

WORKSHOP ENERGY & SPACE

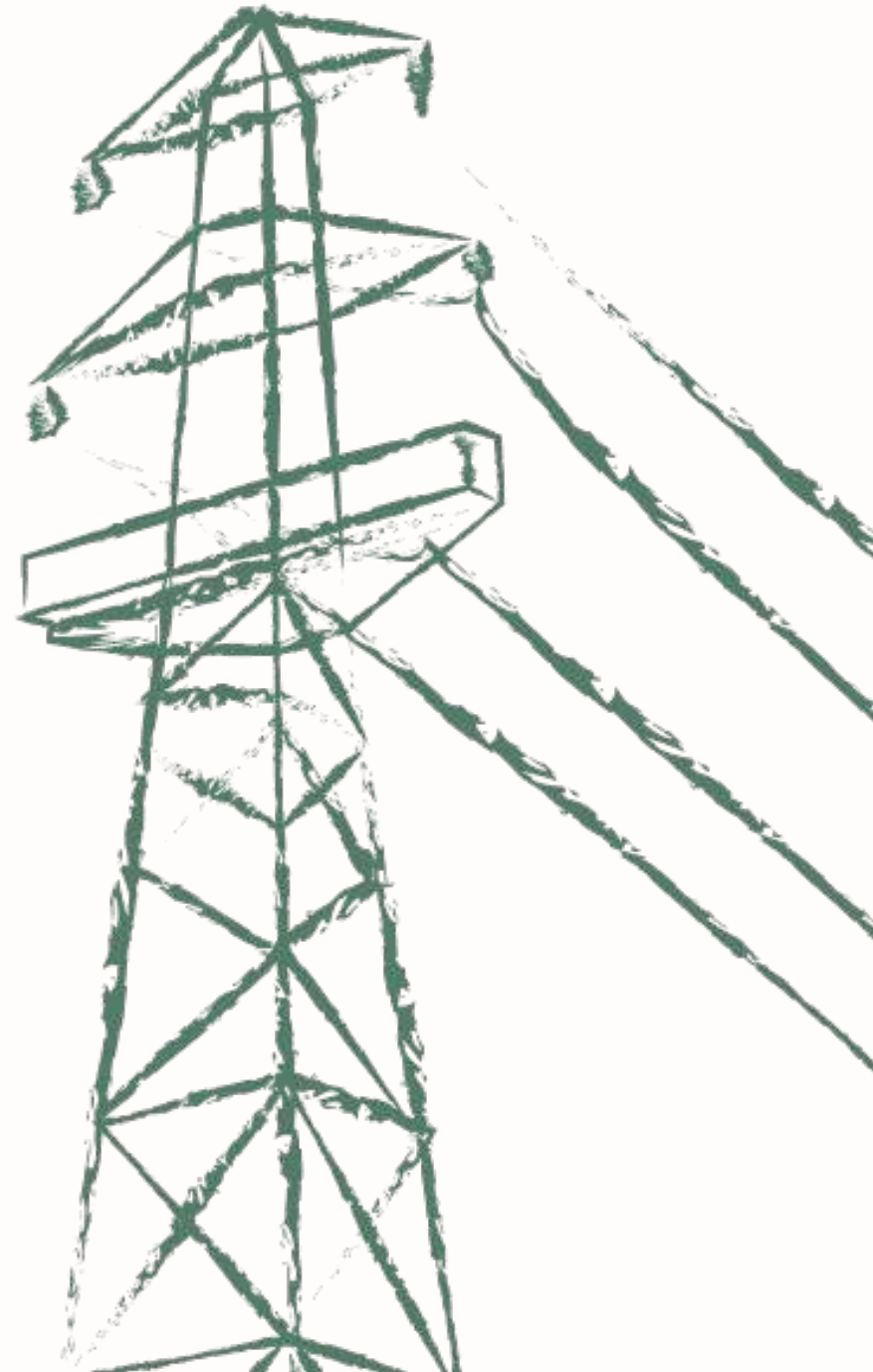
**Overcoming the challenge of limited space
to achieve a decarbonised energy system**

Renewables
Grid Initiative 



Co-funded by
the European Union

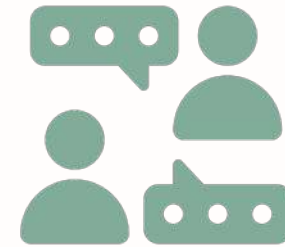
[Learn more about the Workshop on our webpage](#)



Best Practice Fair

Introduction and practice pitches (Part I)

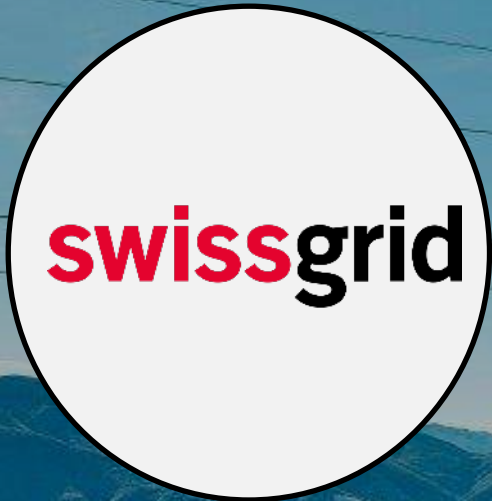
- Best Practice Fair open all day
- Presenters share their practical approaches to energy and space
- Talk to them in the breaks



