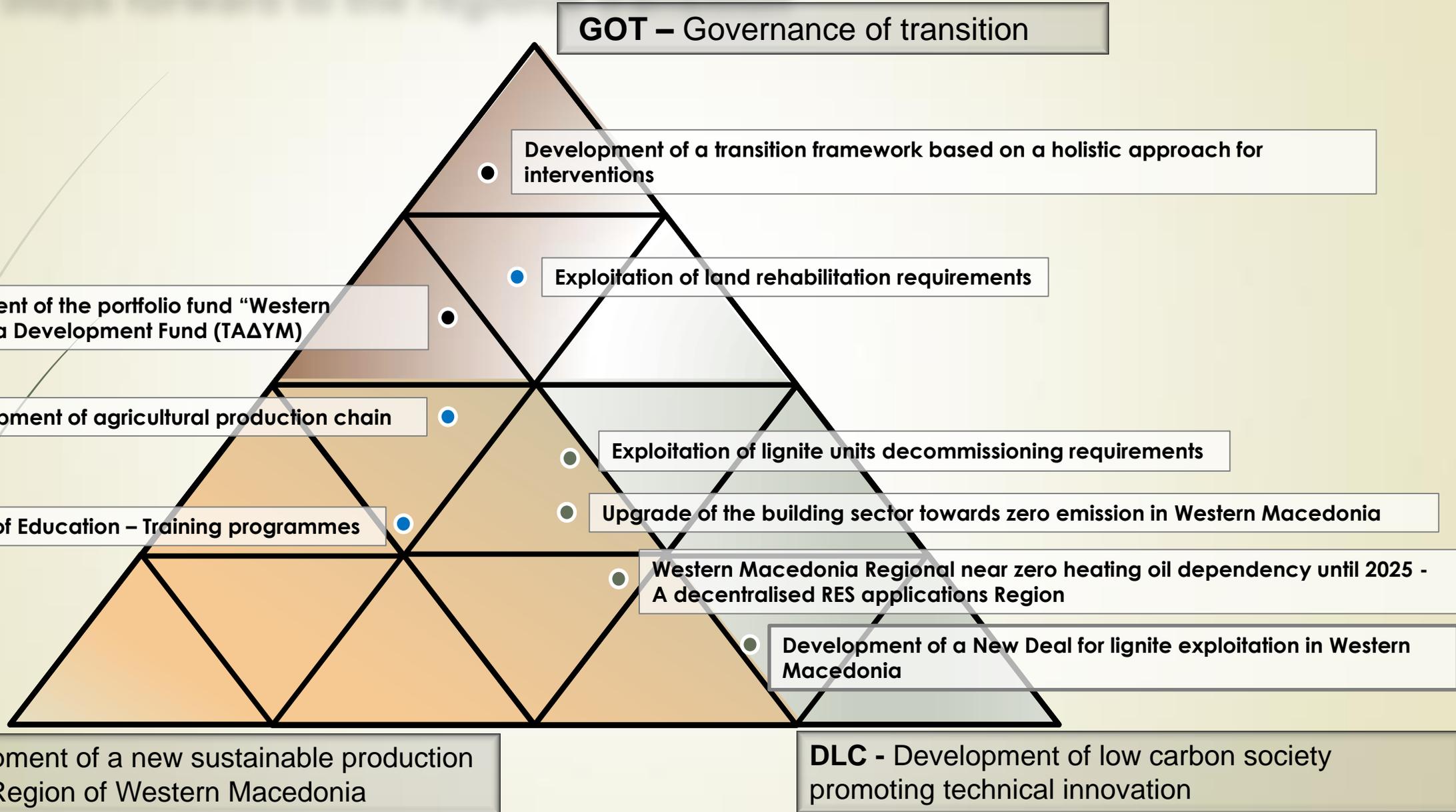
From Regional Strategic Axes to Coal Platform Thematic Priorities

Taking into account the strategic planning required for the transition as well as the goals to be achieved for a viable new regional economy structure, the proposed projects can be divided in three main Thematic Priorities contributing in the social and / or technical innovation priorities of the Coal Platform:

- Governance of transition (GOT)
- Development of a new sustainable production model for the Region of Western Macedonia (DPM)
- Development of low carbon society promoting technical innovation (DLC)

The projects under consideration should be assessed rated with respect to their necessity and added value, their scale and funding opportunities, their impact to the local economy and employment as well as the possibilities to act as “phare projects” to other regions toward their transition to lower carbon emissions economy.

Steps forward to the regional transition





Concluding

- The transition of Western Macedonia to a low carbon economy is a one-way and strategic choice of national priority
- This requirement created conditions for understanding the problem and complementing the initiatives between the central government, the regional authority and the municipalities involved
- The long-term only dependence of the regional economy on the lignite industry has created an exceptionally vulnerable productive structure that dictates a gradual and careful development of interventions in terms of realistic vision
- In this direction, technical support through the coal Regions in transition platform emerges more than necessary

Design and implementation of Regional – National targets / actions answering the following critical question **“How we will proceed with the lignite utilization and how after the lignite era ?”**

Coal Platform of Western Macedonia Leadership



Theodoros KARYPIDIS, Governor of Western Macedonia

Eleftherios IOANNIDIS, Mayor of Kozani

Savvas ZAMANIDIS, Mayor of Eordaia – President of the Network of Energy Production Municipalities

Konstantinos THEODORIDIS, Mayor of Amyntaio

Ioannis VOSKOPOULOS, Mayor of Florina - President of Municipalities of Western Macedonia

Working Team for Coal Platform of Western Macedonia (in alphabetic order)

Dionysios GIANNAKOPOULOS

Researcher B, Centre of Research and Technology Hellas (CERTH/CPERI), Dr. Mechanical Engineer

Evangelos KARLOPOULOS

Specific Technical Scientist, Centre of Research and Technology Hellas (CERTH/CPERI), Chemical Engineer MSc

Charalambos KIOURTSIDIS

Head of Regional Operational Program of Western Macedonia Management Unit.

Dimitrios MAVROMATIDIS

Director of Regional Development Fund of Western Macedonia, President of Technical Chamber of Greece/Dept Western Macedonia

Stavros RAPTOPOULOS

Counsellor of the Ministry of Environment and Energy

Anastasios SIDIROPOULOS

Director of Programmes Department, Regional Development Agency of Western Macedonia (ANKO), Economist Phd Cad.

Eleftherios TOPALOGLOU

Director of the Regional Union of Municipalities in Western Macedonia, Dr. Political Scientist

Antonios TOYRLIDAKIS

Rector of the University of Western Macedonia, Dr. Mechanical Engineer

Building our common future upon Coal Platform Networking...



Thank for your attention!

Dimitrios MAVROMATIDIS

Coordinator of the Coal Platform
Working Team of Western Macedonia

Mavromatidis@gmail.com