



# ACCELERATING SOLAR DEVELOPMENT USING GEOSPATIAL ANALYSIS

ESMAP Solar Learning Event - 03 to 05 February 2019

Nicolas Chouleur - Partner

experts | evolving | energy

# ① WHO WE ARE

# EXPERTS IN RENEWABLES AND STORAGE

## Our technologies



15 full time staff who worked on over 5GW of projects in 2018 alone.



16 full time staff who have worked on over 17GW of projects across two decades.



7 full time staff who have delivered 85 projects across three continents

Supported by strong network of sub-contractors including:

- Atkins – Grid
- SLR – Environment and planning
- Geospatial Enterprises - GIS

## Our team experience



RED SHOWS COUNTRIES THAT THE TEAM HAVE WORKED IN

## A selection of our clients



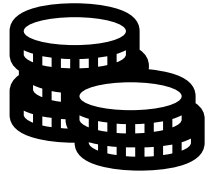
SENIOR, FLEXIBLE TEAM WITH  
EXPERIENCE ACROSS THE GLOBE



## ② OUR UNDERSTANDING OF YOUR CHALLENGES

# THREE KEY CHALLENGES

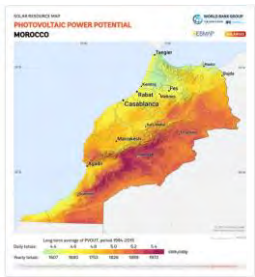
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- STRONG DESIRE TO DEPLOY RENEWABLES BUT AT LEAST COST



- HOW TO OPTIMIZE THE INTEGRATION OF RENEWABLES INTO THE EXISTING GRID



- SEEN THE RESOURCE MAPS BUT NOT SURE WHAT TO DO NEXT

# CHALLENGE I: RENEWABLES AT LEAST COST

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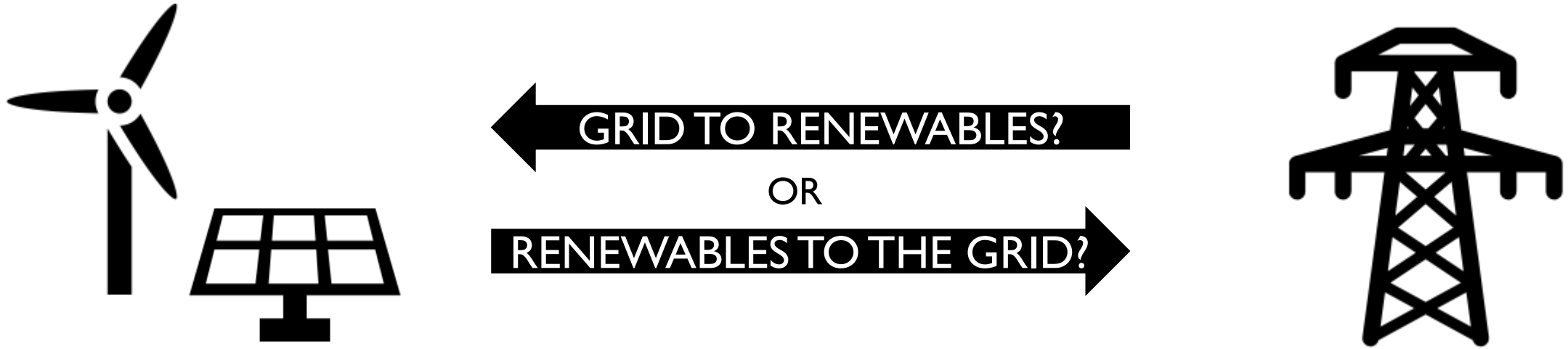
A STRATEGIC AND STREAMLINED APPROACH IS NEEDED:

- PRIORITISE “BEST” AREAS FOR DEVELOPMENT
- MINIMIZE ADDITIONAL INFRASTRUCTURE INVESTMENT
- OPTIMIZE RISK ALLOCATION



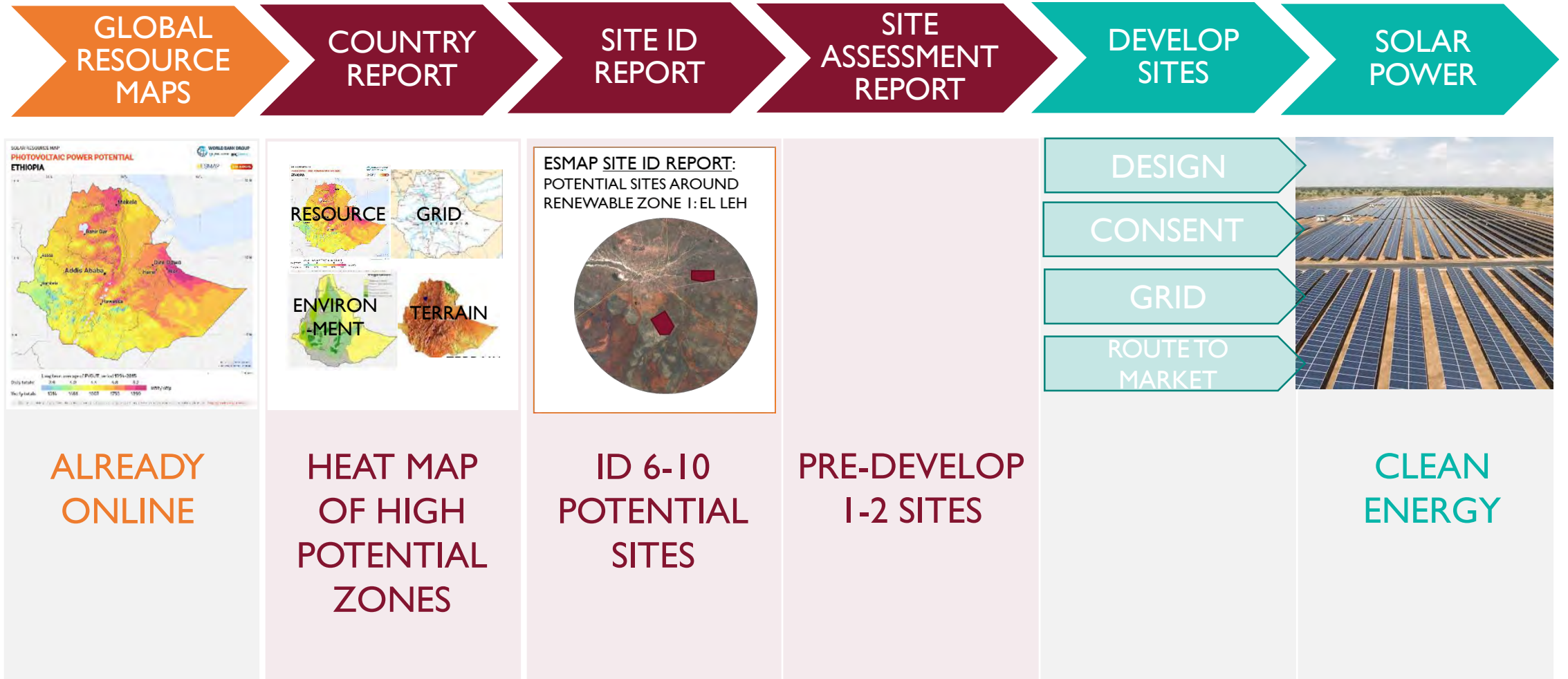
# CHALLENGE 2: HOW TO MAXIMISE VALUE FROM THE GRID

