



Welcome

# Transition Strategy I: The cases of Slovakia and Greece

## Platform for Coal Regions in Transition

#CoalRegionsEU

Energy

# Transition strategy – the case of Upper Nitra

**5th Working Group of the Platform  
for Coal Regions in Transition**  
16 July 2019

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PwC Slovakia



# Agenda



**The process** – How the strategy was developed



**The analysis** – Where we started from



**The design** – Vision and action plan for Upper Nitra



**The resources** – Financing options



**The consultations** – Participation of stakeholders



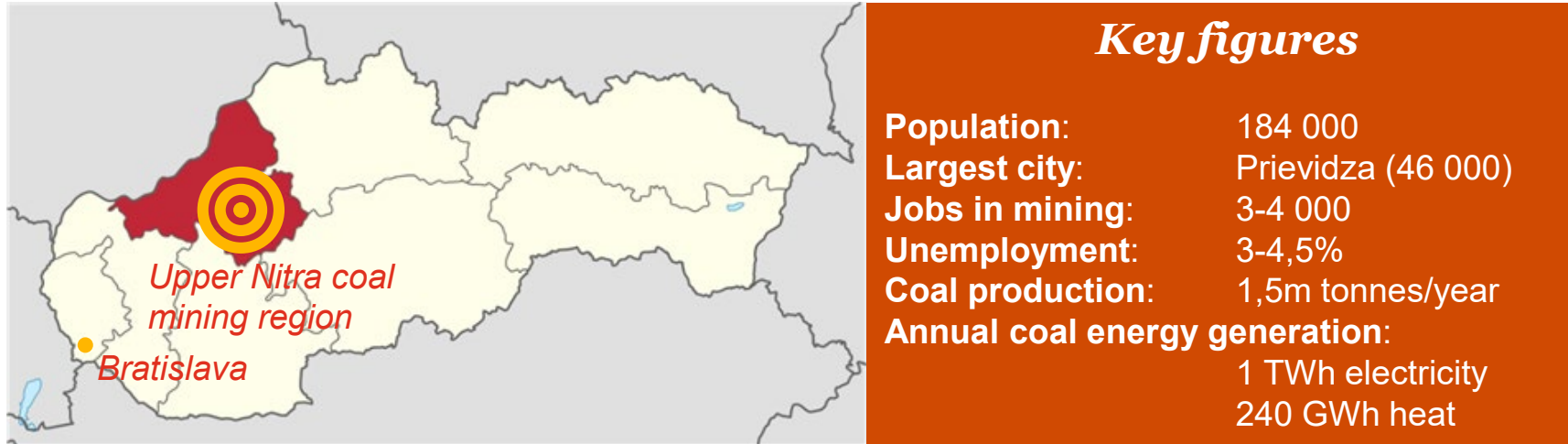
**The projects** – What can be done



**Discussion, Q&A**

# Upper Nitra coal mining region in a nutshell

Introduction of the region and the challenge of the region in the process of coal transition



## ***Problem statement:***

*How to ensure a **smooth transition** of the region from a coal economy, to **take care of employees** of the mining industry, **create new opportunities** in the region, diversify the economy, **safely decommission** the mining operations and to **improve environment** and **quality of life** in the region?*

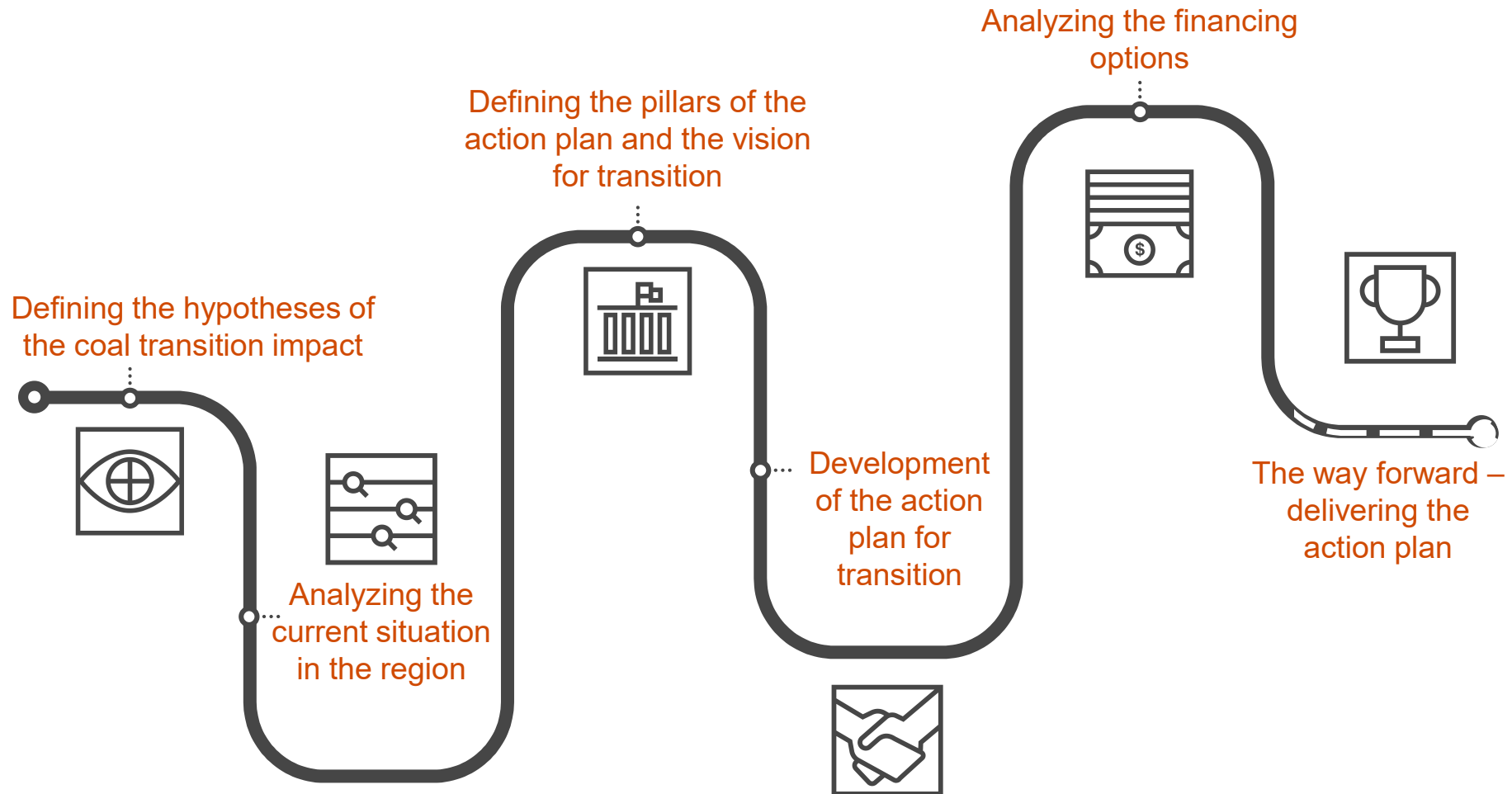
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*The process*  
How the strategy  
was developed



# Overall roadmap of the project

From hypotheses and analysis of the current state to the definition of the vision for the region and development of the actions for the transition from coal



# 2

## *The analysis*






Where we  
started from





# State of play – where is the region today

What hypotheses were analysed in the beginning of the project

Hypothesis	Confirmed?
 The phase-out of coal will significantly increase the unemployment in the region	No
 Local economy lacks diversification and focus on higher added value	Partially
 The region needs better infrastructure and accessibility	Yes
 Environment and health of the population are impacted by decades of coal mining	Yes
 The governance of the transition process is fragmented with many stakeholders with a diverse range of interests	Yes





45%

Up to 45% of employees of the mines will be above 55 years old in 2023

## Unemployment will not be the biggest issue

- Up to 45% of employees of the mines will be above 55 years old in 2023, potentially eligible for early retirement
- The phase out of coal will be spread across several years
- Current unemployment rates are 4,5% in Prievidza district and 3% in Partizánske district
- The bigger issue is the ageing of the population, which is faster than Slovak average
- The prognosis by 2040 says that there will be 1/3 of population above 64 years old in the region
- The region has negative migration, lost 5% of population since 1998 and the trend is expected to continue

“

9 000

jobs in the region  
cumulatively are in various  
sectors at larger employers

## Local economy is already diversified

- 9 000 jobs in the region cumulatively are in various sectors at larger employers, including automotive, chemical, rubber, footwear or machinery industries
- But the value added in the industry in the region is below Slovak average
- The region is also below Slovak average in terms of activity of SMEs
- Also, the absorption of EU funds is below average and mainly driven by public sector

““

1 hour

is the average time to reach  
motorway network from the  
region

## There is a gap in investments into infrastructure

- 1 hour is the average time to reach motorway network from the region (40 minutes to 1 hour 20 minutes depending on the direction)
- I. class roads are in a bad condition – 28% of roads in Prievidza district, 46% in Partizánske district and 59% in Trenčín district are in unsatisfactory or critical condition
- There is an insufficient integration of public transportation and alternative modes of transport
- Rail connections to Trenčín and Bratislava cannot compete with individual transportation or buses



55%

of the population in the region live in areas with impaired environment

## The region is polluted, with impact on health

- 55% of the population in the region live in areas with impaired environment
- The region is among the heaviest producers of pollutants in Slovakia (particulate matter, NOx, SO2)
- 45% of water in the region of Prievidza and 81% in Nováky are in the 3<sup>rd</sup> class of water quality (on a 1 to 5 scale)
- The invalidity rate in Prievidza district is higher by 46% compared to Slovak average (9,1% vs. 13,3%)
- Average life expectancy in the region is however comparable to the Slovak average



~50

The number of stakeholders involved in the transition process

## Governance structure is needed in the transition process

- There are many stakeholders in the transition process with often contradicting interests
- Approx. 50 stakeholders already involved in the project through interviews, discussions, workshops, etc.
- Stakeholders involve public sector entities at central, regional and municipal level, large businesses and SMEs, NGOs, associations, etc.
- In order to successfully implement the action plan, and strong governance structure will be needed

# 3

## *The design*

Vision and action  
plan for Upper  
Nitra



# Vision for the transition of Upper Nitra

How the identified issues and challenges of the transition translate into the vision for the transition of the region