PATHFINDER: OPTIMAL SITING AND ROUTING FOR ENERGY INFRASTRUCTURES GILYTICS AND SWISSGRID



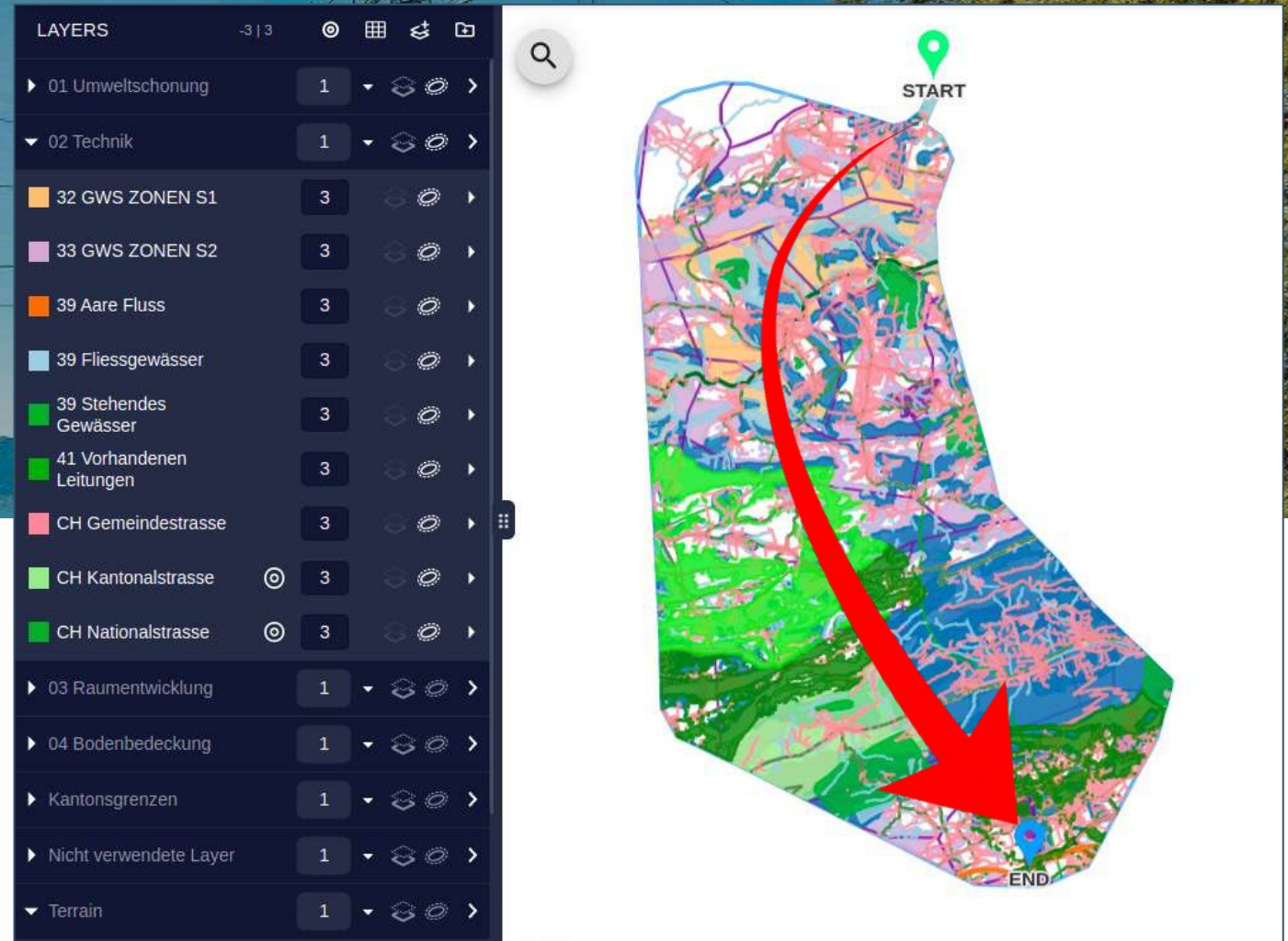
Best practice: Swissgrid + Pathfinder



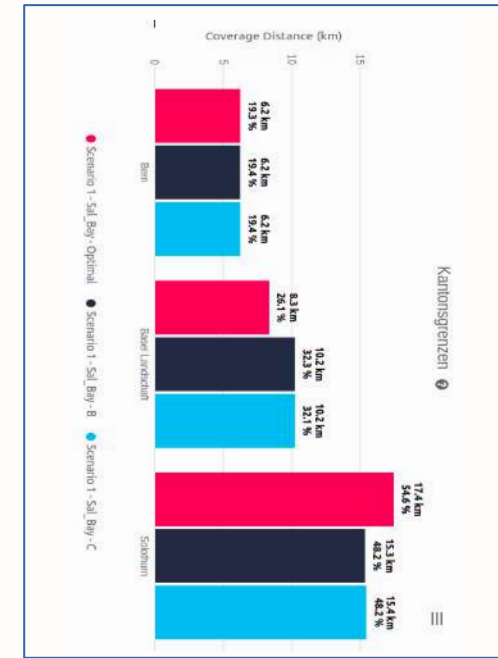
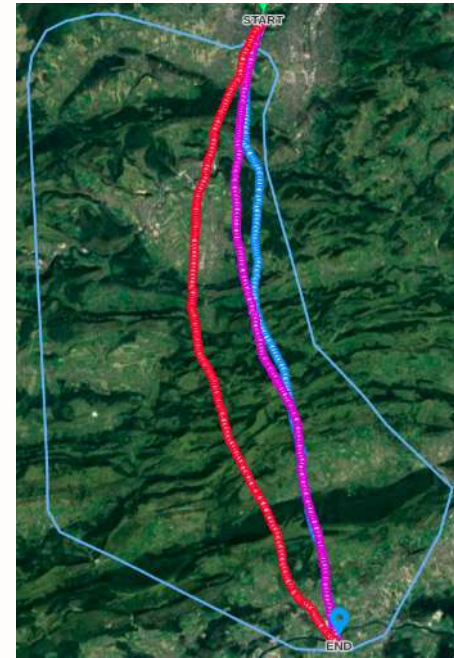
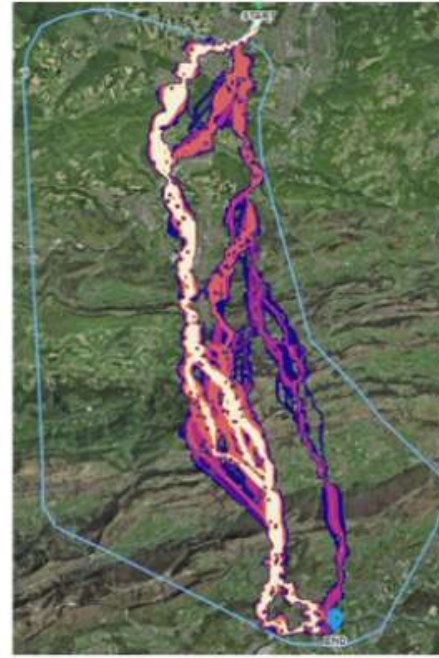
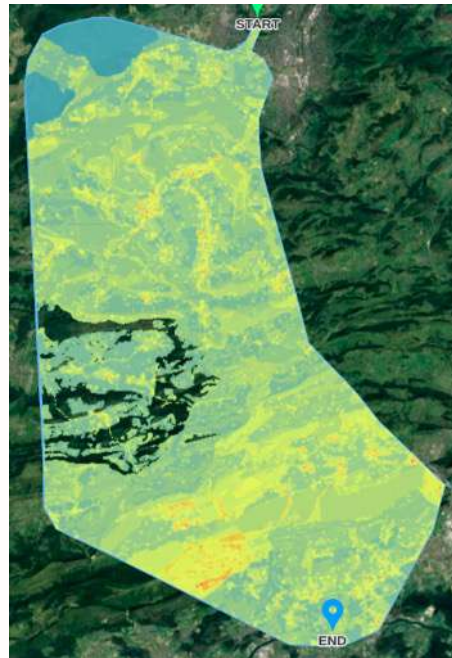
Swiss National TSO
extra high voltage grid