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- PRIORITISING SITES WITH SPARE CAPACITY
- CO-LOCATION WITH OTHER TECHNOLOGIES WITH DIFFERENT GENERATION PROFILES (I.E. WIND AND HYDRO)
- USING STORAGE TO HELP MANAGE GRID INTEGRATION ISSUES AND DEFER UPGRADES

# CHALLENGE 3:WHAT NEXT?



ADDITIONAL OPTIONS INC. PRELIMINARY GRID INTEGRATION STUDY; PRE-FEASIBILITY STORAGE STUDY; ENVIRONMENTAL SCREENING; SITE ASSESSMENT REPORT



## ③ COUNTRY REPORT

# GIS ANALYSIS



**BERKELEY LAB**

Multi-criteria Analysis for Planning Renewable Energy

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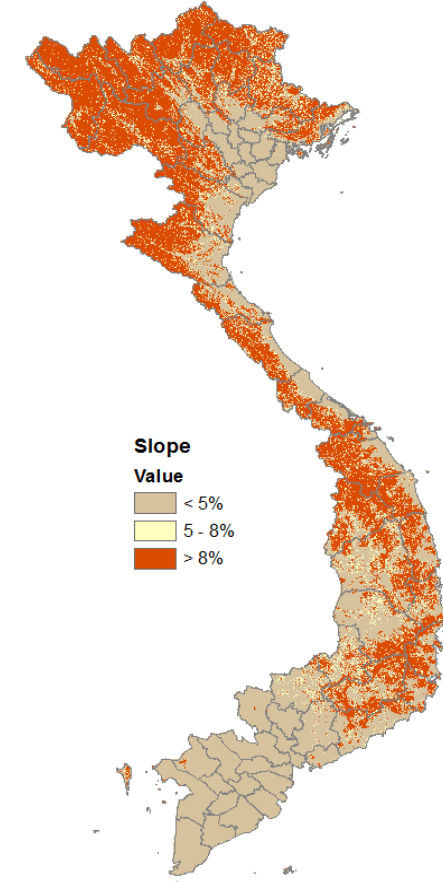
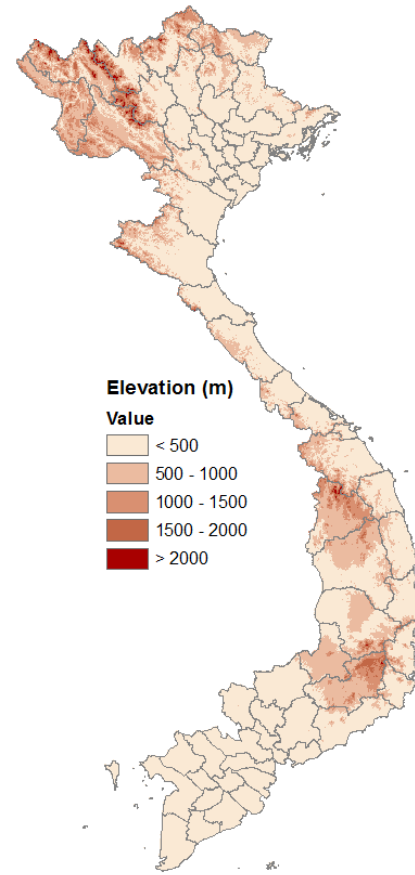
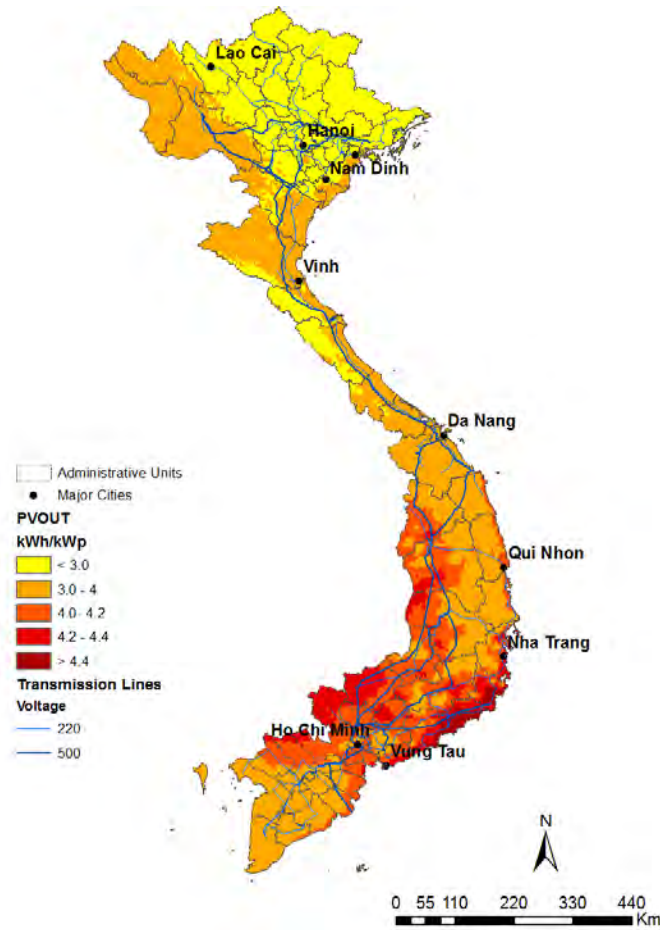
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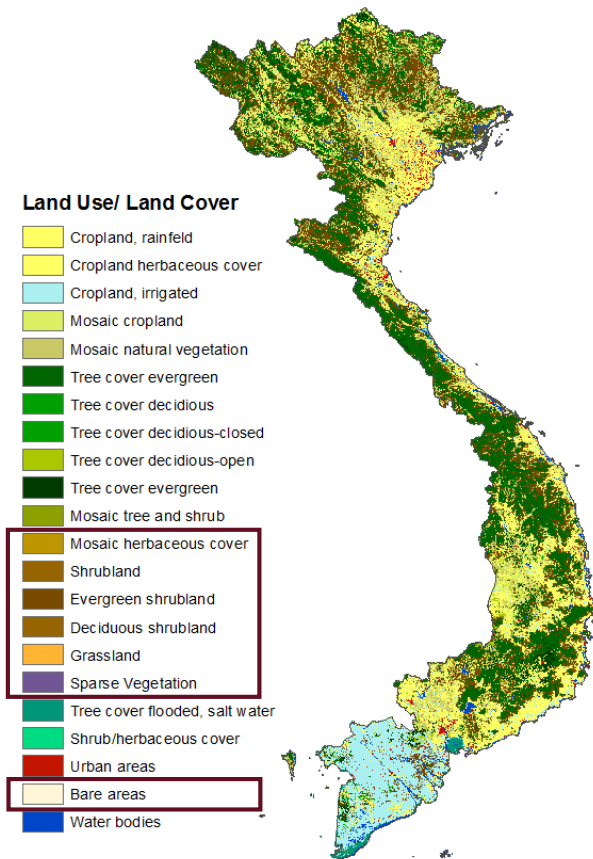
A large version of the MAP RE logo is centered over a satellite map of a coastal region. The map shows land in shades of green and brown, and water in blue. Several small green crosshair markers are scattered across the land area. The letters "GP" and "HI" are visible on the map, likely representing geographical coordinates or place names. The logo itself is white and orange, with "MAP" in white and "RE" in orange, both in a bold sans-serif font, enclosed in a thin white border.