## Challenges

Unemployment

Economy

Infrastructure

Environment

Health

Demography

Energy

Governance

## Actions

Take care of retiring miners

Help miners on the job market

Create opportunities for young generation

Support entrepreneurship

Support R&D and innovation

Improve accessibility of the region

Improve mobility of people

Solve environmental burdens

Revitalise impacted mining areas

Promote clean environment

Improve health services and social care

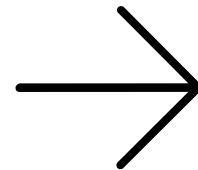
Increase attractiveness of the region

Create smart cities

Build on the energy tradition in the region

Establish governance structure for the transition

Adjust the education in the region





# Vision for the transformation of Upper Nitra

What the region should become after the coal phase out

Help miners on the job market  
Support entrepreneurship  
Adjust the education in the region  
Create opportunities for young generation  
Support R&D and innovation  
Improve health services and social care  
Increase attractiveness of the region  
Create smart cities

Upper Nitra will become an **attractive** and **self-sustainable** region where **economy** will be developed in **symbiosis** with clean **environment** and well **interconnected** with other economic centers

Take care of retiring miners  
Build on the energy tradition in the region  
Revitalise impacted mining areas  
Promote clean environment  
Establish governance structure for the transition  
Improve mobility of people  
Solve environmental burdens  
Improve accessibility of the region

# Pillars of the Action plan

How to deliver the vision for the transition of Upper Nitra

## Vision

Upper Nitra will become an **attractive** and **self-sustainable** region where **economy** will be developed in **symbiosis** with clean **environment** and well **interconnected** with other economic centers

## 4 pillars of Action plan



**Mobility and  
interconnection**



**Economy,  
entrepreneurship  
and innovation**



**Sustainable  
environment**



**Quality of life and  
social infrastructure**

# Mobility and interconnection

## Priorities and actions



### **Mobility and interconnection**

#### **Development of sustainable and alternative forms of mobility**

Development of public transportation, static transformation and integrated forms of mobility

Development of pedestrian, bicycle and alternative forms of mobility

Development of electro-mobility

#### **Improvement of the quality of local road infrastructure**

Development and reconstructions of II. and III. class roads

Development of local roads and interconnections

#### **Improvement of the accessibility to motorway network**

Development of expressways in the region

Development and reconstructions of I. class roads

#### **Development of other infrastructure**

Improvement of the utilisation of rail transportation

Development of air transport infrastructure

Development of high-speed telecommunication networks

# Economy, entrepreneurship and innovation

## Priorities and actions



### **Economy, entrepreneurship and innovation**

#### **Support of innovations, research and development**

Support of innovations, research and development in the region's specialisation and new economic sectors

Support of innovations, research and development in sustainable energy sector

#### **Support of the new sustainable job creation**

Development of direct investments into new diversified and sustainable job creation

Development of investments to create new jobs in brownfields

#### **Support for the development of small and medium businesses**

Support for starting small and medium businesses

Support for the development of small and medium businesses

#### **Support for the development of sustainable agriculture and circular economy**

Development of agriculture businesses and organic agriculture

Development of other sectors of circular economy

#### **Support for the development of tourism**

Development of tourism building on the tradition of the region

Development of tourism infrastructure

# Sustainable environment

## Priorities and actions



### **Sustainable environment**

#### **Elimination of the environmental burdens**

Solving the environmental burdens and impacts caused by mining activities

Solving the environmental burdens and impacts caused by other activities

#### **Development of sustainable energy**

Development of sustainable heat generation and supply in the region

Development of low carbon energy in the region

Support for the energy efficiency in the region

Support for smart solutions in energy sector in the region

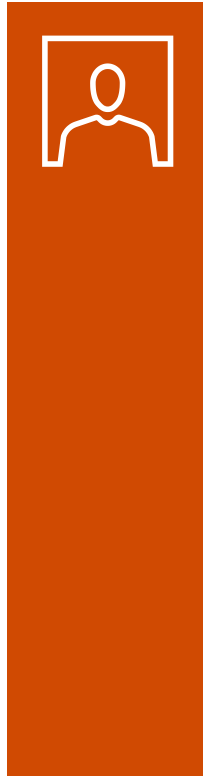
#### **Improvement of environment**

Support of the investments into the sustainable waste and water management

Support for the conversion of the environmentally affected areas

# Quality of life and social infrastructure

## Priorities and actions



### Quality of life and social infrastructure

#### Improvement of healthcare, medical-spa and social services

Development of healthcare and medical-spa services in relation to the impacts of the mining activity

Development of the social care services in relation to the coal mining phase out

#### Improvement of the quality of life and social revitalisation

Development of the culture in the region

Development of free time, sport and recreation activities in the region

Development of the quality public services to citizens

Support of the housing in the region

#### Improvement of the education and qualification of the workforce

Support of the vocational education and dual education in the region

Support of higher education in the region

Support of the out-of-school education, requalifications and support of talents

#### Improvement of the social care for vulnerable groups

Support of the social and legal care for vulnerable groups impacted by the coal mining phase out

Support on the job market for vulnerable groups impacted by the coal mining phase out