Challenge
Find acceptable corridors
and routes



Using Pathfinder for spatial planning



Define constraints

1

Calculate total resistance

2

Test scenarios

3

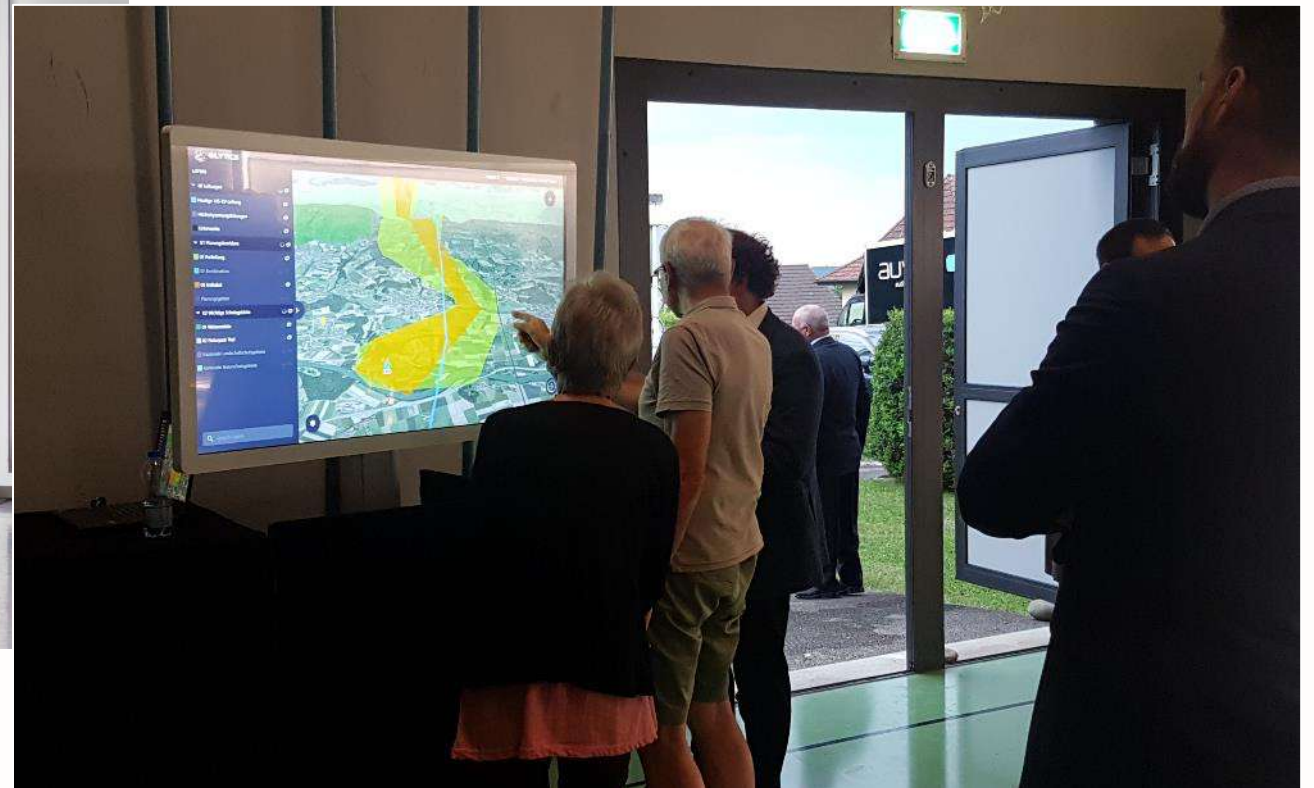
Calculate options

4

Analyze impact

5

Using Pathfinder for stakeholder engagement



In progress: combining transmission technologies



GILYTICS PROJECT SCENARIOS RESULTS VIEW TOOLS HELP PROJECT: Project Name Stefano Administrator

LAYERS -3/3

- Deutlicher Raumwiderstand 44
- Einzelwohnhaeuser kleine Ortslagen PR
- Industriegebiete PR
- LSG -3
- Mueelldeponie PR
- Obstgarten -2
- Siedlungspuffer 0

Subsection toolbar

Default technology: HDD1 [Configure](#)

Path length	CAPEX	Impact index	ECO index	Construction time
125.54 km	670.8 M€	247.5	68.32	452 days

Type	Length	CAPEX	Impact index	ECO index	Construct ion time
Trench	8.2 km	60.1 M€	27.5	6.32	45 days
Tunnel	12.5 km	140.2 M€	18.3	14.5	103 days
Trench	14.7 km	216.8 M€	45.3	13.1	87 days
Tunnel	5.6 km	47.5 M€	19.4	5.6	39 days

DISCARD **APPLY**

Technology	Length	CAPEX	Impact index	ECO index	Construct ion time
HDD1	5.2 km	60.1 M€	17.5	4.32	25 days
HDD2	5.2 km	70.2 M€	18.3	4.5	28 days
Tunel 1	4.0 km	88.5 M€	9.5	4.28	34 days

[Export](#) [Import](#) [Report](#)

SCENARIOS

- Scenario 1
- Scenario 2
- Overhead sections
- Trench sections
- Tunnel sections
- Another scenario

RESULTS

- Resistance maps
- Another scenario
- Multi Scenario 2
- Overhead sections
- Trench sections
- Tunnel sections
- Trench 2
- Scenario 3
- Another scenario II
- Valencia
- Corridors
- Width 5%