Multi-criteria Analysis for Planning  
**Renewable Energy**

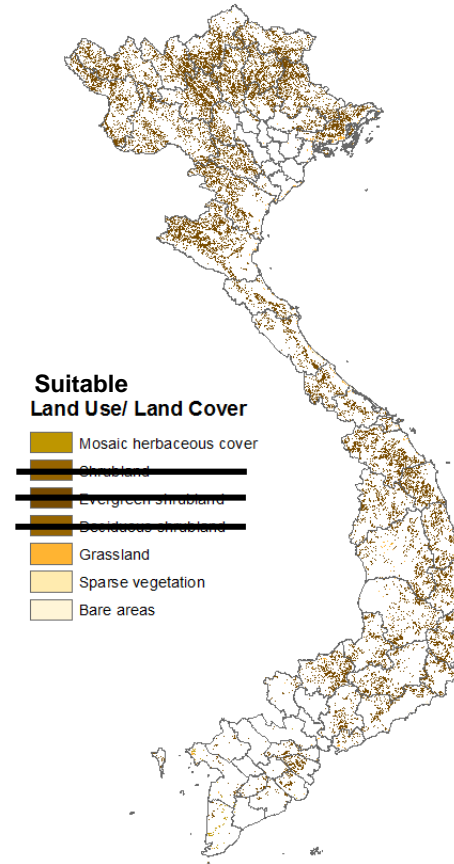
# INPUT MAPS: INSOLATION, ELEVATION, & SLOPE