# 4

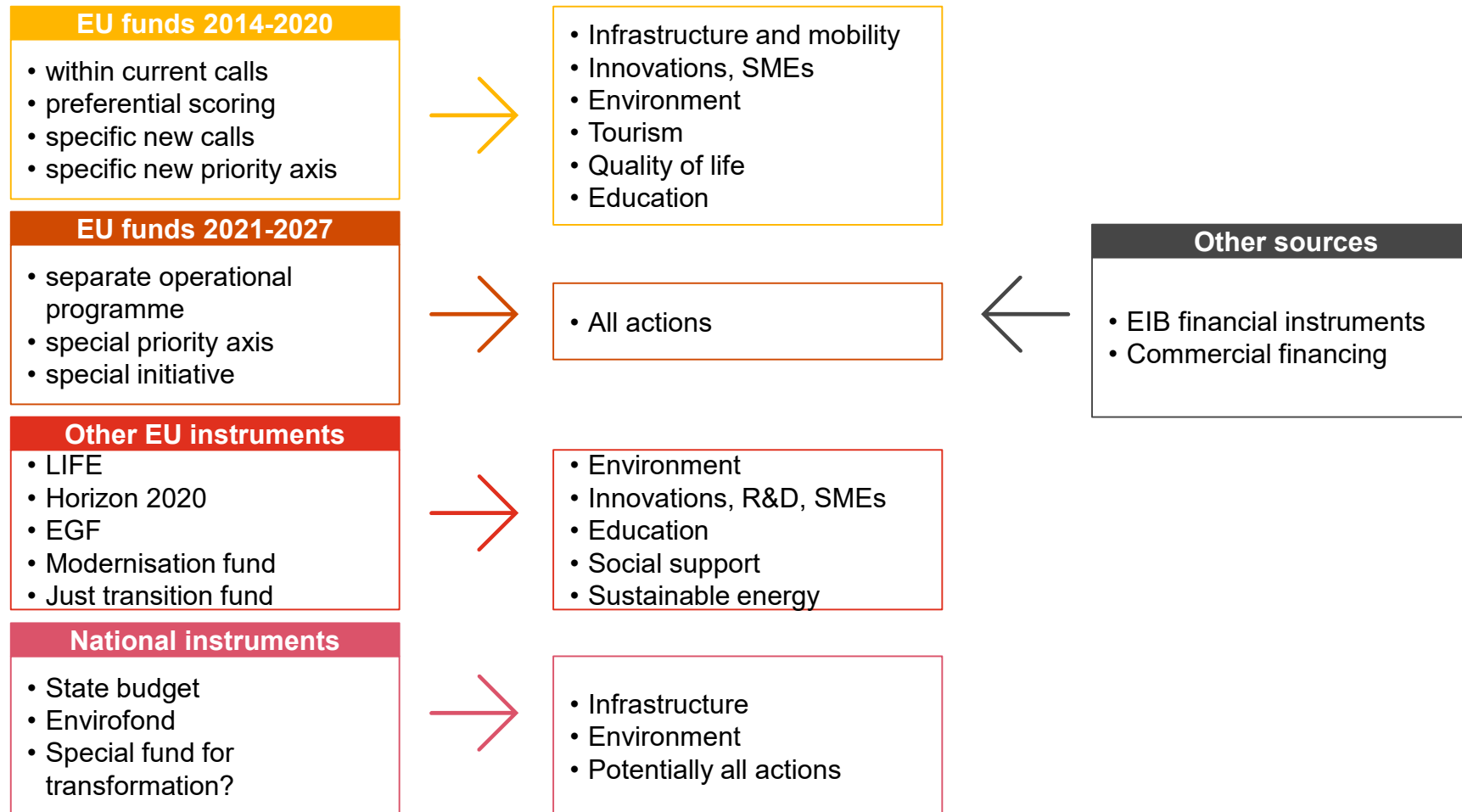
## *The resources* Financing options





# Potential financing options

## How to finance the implementation of the Action plan



# 5

## *The consultations*

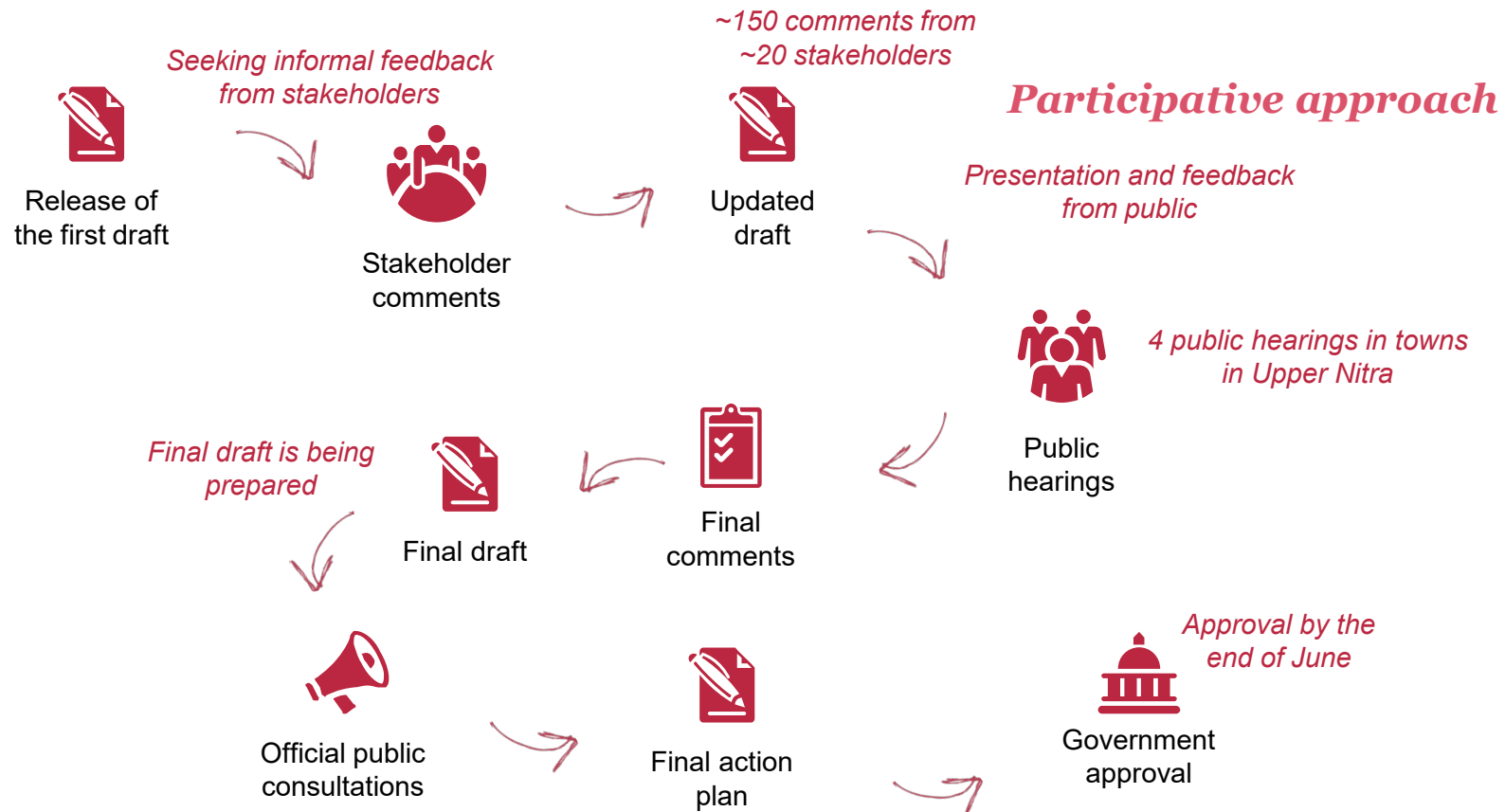
Participation of stakeholders



# Consultation process

There are several stages of consultations of the Action plan

## Consultation process and update of action plan is done in several stages



# 6

## *The projects*

What can be  
done



# Key highlights from potential projects

As part of the development of the transition vision and action plan, list of potential projects was created by directly approaching various stakeholders

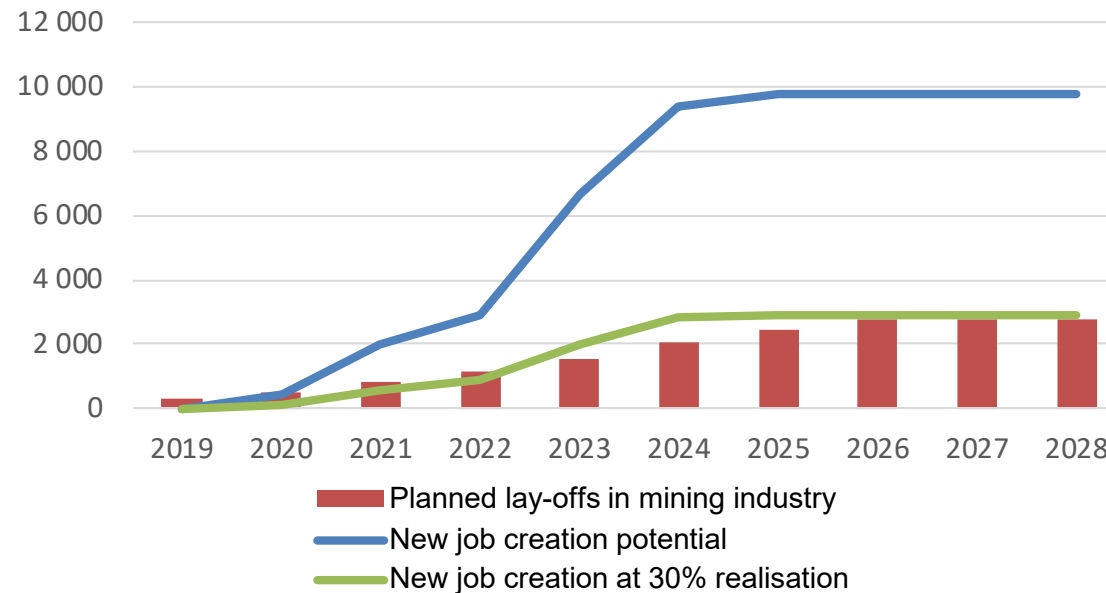
**~215**  
Potential projects

**~10k**  
Potential new jobs

**~3 bn**  
EUR of investments

If only **30%** of the potential projects will be realised, they will cumulatively replace the jobs lost in the mining industry

Potential of new jobs creation for next 10 years



# Examples from indicative list of projects

Employment / Diversification of mining company

## Project details:



### *Project name*

Innovative production of railway carriage chassis



### *Project owner*

HBP (mining company)



### *Project description*

New production of railway carriage chassis utilizing modern and innovative approaches and building on the experience and infrastructure of the existing engineering and machinery division of HBP in cooperation with Tatravagonka (railway carriage producer) and universities.

## *Key project parameters*

<b>Jobs created</b>	Up to 600
<b>Start of the project</b>	2020
<b>Project duration</b>	24 months
<b>Indicative budget</b>	100m EUR




# Examples from indicative list of projects

## Employment / Research and innovation

### Project details:

 **Project name**  
Automotive R&D centre

 **Project owner**  
Brose

 **Project description**  
Establishing of the R&D and testing centre for automotive industry, focused on automotive electronics testing, shaker laboratory, testing of compression pressures and optical measurement centre with the aim to transfer new know-how into the Prievidza plant.

### Key project parameters

<b>Jobs created</b>	Up to 1000 (incl. R&D)
<b>Start of the project</b>	01/2023
<b>Project duration</b>	18 months
<b>Indicative budget</b>	125m EUR





# Examples from indicative list of projects

Employment / Brownfield revitalisation

## Project details:



### *Project name*

ENO Novaky brownfield revitalisation



### *Project owner*

Slovenske elektrarne



### *Project description*

Re-development of part of the existing brownfield industrial zone of ENO Novaky to new industrial park, utilizing the existing robust infrastructure in the park, including roads, buildings, electricity, water, rail and IT infrastructure. Part of the park can still be utilized for future central district heating solution.

## *Key project parameters*

<b>Jobs created</b>	20 (revitalisation only)
<b>Start of the project</b>	2021
<b>Project duration</b>	60 months
<b>Indicative budget</b>	100m EUR



# Examples from indicative list of projects

Employment / Research and development / Mining site re-development

## Project details:



### *Project name*

Research centre for underground technologies



### *Project owner*

GA Drilling + HBP



### *Project description*

Development of research centre for underground technologies (mining, drilling, extraction) using plasma drilling technology, utilizing the engineering capacities and capabilities of HBP.

## *Key project parameters*

<b>Jobs created</b>	40 (mostly R&D)
<b>Start of the project</b>	01/2020
<b>Project duration</b>	24 months
<b>Indicative budget</b>	2.5m EUR (later up to 32m EUR)



# Examples from indicative list of projects

Quality of life / Education

## Project details:



### *Project name*

Horna Nitra Education Centre



### *Project owner*

Trencin Self-governing region



### *Project description*

Establishing an Education centre for Horna Nitra in Prievidza as a reaction to the need of the region to improve educational and workforce capacities. The centre includes new healthcare middle school, centre for lifelong learning, school for foreign languages, centre for career advice, re-qualification centre and environmental education.

## *Key project parameters*

<b>Jobs created</b>	TBA
<b>Start of the project</b>	2019
<b>Project duration</b>	36 months
<b>Indicative budget</b>	8.2m EUR



# Examples from indicative list of projects

Other topic within indicative projects

Road re-constructions and modernisations  
Agriculture projects  
Social care facilities  
Tourism projects  
Education projects  
Sport center  
Incubators  
E-mobility in cities  
Culture hall  
Healthcare facilities  
New industrial  
Cycling routes  
parks  
Food processing projects  
Social care facilities  
Photovoltaic power plants  
Housing  
Revitalisation projects

# 7

## Discussion, Q&A



# Thank you

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# REPURPOSING MINING LANDS AND ASSETS

## CHALLENGES AND POTENTIAL APPROACHES

WORLD BANK GROUP  
MINING WEEK  
MARCH, 2019



## Repurposing Land and Assets: Key Questions

- 1. How can repurposing of mining lands contribute to coal transition?**
- 2. Key geographic, material and legal/regulatory factors influencing post mining land use?**
- 3. Range of conceivable post-mining land utilization scenarios?**
- 4. Potential tools to determine suitability of lands for a specific scenario?**
- 5. How can post mining land repurposing be integrated into spatial planning strategies and tools?**
- 6. What can the operator do before closure to achieve a stable, sustainable, economically productive post-mining landscape?**



## Repurposing Land and Assets: Key Questions

### **This is a moment of opportunity:**

- 1. We are at a juncture for future land repurposing on PPC lands, as a new environmental permit is due in 2021. Now is the time to widen the scope of allowable**
- 2. Renewal of existing regional spatial plan (RSP) with a supporting study on spatial organization of Western Macedonia – there is an opportunity to influence and contribute and link PPC lands repurposing to the RSP process**

## Repurposing Land and Assets: Current Conditions



View of Mavropigi Mine: The landscape around the mines is dominated by operational considerations and needs. Currently there are few visible efforts to “mine for closure” and make land available for repurposing deliberately and swiftly, as it is decommissioned from mining activities.



## Repurposing Land and Assets: Current Conditions



Interior overburden dump of Kardia Mine: The immediate post-mining landscape is geotechnically and environmentally highly challenged and requires significant remediation and conditioning to be fit-for-purpose. To have a vision of the purpose before remediation allows a much more targeted and thus more economic approach.