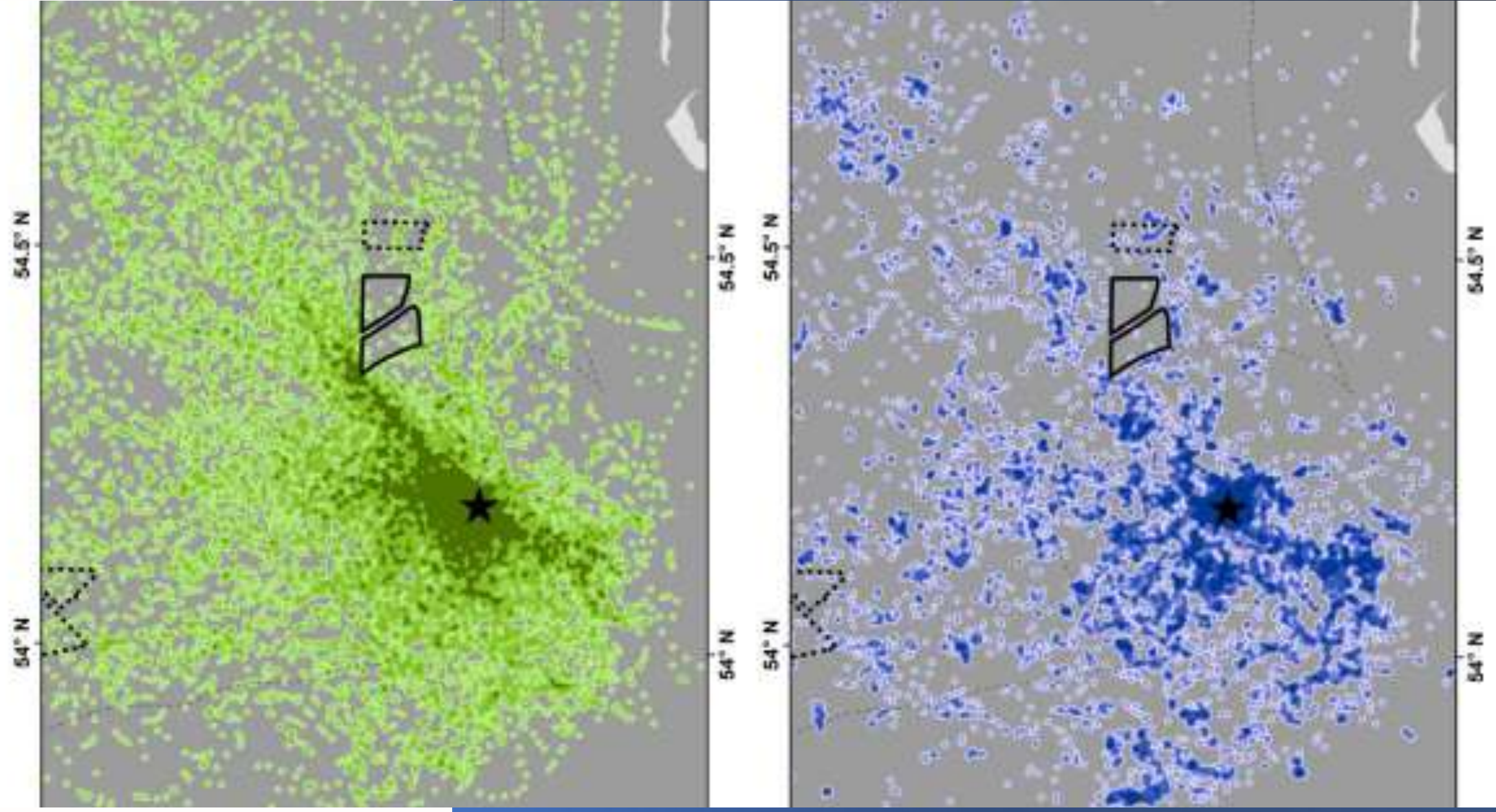
AVISTEP

BIRDLIFE INTERNATIONAL

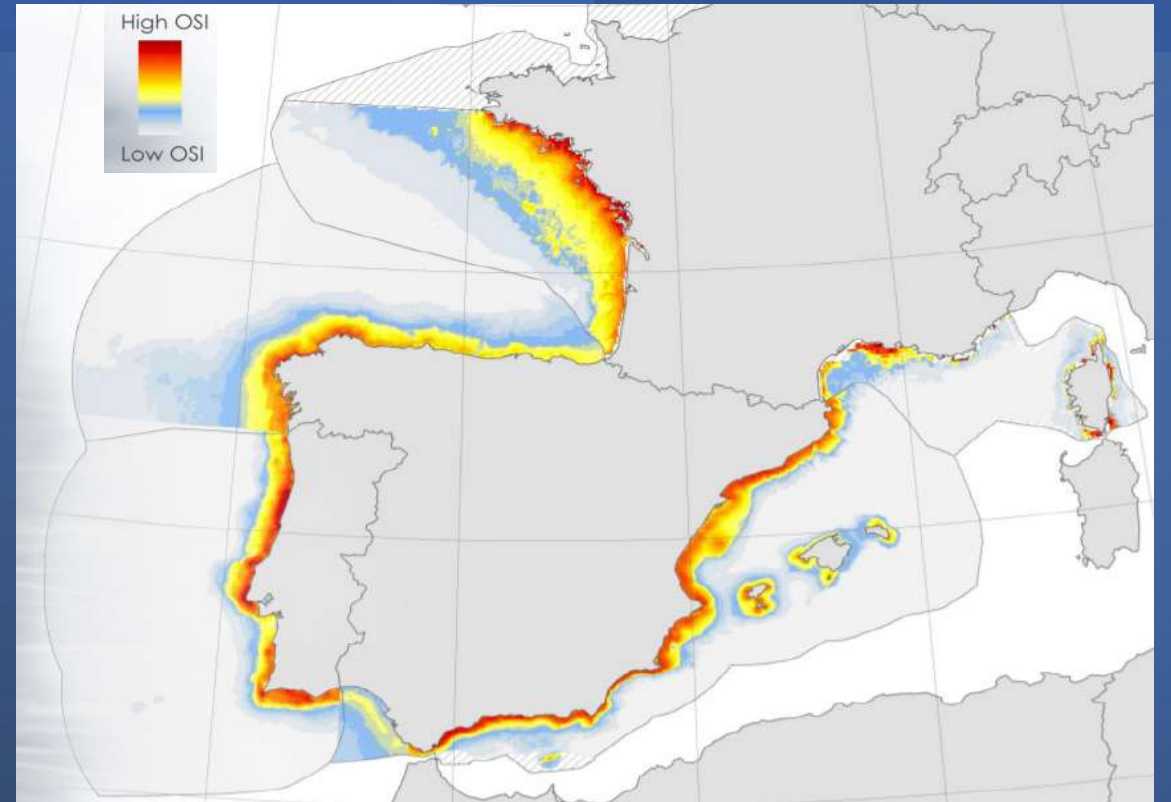
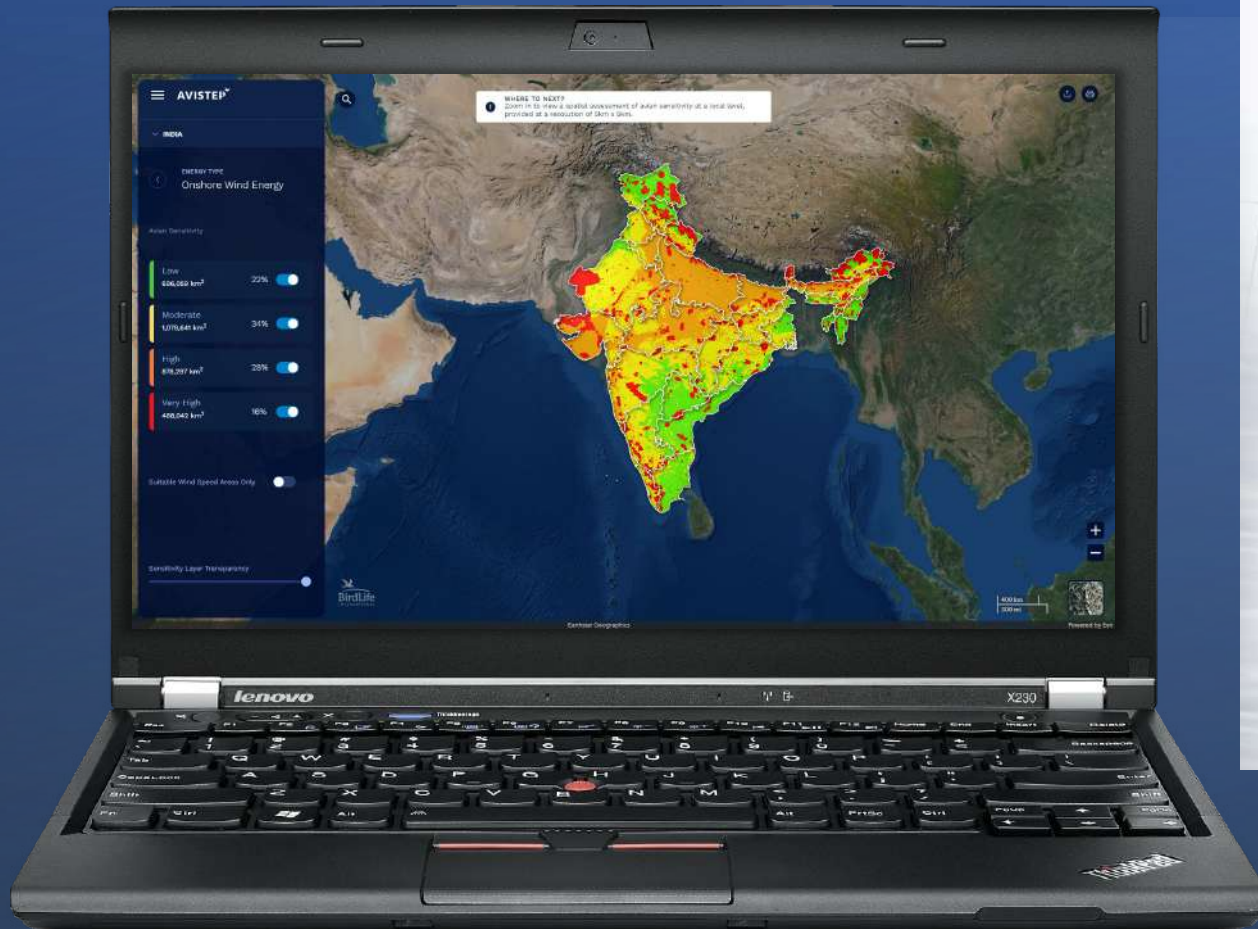