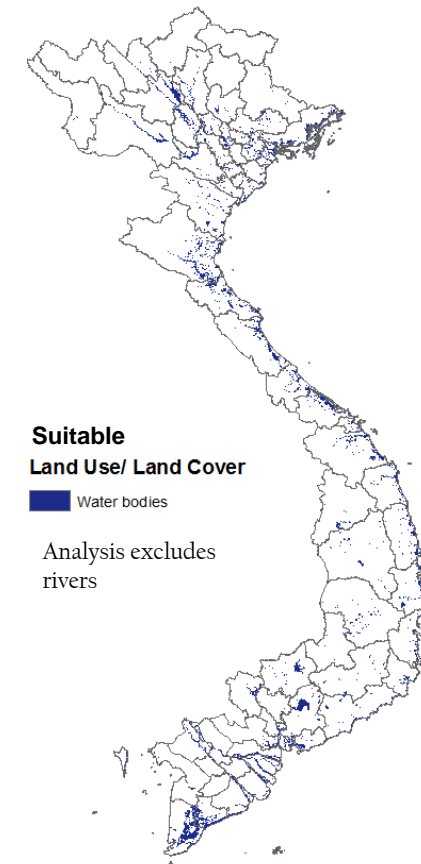
# INPUT MAPS: LAND USE / LAND COVER



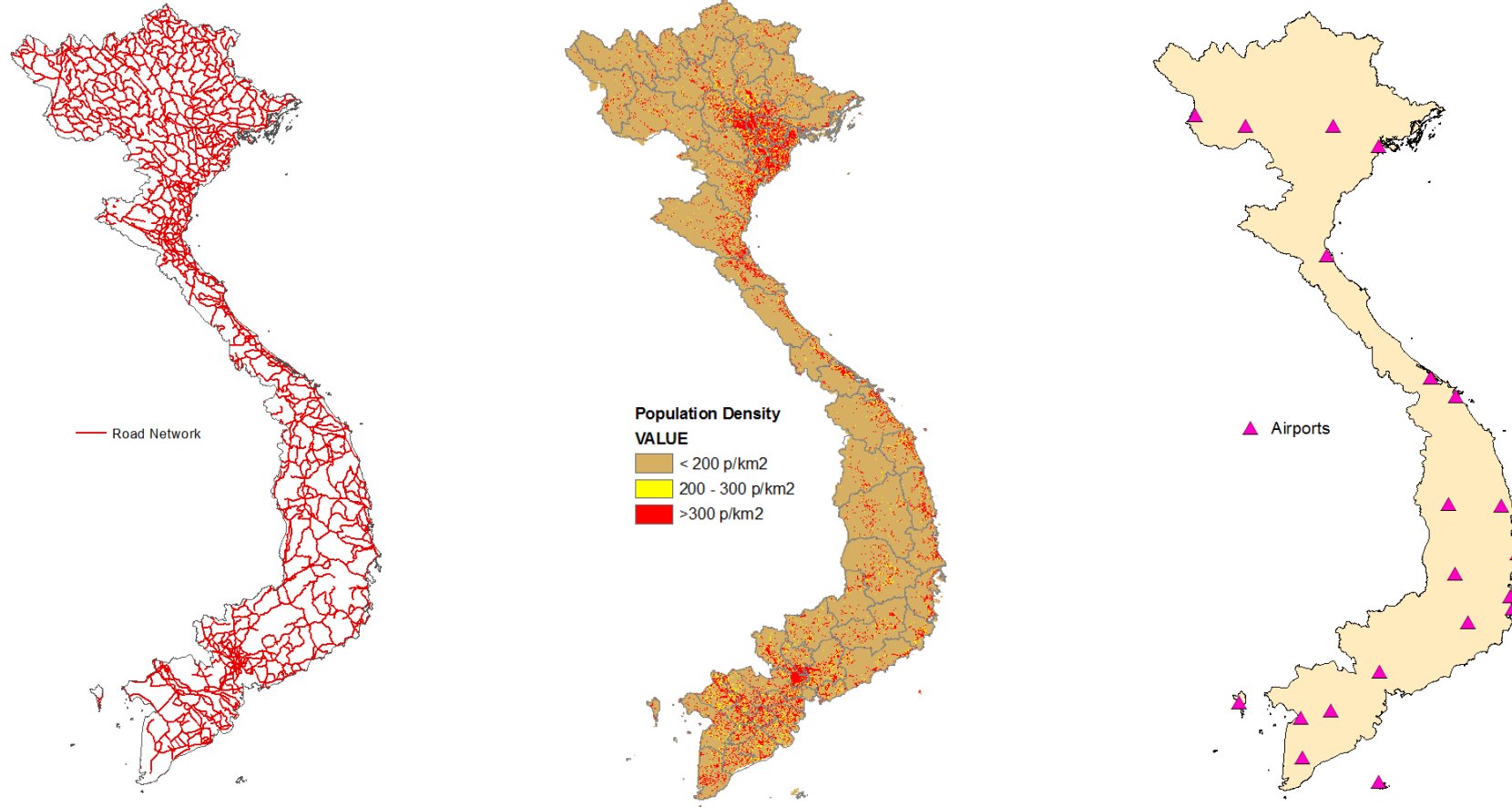
**Ground-mounted PV suitable land covers**