## Repurposing Land and Assets: Current Conditions



Top of external Overburden Dump of Amyntaio Mine, planned to be closed in a few years. Remediation works on the final level – the current plateau of the dump - have just started. Note the uneven topography and sparse vegetation.

A “mining for closure” approach could make selected areas of dumps available for re-development, while others are still used.



# Repurposing Land and Assets: Current Conditions



Geotechnical instabilities and risks: large slide in Amyntaio Mine, occurred in 2017.



## Repurposing Land and Assets: Current Conditions



Environmental impacts resulting from current mine operations: very high dust generation from Kardia Mine (right of center) on a windy day (14 Feb 2019). Such adverse environmental effects need to be considered as constraining factors in land repurposing, as long as the mines are operational.

## Compliance-driven Lands Reclamation

- Reclamation and remediation of lands released from mine operations is **governed by environmental permits** issued to operator for specific periods.
- Virtually all remediation efforts are highly **compliance driven**.
- This means that the preparation for the Env. permit needs to include comprehensive spatial planning and redevelopment considerations **beyond just “greening” of dumps**.
- There is other, non-environmental legislation, e.g. on RE development, which **constrains operator’s ability to plan** realistic utilization scenarios for repurposed land - e.g. PV installation.
- Environmental management plans for remediation activities should be seen as opportunity to propose a **range of activities to be integrated into the permit**.



# Compliance-driven Lands Reclamation



Typical compliance-driven reclamation: view of external overburden dump (OD) that has been remediated and revegetated according to the approved environmental terms. Slopes are usually planted with forest, while flat areas are used for agriculture.



# Repurposing Land and Assets: Options Beyond Basic Reclamation



The cutting edge “Helector” waste management plant has a capacity of 120,000 t/year and processes virtually all of Western Macedonia’s solid waste. It has an elaborating sorting plant that extracts paper, 5 types of plastics, ferrous and non-ferrous metals. The residual organic fraction is composted.





Spilia

Agios Christoforos

Karyochori

Pteleonas

Palia Ampelia

Charavgi

Klitos

Kardia

Komanos

Palia Ampelia

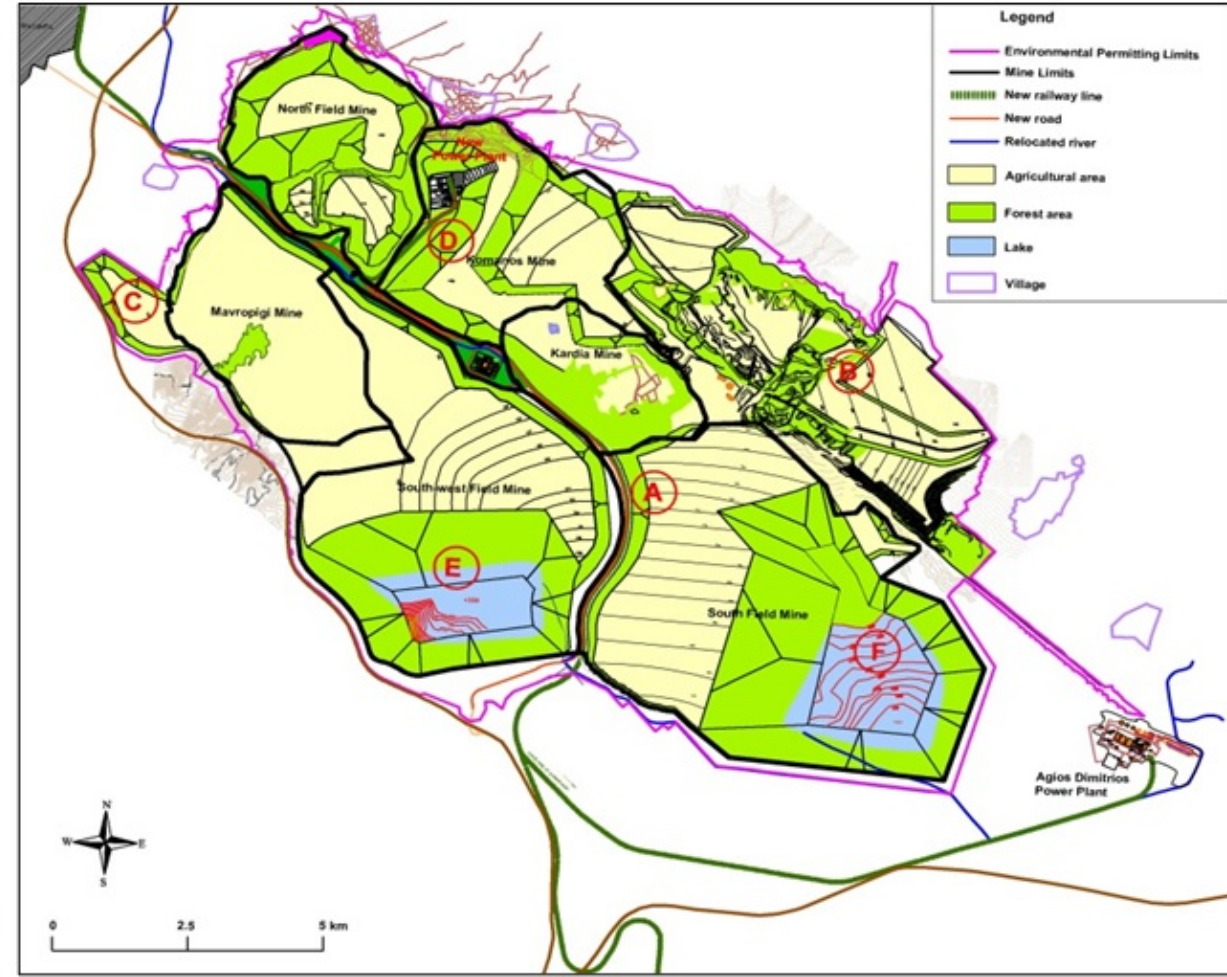
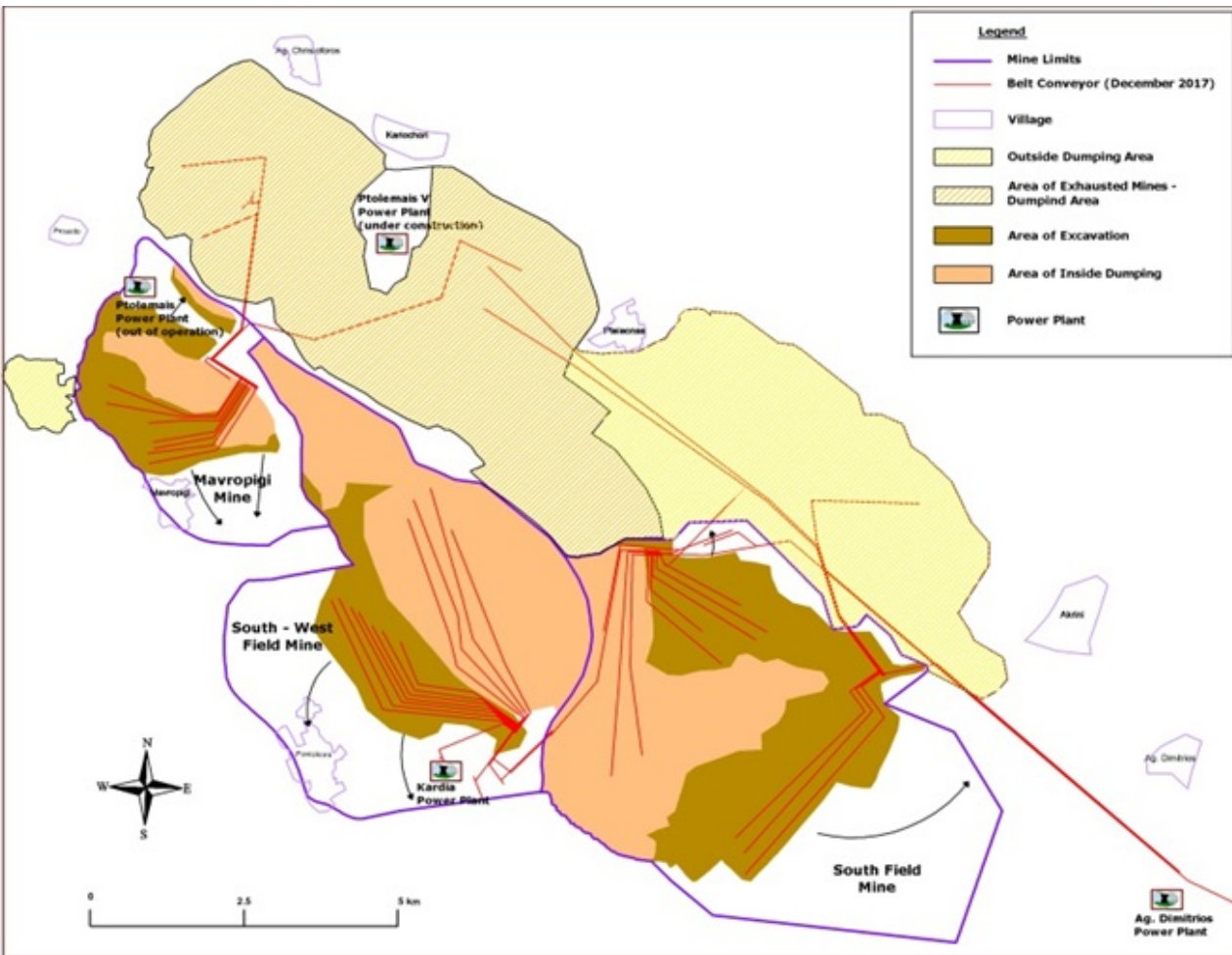
Proastio