Sensitivity Mapping





AVISTEP



HANDBOOK FOR PRACTITIONERS ON MAPPING A SUSTAINABLE RENEWABLE ENERGY TRANSITION

THE NATURE CONSERVANCY

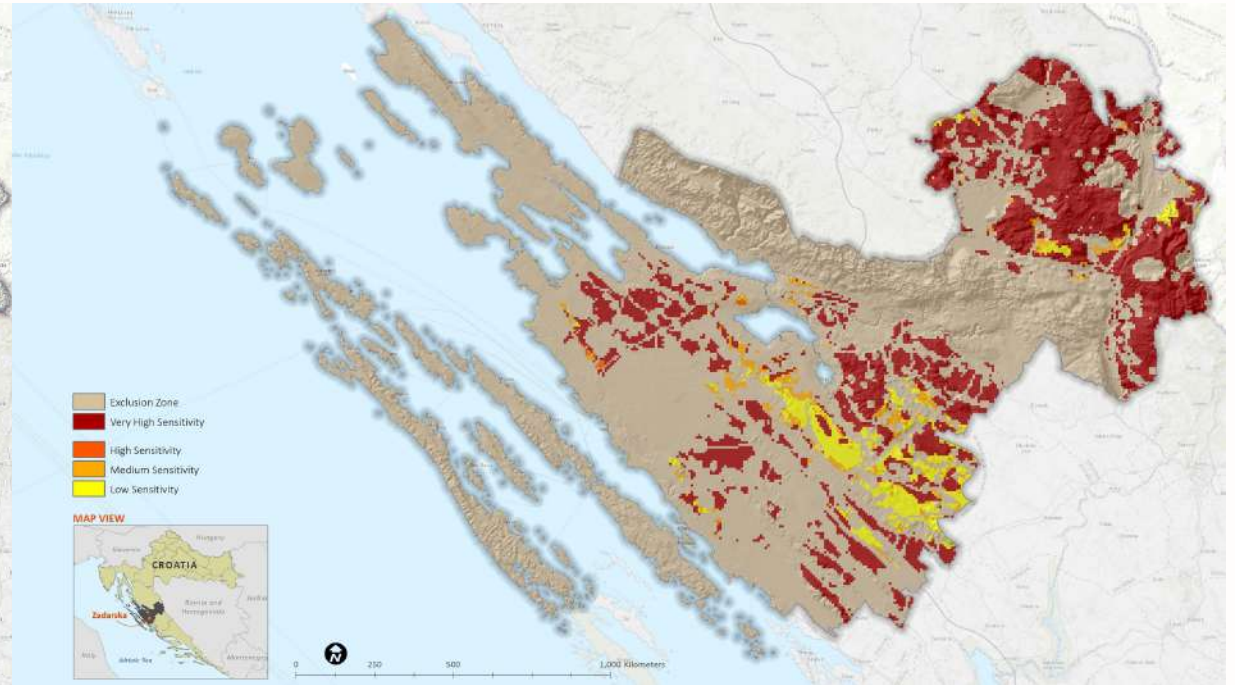
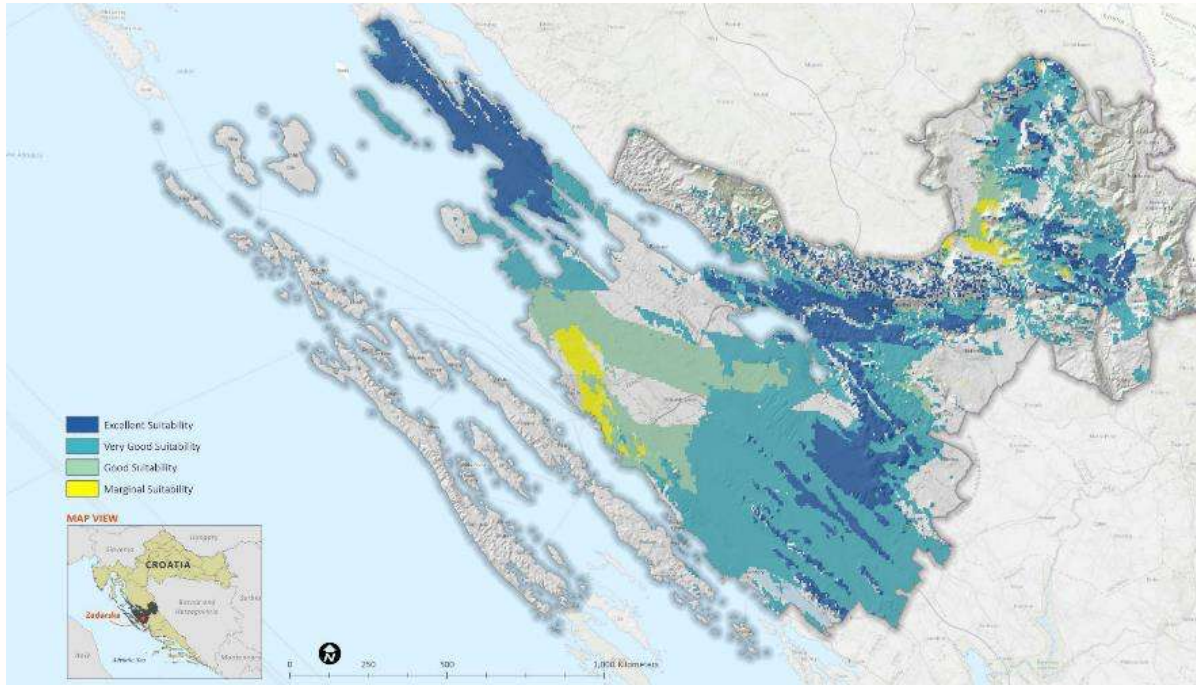


THE NATURE CONSERVANCY

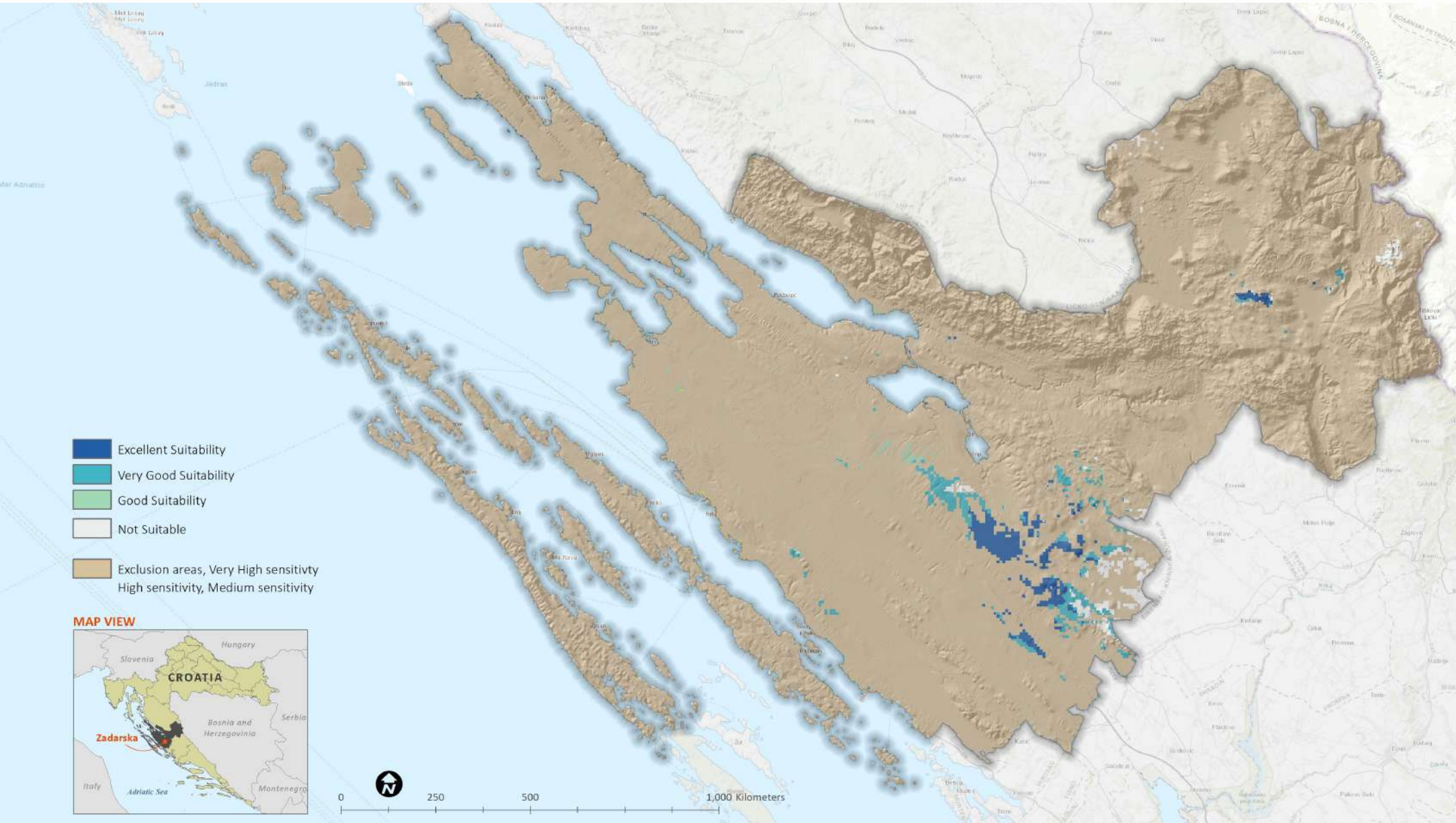
The challenge of siting renewables in Europe and beyond