**Floating Solar suitable land cover**

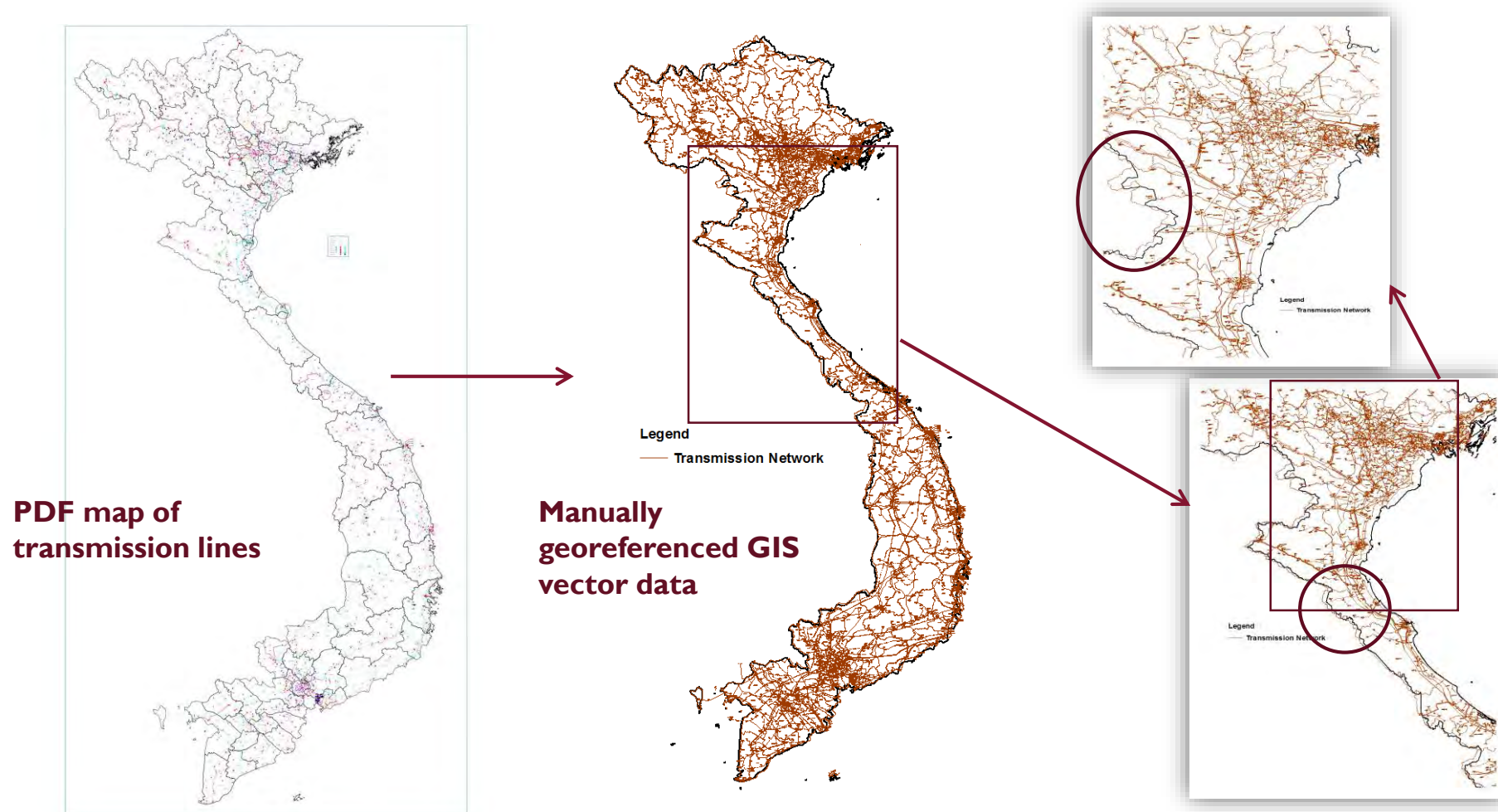


# INPUT MAPS: ROADS, POPULATION, & AIRPORTS

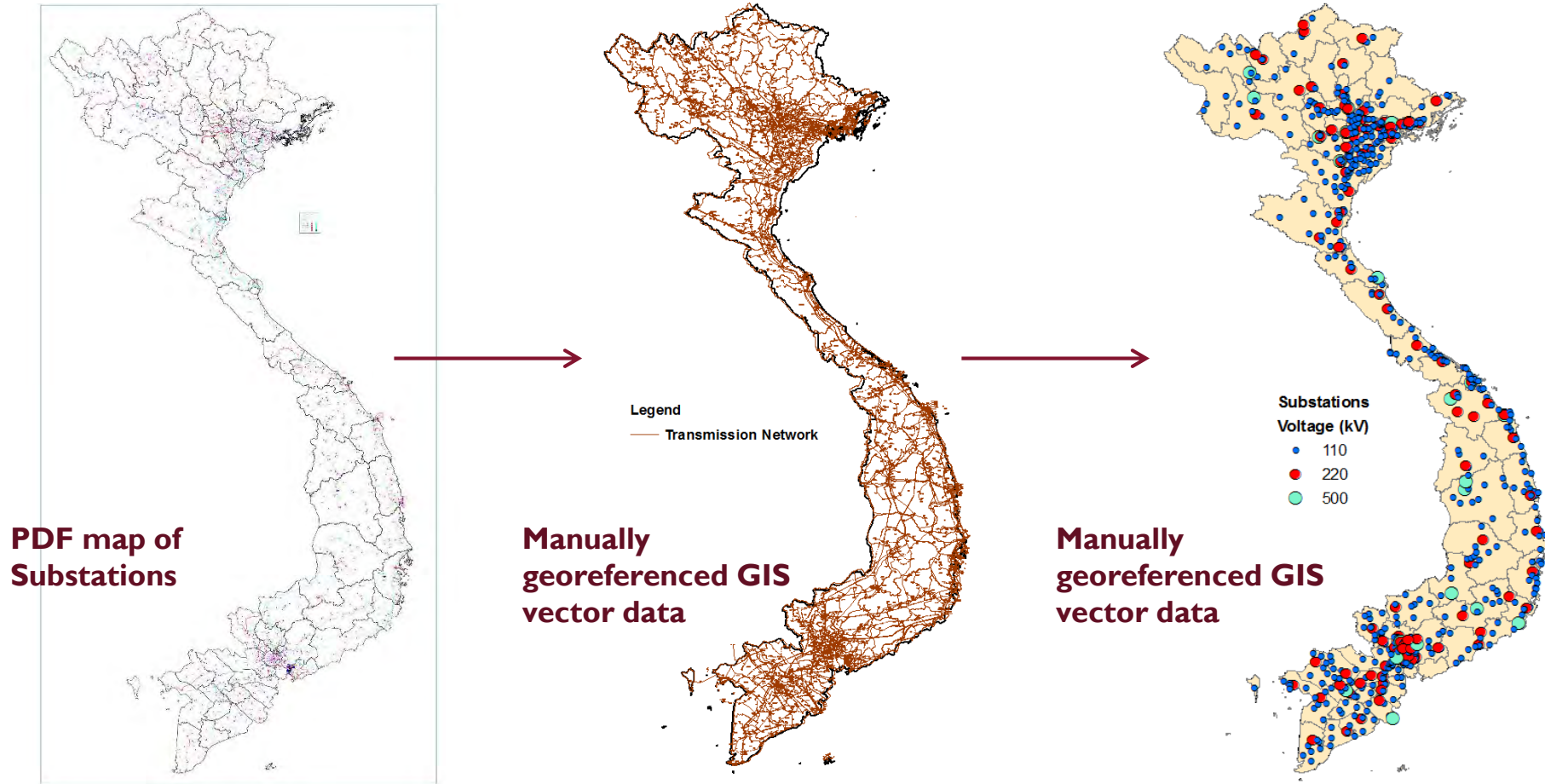




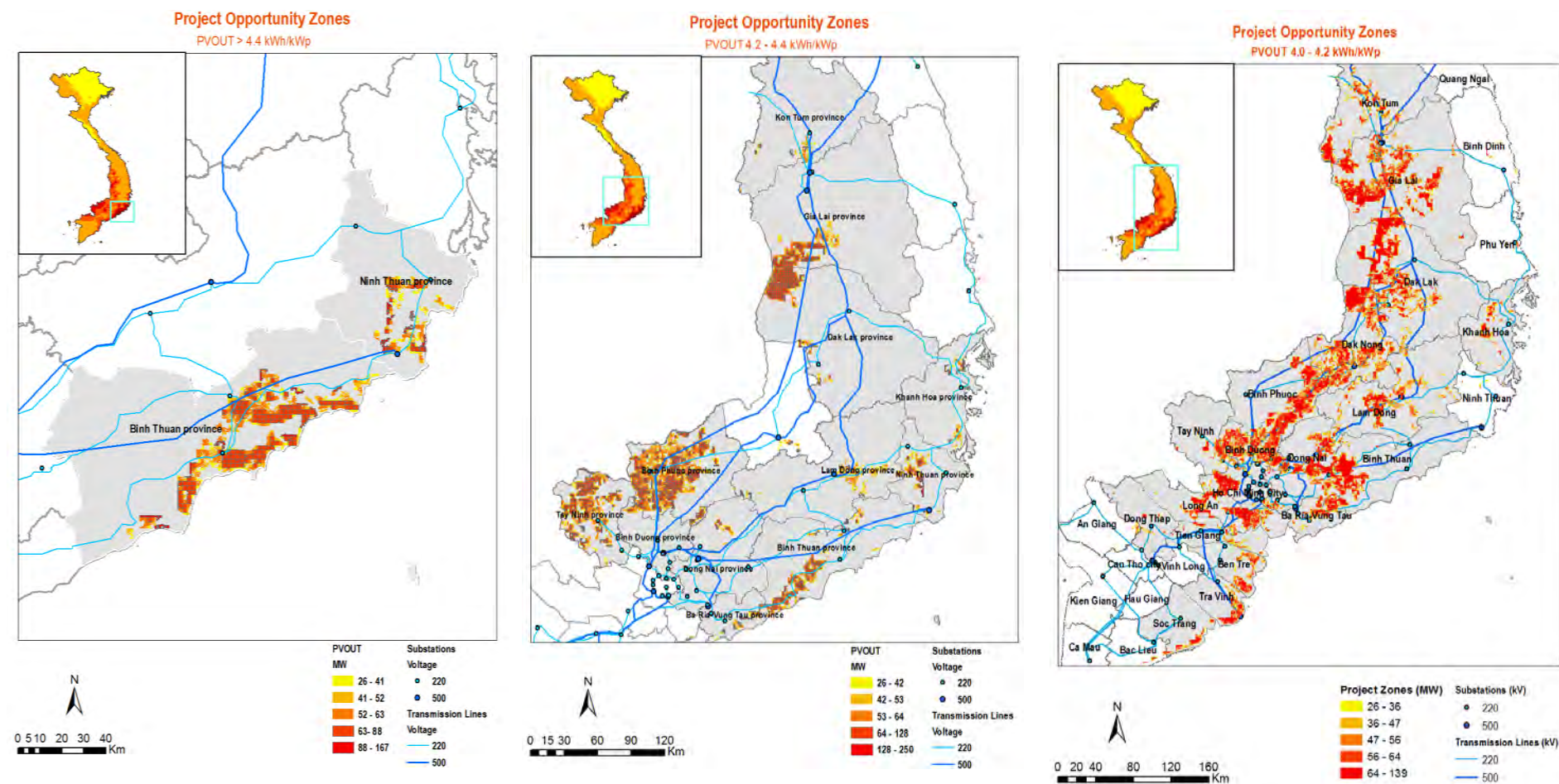
# INPUT MAPS: TRANSMISSION NETWORK



# INPUT MAPS: SUBSTATIONS



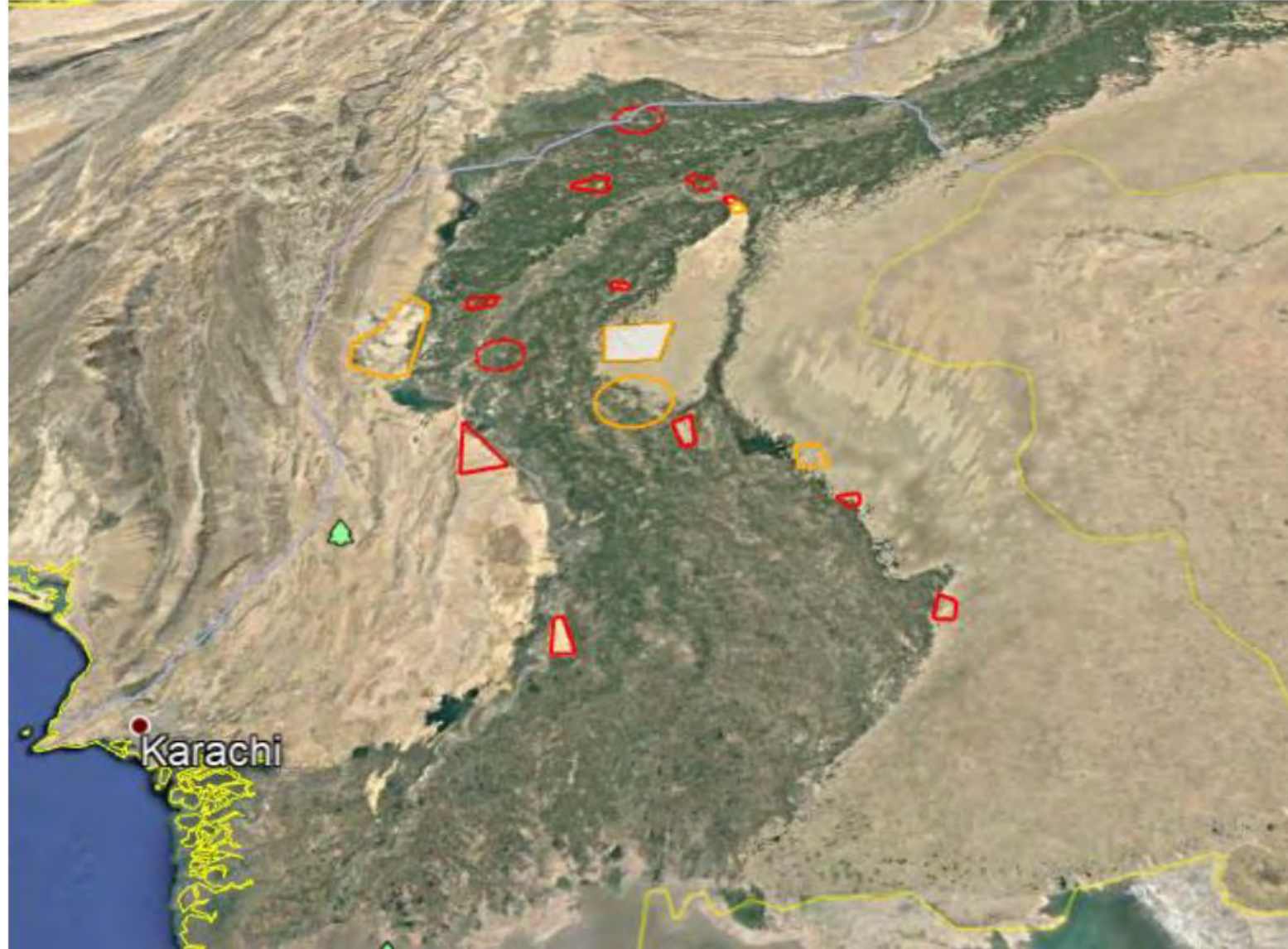
# CONCLUSION: PROJECT OPPORTUNITY ZONES





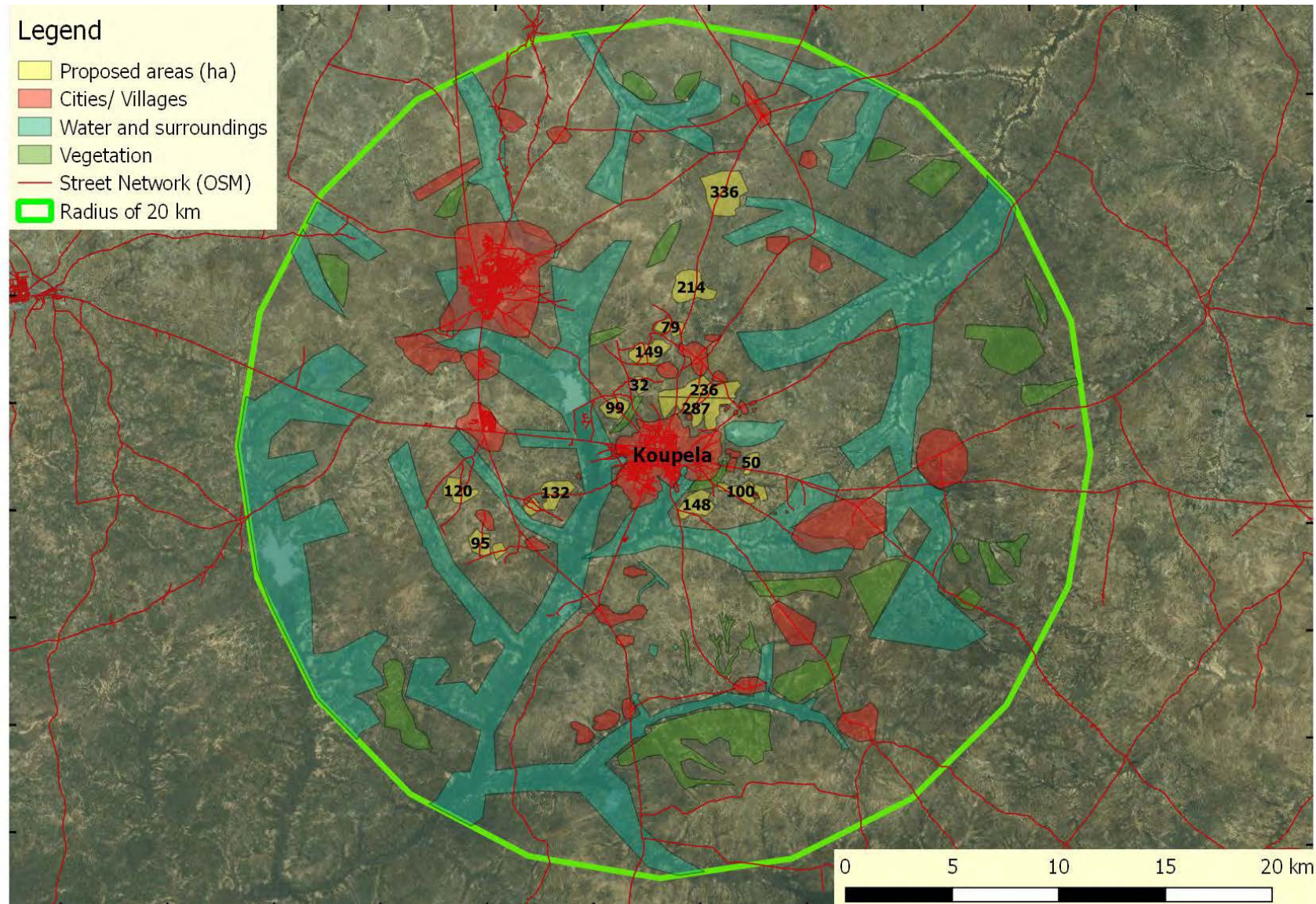