Mavropigi

ca. 15 x 10 km



# Current Mine Operations and Reclamation Planning

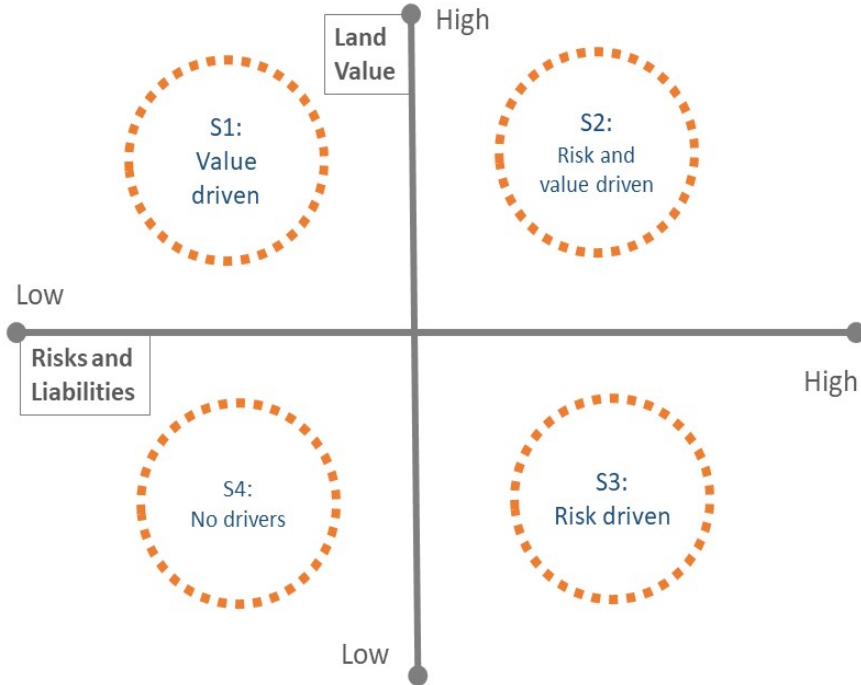


## More Systematic Approaches to Lands Repurposing

- **Develop methodology and outline of a reclamation master plan for previously mined areas with attention to:**
- **Managing environmental and geotechnical liabilities and legacies;**
- **Strategic Approaches to reuse and revitalizing of lands that, once geotechnically stable and environmentally remediated, could be repurposed for investments into new low-carbon industries and /or public-sector projects;.**
- **Managing a continuous stakeholder engagement process;**
- **Producing effective terms of reference (TOR) for detailed (e.g. district or community-level) spatial planning.**

# Repurposing Land and Assets: Various Methodological Approaches

## Risk/value-driven categorization system for lands repurposing:



**S1: Low risk / high land value** create strong economic incentives for redevelopment. Approach to foster “right” kind of development and guide towards balanced regional development pattern.

**S2: High potential value / significant liabilities.** The net value (land value minus liabilities) may be around zero. Approach: targeted financial and technical assistance to catalyze development and create economic sustainability. Need of a higher value post-remediation use to offset the higher cost compared to S1.

**S3: High risks / liabilities.** Environmental contamination, geotechnical instability or derelict built assets creating structural hazards. Main driver of remediation is preventing, mitigating or containing hazards to public health and safety and protecting valued environmental components. Net value of the land usually negative.

**S4 Low liabilities / risks, no significant redevelopment value.** Can remain “dormant”, will not be actively targeted in the master plan. Potentially earmarked for future development phases or for environmental offsets.

# Repurposing Scenarios Beyond Environmental Compliance

Some broad categories of post-mining repurposing scenarios are:

- i. energy production / industrial / waste processing;
- ii. agricultural / horticultural / forestry;
- iii. recreational / tourism; and
- iv. commercial / office / research / technology parks
- v. retooling of built assets, such as TPP, for alternative energy production or other purposes.
- vi. water storage reservoirs for PSPs in residual pits

How can they be efficiently matched with available post-mining lands?

# Matching Land Characteristics and Repurposing Scenarios

Theme	Criteria	Advantage for...	Disadvantage for...
Location	Distance to infrastructure and utilities	Any industrial process that depends on delivery and shipping of goods or materials by road, and requires / produces significant amounts of energy and water, and solid and liquid waste.	Recreational areas, research parks and other non-industrial uses may be negatively impacted by proximity to infrastructure.
	Distance to human settlements	Recreational, business / research facilities would profit from closeness.	Industrial activities creating noise, emissions, odors and other risks / impacts should be isolated from settlements.
Geotechnical stability	Expected residual ground settlement	Almost irrelevant for agriculture and forests, recreation and tourism.	Can be extremely important for large scale structures with high loads and low tolerances esp. for differential settlement.
	Slope stability – seismic risks	Relevant for almost any use scenario; seismic risks need to be factored into ground stability assessments.	Can be actively hazardous for community health and safety, and infrastructure.
	Impact of groundwater rebound (applies especially to interior dumps)	Almost irrelevant for agriculture and forests, recreation and tourism; can have positive biodiversity impacts due to creation of lakes, ponds and wetlands with high ecological value.	Can be very relevant and have negative impacts for large scale structures with high loads and low tolerances esp. for differential settlement.

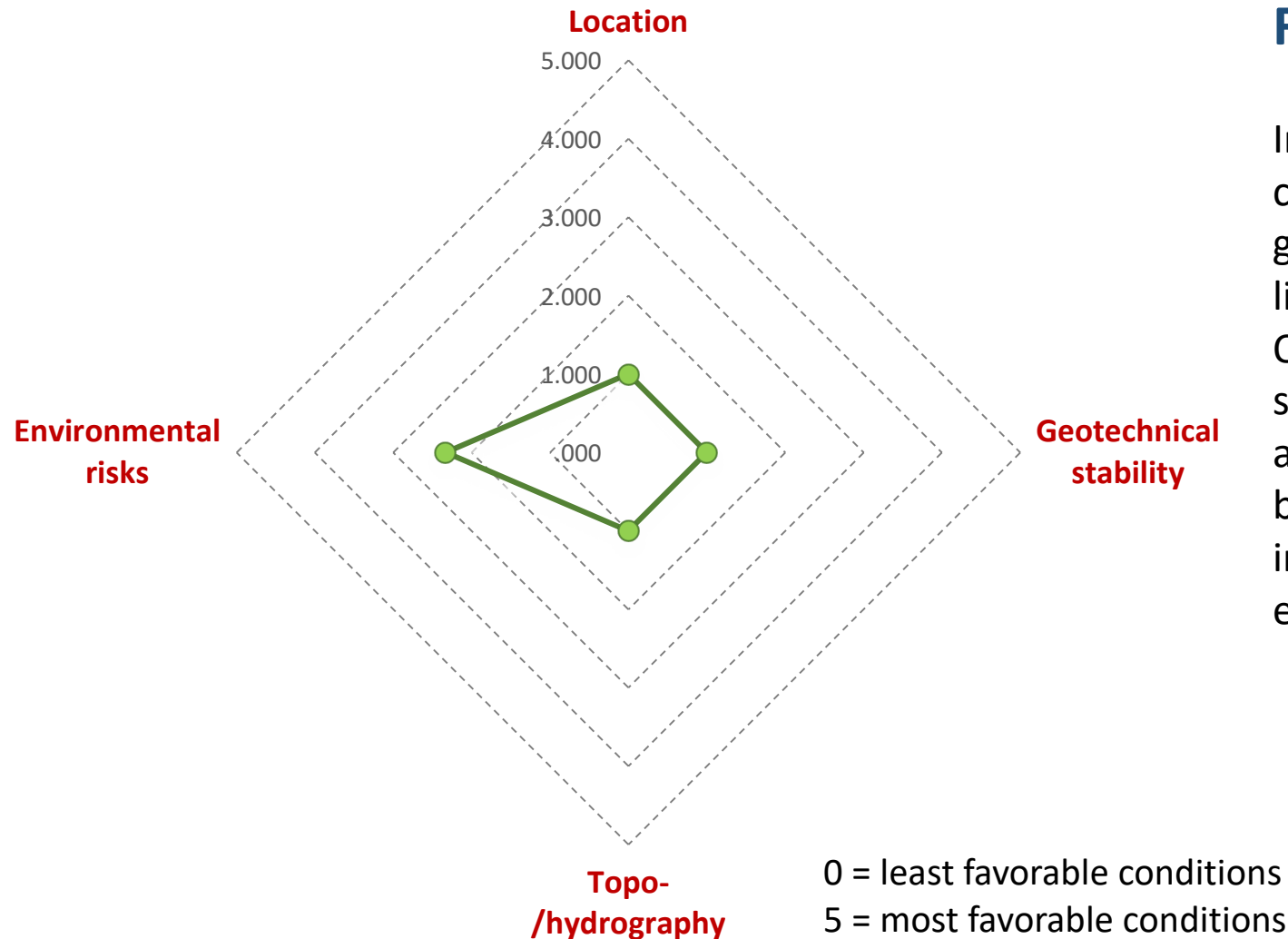


# Matching Land Characteristics and Repurposing Scenarios

Theme	Criteria	Advantage for...	Disadvantage for...
Topography and hydrography	Surface gradient and relief	Placement of PV on berms on high, stable slopes, if exposure appropriate; forests and natural reserves on slopes for stability, biodiversity, timber production or as carbon sink.	Any development requiring large, level space and stable ground; this will include almost any built structures.
	Surface drainage	Poor drainage and resulting standing water can be irrelevant or even advantageous for recreational use or biodiversity enhancement	All other uses require well drained surfaces, and tolerate neither stagnant water, nor erosion due to high flow velocities.
	Hydrological risks – extreme precipitation events and flooding	Limited tolerance for forestry, recreational use or biodiversity enhancement	Very limited or no tolerance for all other uses. Floods are particularly hazardous where they may interact with poorly consolidated dumps, which have high erosion potential.
Environmental risks	Contamination of dumped materials	Highly relevant and significant risk for agriculture; moderate risk / deterrent for recreational / touristic uses.	Likely of low relevance for all industrial uses
	Current environm. impacts of ongoing Lignite production (which could be 30 more years): dust, emissions, noise, vibrations.	Limited relevance for industrial activities (which themselves may create noise, emissions, odors etc.), and for forestry. Moderate to significant relevance for agriculture activities – dust could e.g. create negative impacts.	High relevance / potential negative impacts for recreation and tourism, as well as “white collar” type activities such as R&D or office parks.
	Processing and re-use of fly-ash from TPPs	Irrelevant for all uses except industrial processing of fly-ash.	When processing fly-ash into secondary products (e.g. concrete) need to ascertain acceptable levels of potential contaminants, especially heavy metals.