Technical suitability vs enviro-social sensitivity



Bringing it together



Sharing what we've learned

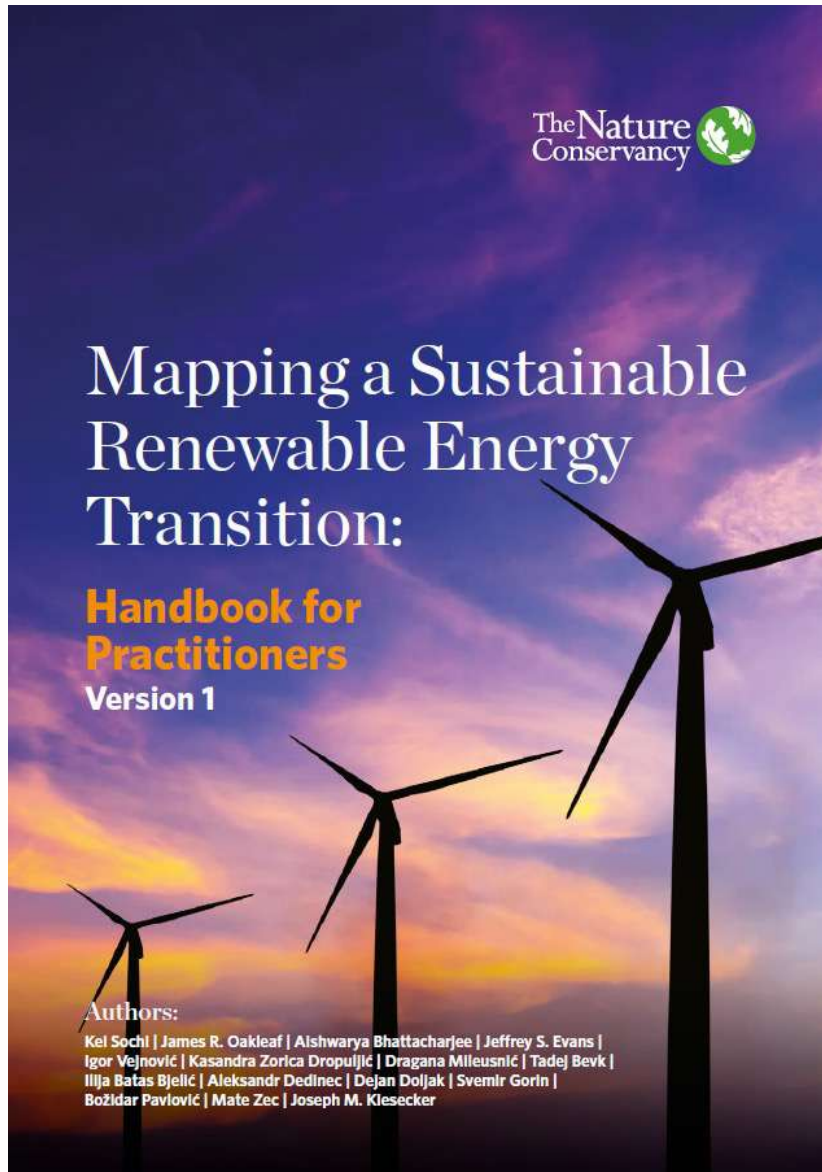
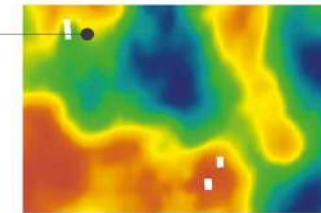



Figure 1. Assessment components

Stakeholder/partner engagement at earliest stages and continued throughout project phases

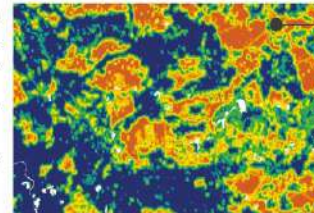
 **Energy Mapping**
[Chapter 2]

Identifying lands suitable for wind or solar development based on economic, administrative, and biophysical factors and assessing potential energy yields.



 **Values/Conflict Mapping**
[Chapter 3, 4]

Mapping environmental, biodiversity, and social/cultural elements of conservation interest in the landscape to understand where conflicts are likely to occur, clarify tradeoffs and identify areas that meet the criteria for low-conflict development.



Bringing it Together
[Chapter 5]



Identifying future targets goals for solar and wind energy at the national or other jurisdictional level and the extent of potential of socio-ecological conflicts if renewable energy development is pursued under different development scenarios to meet those targets.

- High Resource, Low Conflict
- High Resource, High Conflict
- Low Resource, High Conflict
- Low Resource, Low Conflict

ENVIRONMENTAL IMPACT ASSESSMENT: PROJECT'S VIRTUAL VISIT

REN



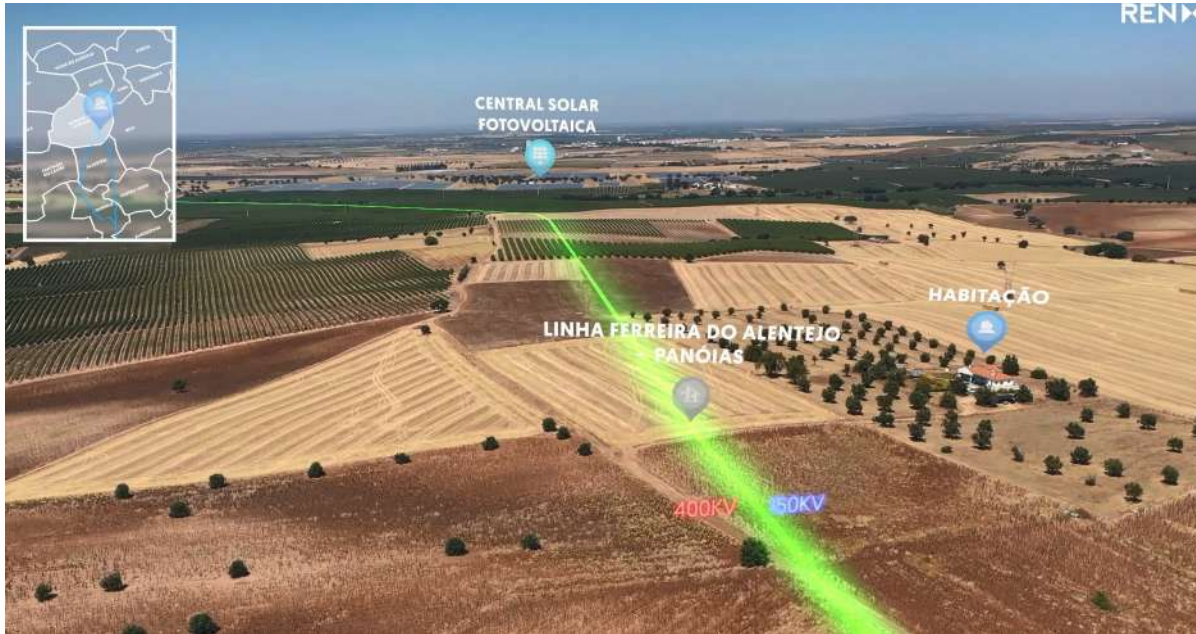
Environmental impact assessment: project's virtual visit



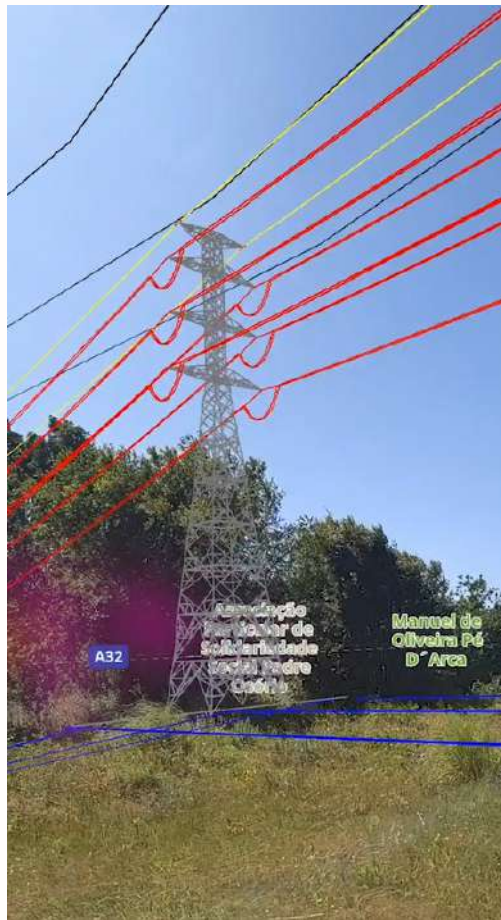
Environmental impact assessment: project's virtual visit