# Repurposing Land and Assets: What to Do and Where?

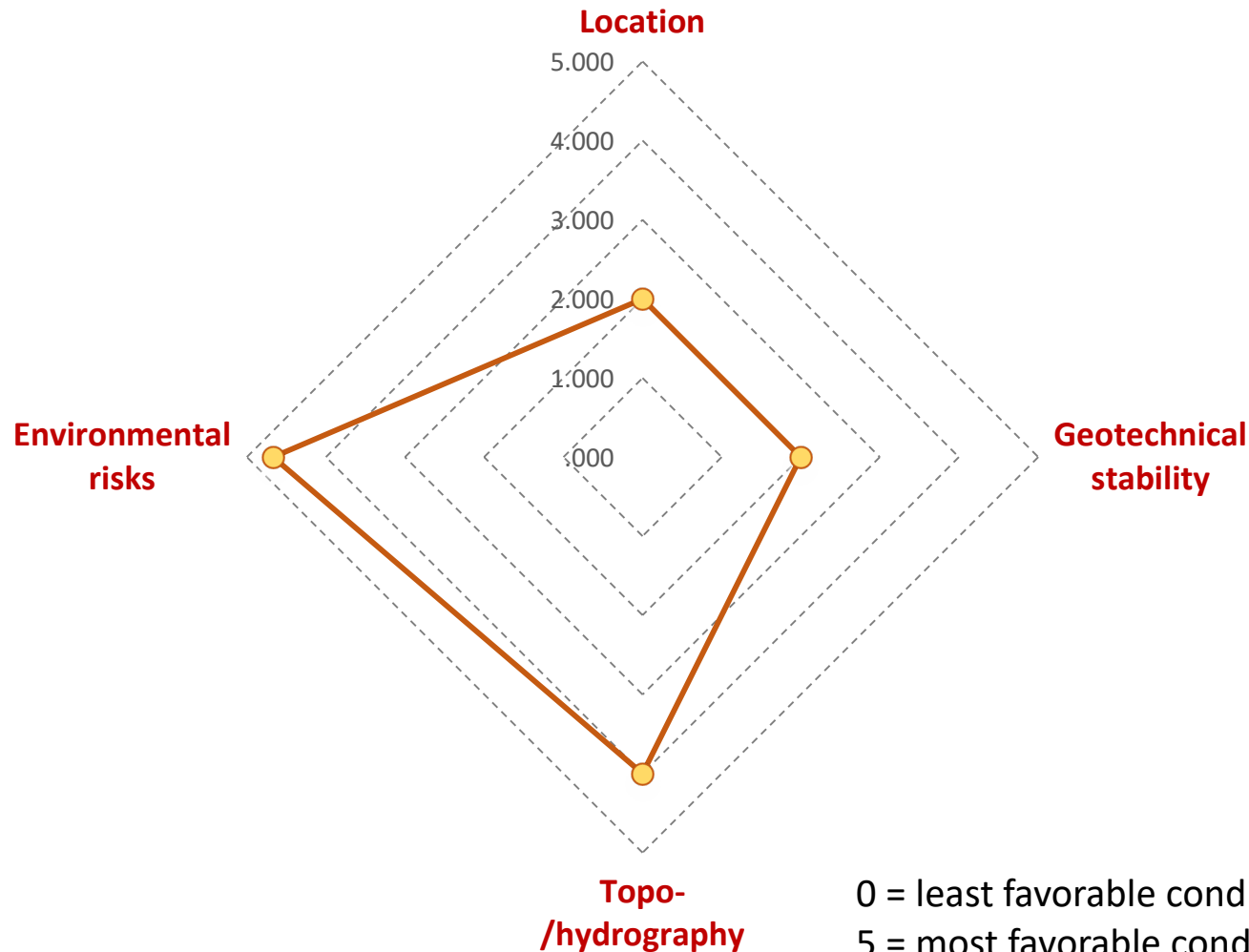


## Forestry and Natural Habitats:

Insensitive to most site characteristics / conditions, including location, topo-/hydrography, geotechnical stability. Environmental risks and liabilities are of moderate concern.

Optimal for lands with large, uneven residual settlements, rugged topography, poor drainage and steep, potentially unstable slopes. Areas can be both close to or remote from existing infrastructure or human settlements and economic activities.

# Repurposing Land and Assets: What to Do and Where?

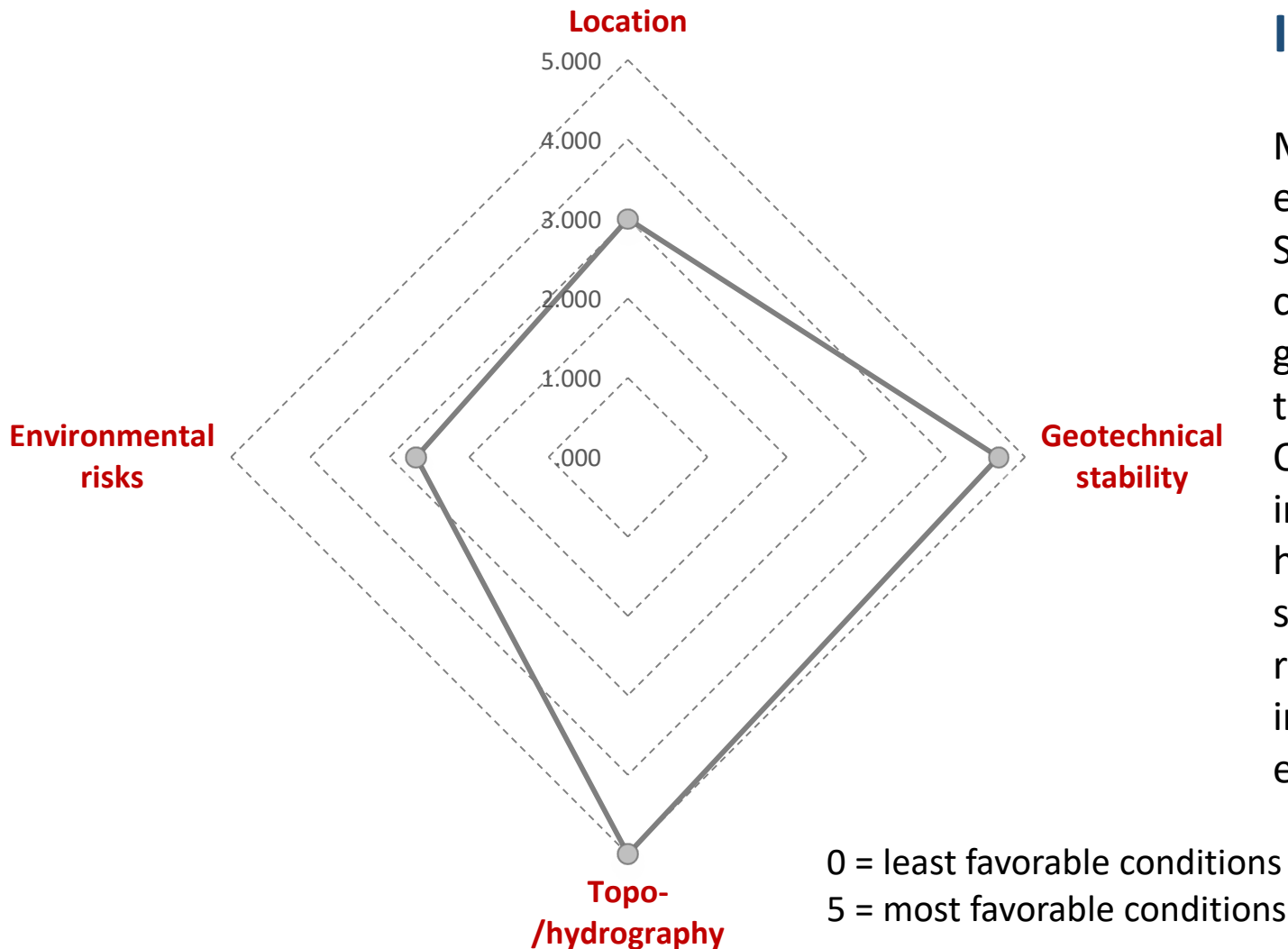


## Agriculture:

Moderately sensitive to location and geotechnical conditions. Environmental risks / liabilities and topo-/hydrography are of significant to high concern.

Optimal for lands that are even and have shallow inclines, where large, uneven residual settlements are still expected to occur. Areas can be both close to or remote from existing infrastructure or human settlements, but distance from existing farms will be an important economic factor.

# Repurposing Land and Assets: What to Do and Where?

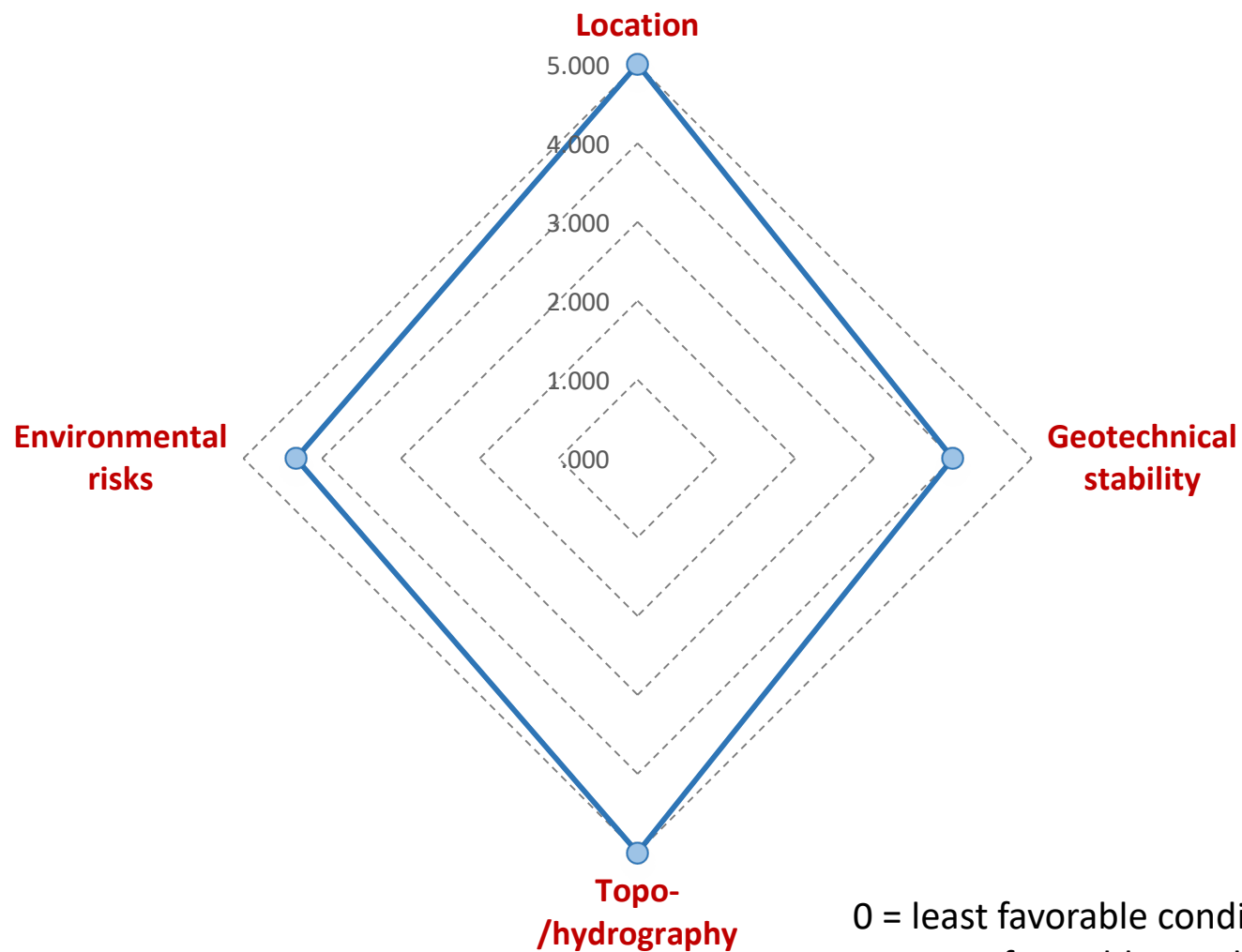


## Industry and Energy Production:

Moderately sensitive to location and environmental risks and liabilities. Geotechnical Stability and topo-/hydrography are of high concern (due to large structures requiring stable ground for foundations, having small tolerances towards differential settlements).

Optimal for lands that are even and have shallow inclines, where large, uneven residual settlements have already occurred and demonstrably subsided. Areas should be remote from residential areas, but moderately close existing infrastructure. Generally insensitive towards environmental risks or liabilities.

# Repurposing Land and Assets: What to Do and Where?



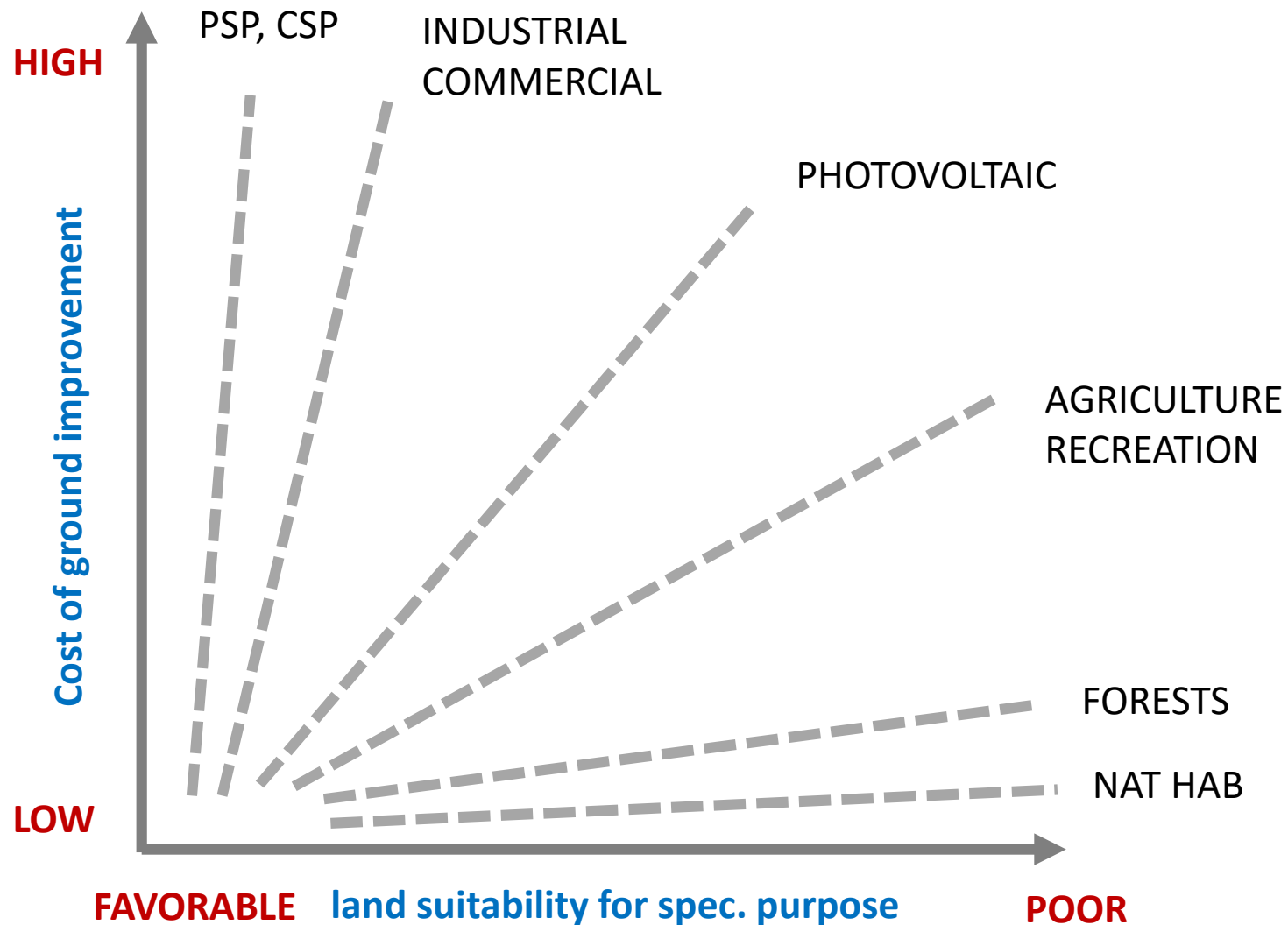
0 = least favorable conditions  
5 = most favorable conditions

## Business, Commercial & Research Parks, Recreation:

Highly sensitive to most site characteristics / conditions, including location, topo-/hydrography, geotechnical stability and environmental risks and liabilities.

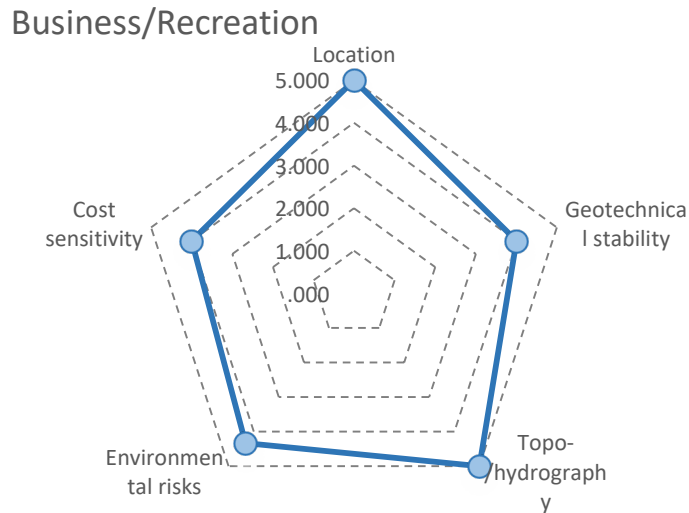
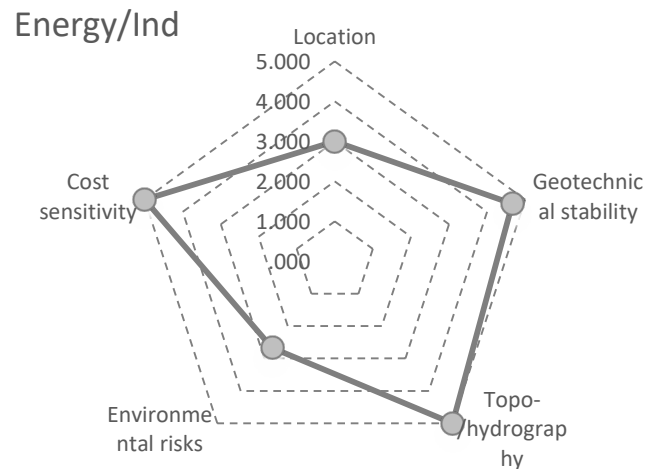
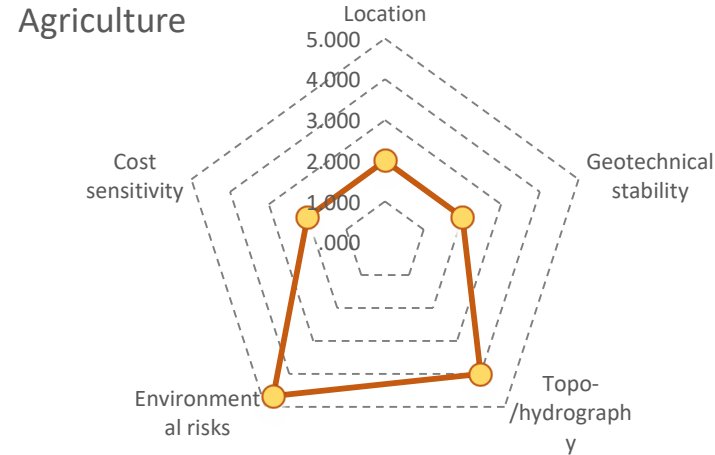
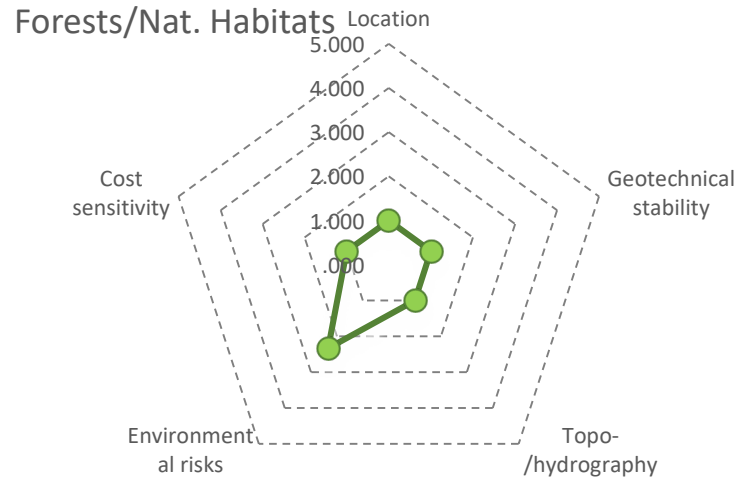
This utilization scenario is the most demanding, requiring stable lands, free of environmental liabilities, with favorable topography, no significant flood risks and geotechnically stable. The areas for this scenario need to be close to transport and energy infrastructure, and existing residential or commercial areas.