Environmental impact assessment: project's virtual visit



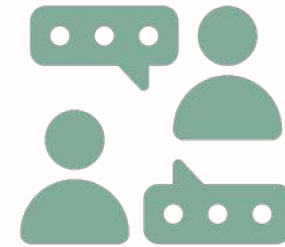
Augmented Reality App for Projects and Environmental Constrains



Best Practice Fair

Practices' pitches (Part II)

- Best Practice Fair open all day
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INTEGRATED VEGETATION MANAGEMENT PROJECTS

ECOFIRST



NATIONAL ATLASES OF RENEWABLE SOURCES RSE



Integration of renewable energy in land and environment

Ecosystem
services

Integrate
d
Atlas

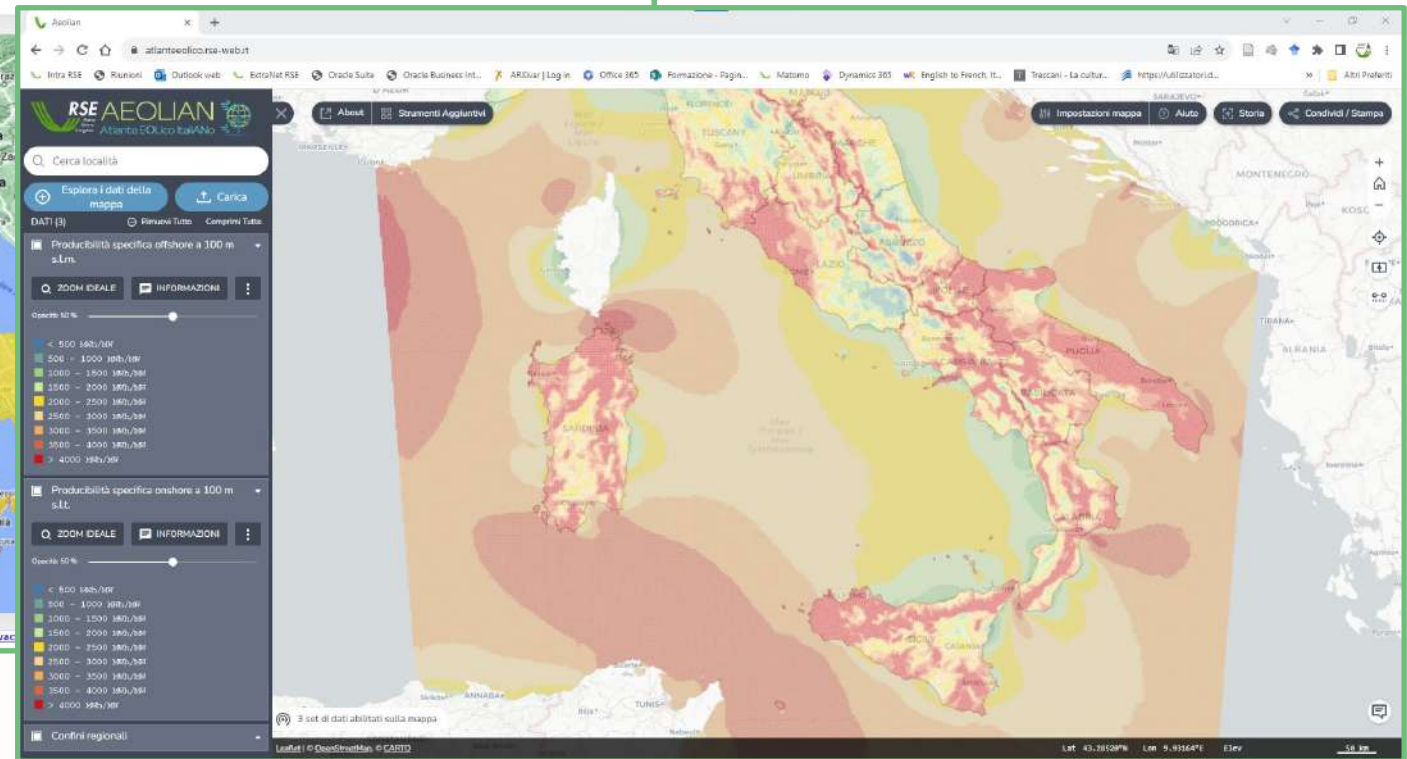
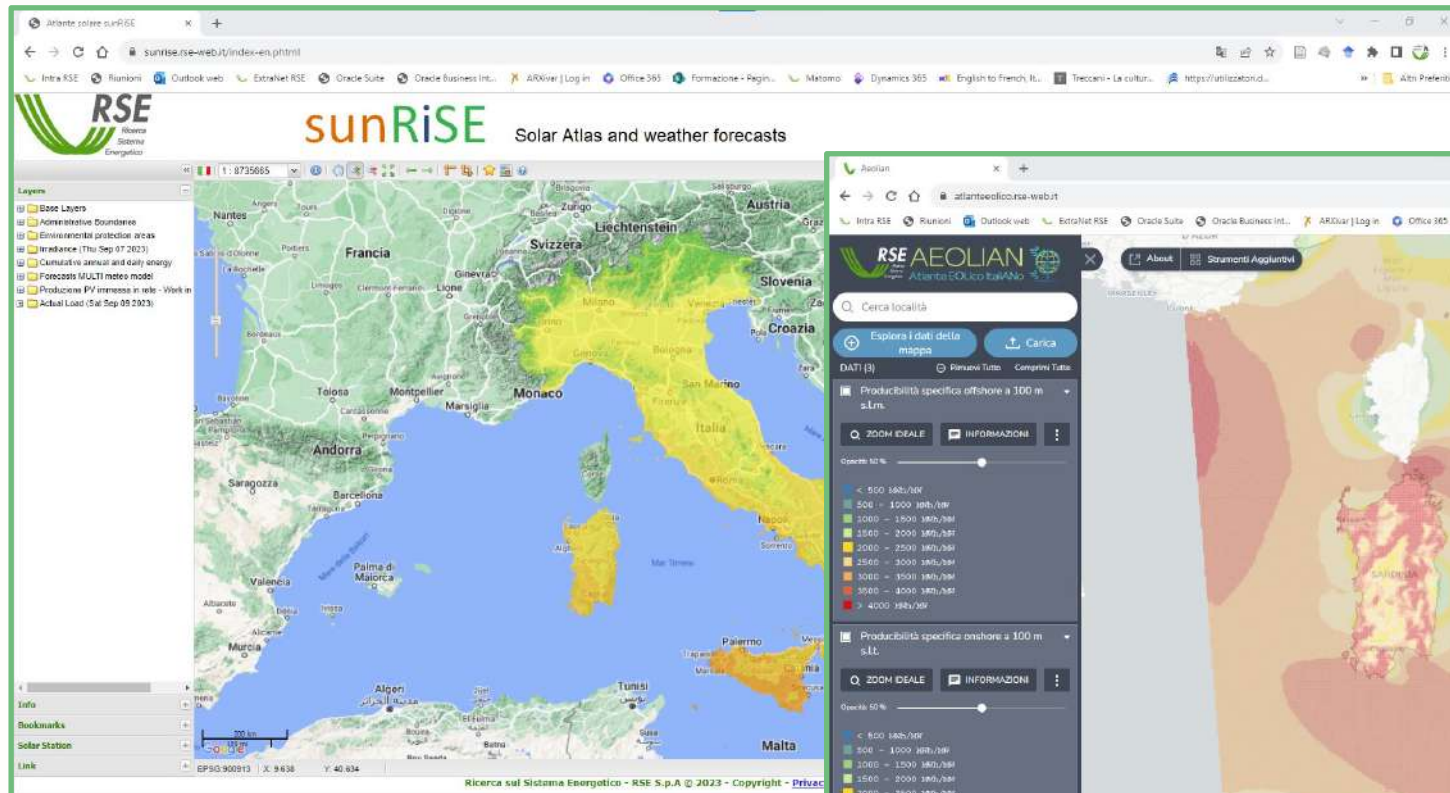
RES
Distributio
n

Multi-
objective
optimizatio
n



The atlases of renewable energy sources

Solar and wind distribution in Italy



Different tools for different purposes

AEOLIAN 
Atlante EOLico ItaliANo

sunRiSE



Support to the planning process



BURDEN SHARING

SUITABLE AREAS

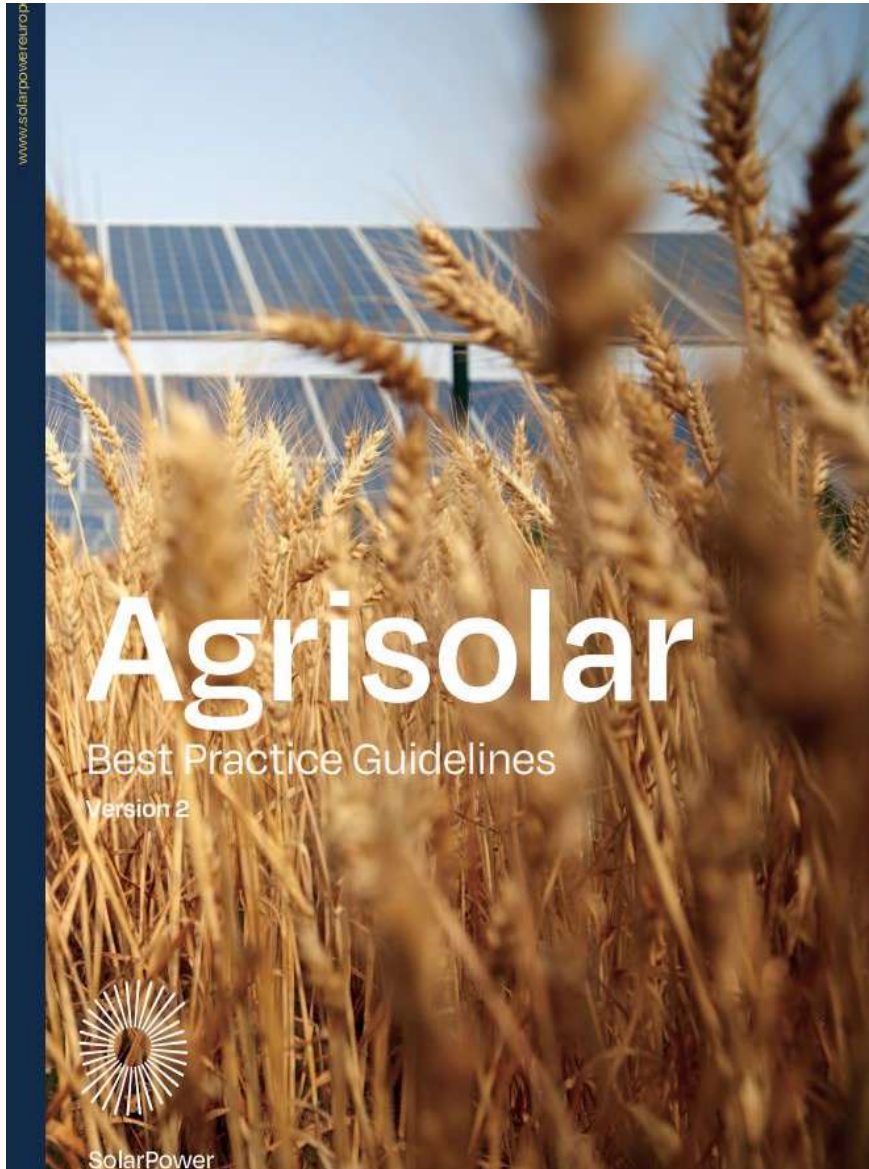


This work has been financed by the Research Fund for the Italian Electrical System under the Three-Year Research Plan 2022-2024 (DM MITE n. 337, 15.09.2022), in compliance with the Decree of April 16th, 2018”.

SOLAR, BIODIVERSITY, LAND USE: BEST PRACTICE GUIDELINES

SOLARPOWER EUROPE

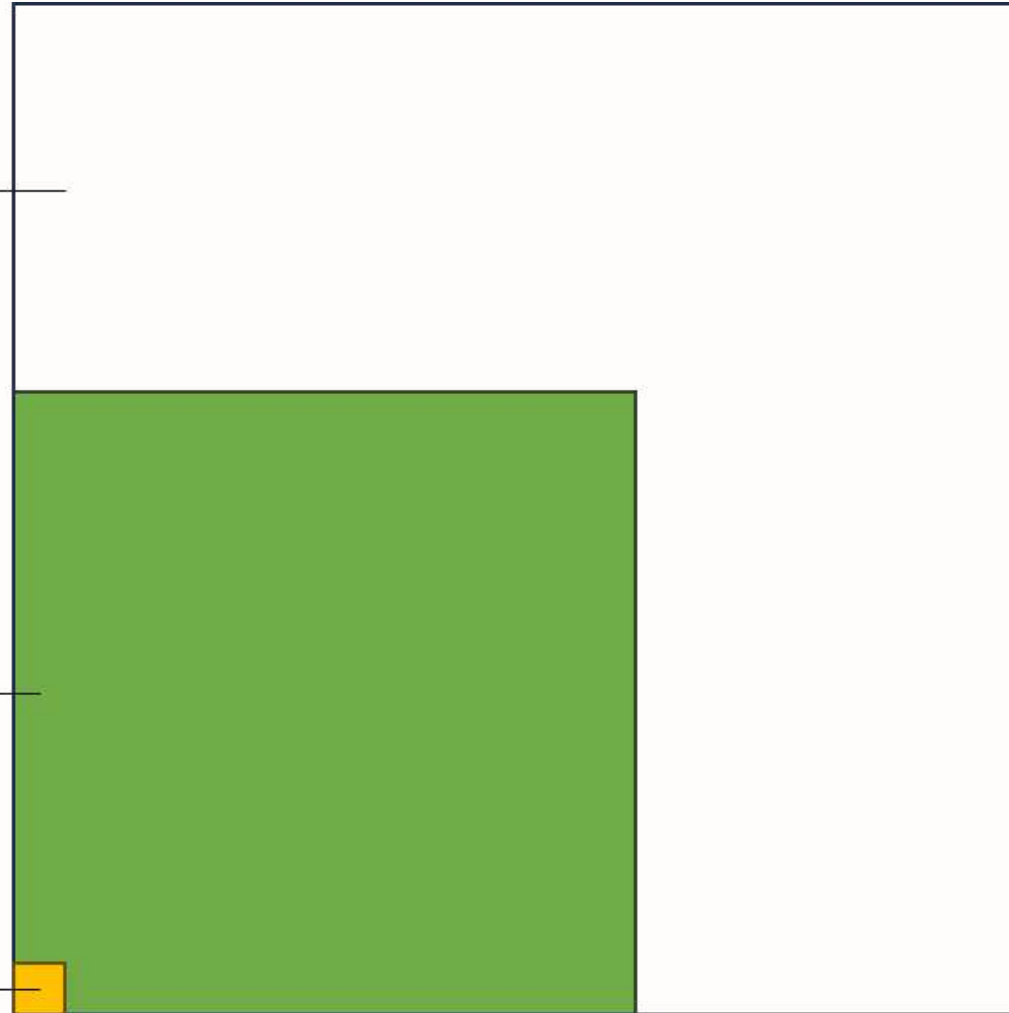




EU

FARMLAND

SOLAR







DISTRICT ENERGY AND OTHER SOLUTIONS

EUROHEAT