# Cost risk due to lack of information on land properties



This index describes the sensitivity of specific land repurposing scenarios towards the cost of improving poor ground conditions to favorable conditions. It underscores the cost-implications of suboptimal spatial planning.

# Cost risk due to lack of information on land properties



These are the same post mining utilization scenarios with cost risk factored in. This basically describes the financial risk of insufficient or false information on land properties, and the impact on investment planning reliability.

## Repurposing Land and Assets: Mining for Closure

**During mining operations / covering all lands within the concession / permit area :**

- **Build a spatial plan** based on an inventory of lands and their key physical / chemical / biological properties;
- **Categorize lands** for post-mining use scenarios, ideally for all mining lands; record in spatial plan of mine operations;
- **Integrate site investigation and monitoring systems** for environmental and geotechnical data into operational procedures (e.g. soil / water / groundwater chemistry, ground settlements, slope movements, groundwater levels...)

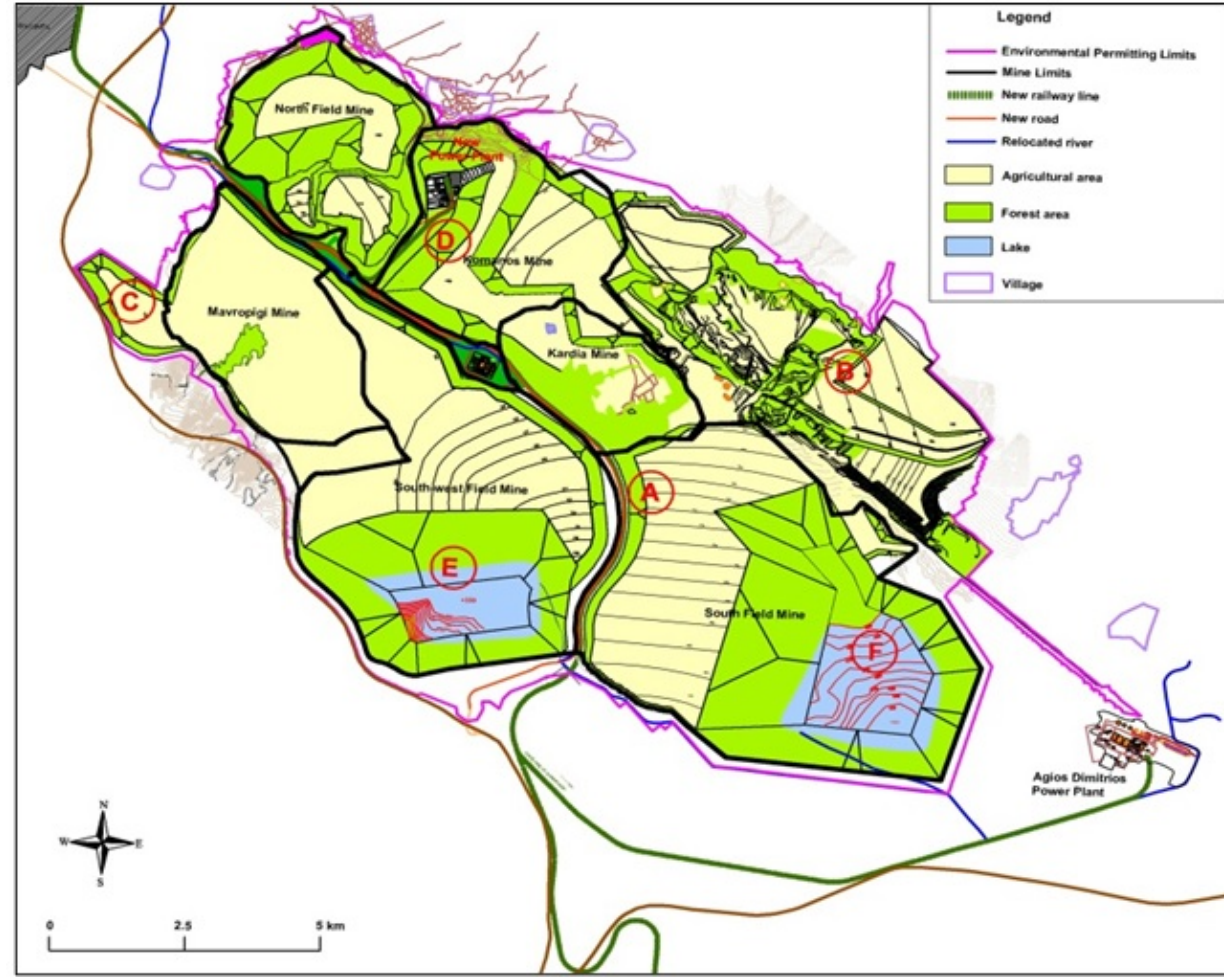
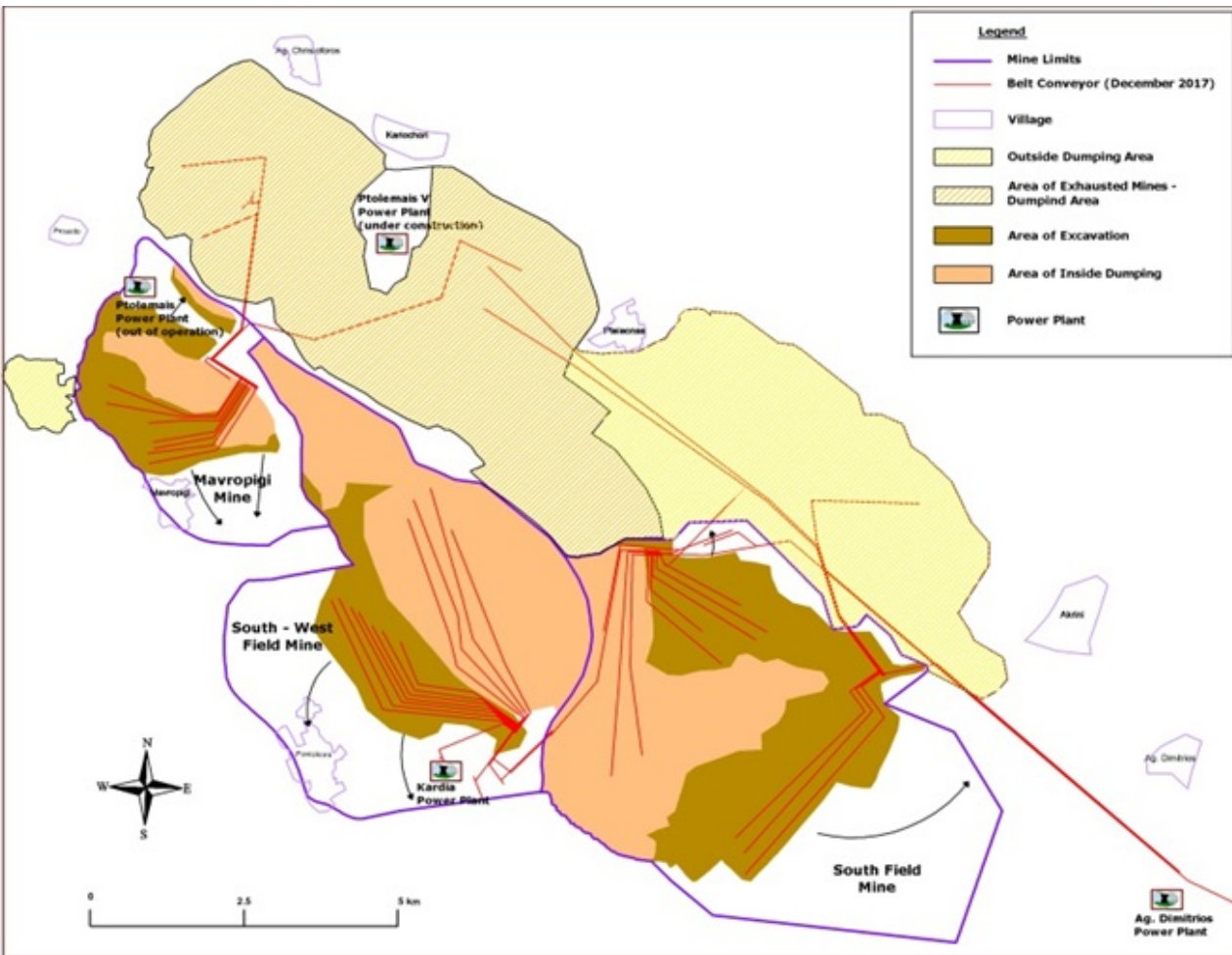
# Repurposing Land and Assets: Mining for Closure

- **Adjust operations:**

- composition of dumped materials, exclusion of problematic materials (high coal content, ash);
- consider susceptibility of materials to groundwater rise (slope stability, swelling / lubricating materials);
- plan layout of access and internal infrastructure (roads, power, water) with future demand scenarios in mind;
- focus planning and resources on putting potential high value lands into optimum material conditions (topography, drainage, stability, residual settlements, access and connectivity).
- Plan sequenced approach to maximize early reintegration of marketable lands.



# Current Mine Operations and Reclamation Planning



## Repurposing Land and Assets: Questions for Discussion

- Does the repurposing approach presented here make sense? Is this realistic?
- Which key stakeholders need to be included to integrate geographic / environmental / social / economic factors with a vision of a sustainable landscape as outcome?
- Is mining for closure practically feasible? Could it generate additional jobs? Can the operator PPC be persuaded to make the required upstream investments?
- What are “red lines” in terms of repurposing scenarios? Would e.g. PSP be acceptable? What should the general mix of economic, recreational and conservation use be?
- Did we overlook any important aspects?

# THANK YOU

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