## ③ SITE IDENTIFICATION REPORT

# ASSESSING CAPACITY ON EXISTING GRID





# SPARE CAPACITY AROUND A SUBSTATION

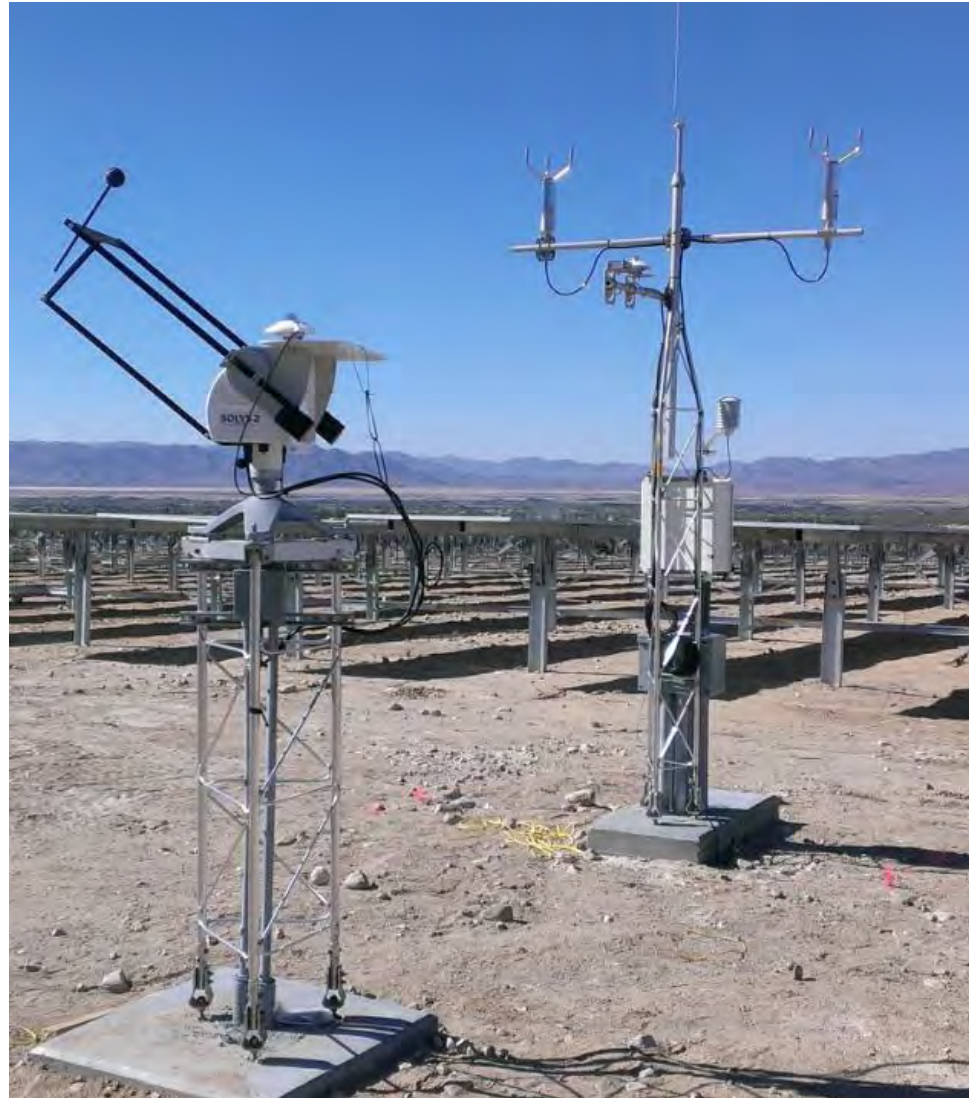


## ③ SITE ASSESSMENT REPORT



# RESOURCE DATA

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# GRID

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# ENVIRONMENT

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# TERRAIN

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# DUST AND SOILING

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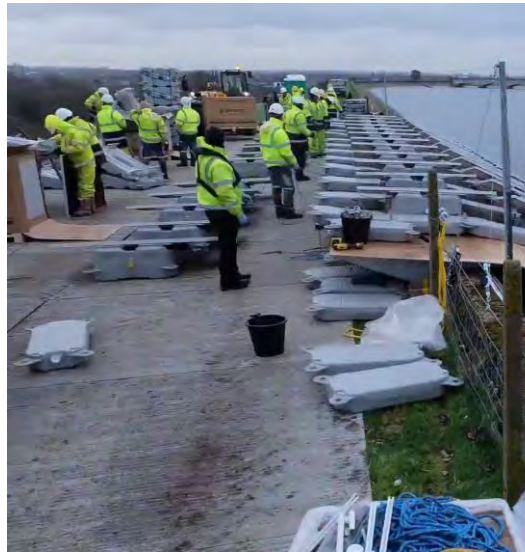


# FLOODING / FLOATING PV?





# LOGISTIC ISSUES





# NEVER FORGET COMMON SENSE



# GEOSPATIAL PLANNING AND SOLAR AUCTION MODELS

MORE WORK FOR GOVERNMENT  
= DECREASED RISK

LOCATION  
AGNOSTIC  
AUCTIONS

Government auctions a predetermined capacity (MW), allowing the **developer to choose** **project location without limitations**

COUNTRY  
REPORT

SUB-STATION  
AUCTIONS

Government auctions a capacity (MW) around **identified sub-stations** up to a level capped by interconnection limits

SITE ID  
REPORT

SOLAR PARK  
AUCTIONS

Government **identifies and develops a solar park** and auctions capacity within the park

SITE  
ASSESSMENT  
REPORT

Thanks for listening

Talk to us

[contact@everoze.com](mailto:contact@everoze.com)

[everoze.com](http://everoze.com)

 [@everozepartners](https://twitter.com/everozepartners)



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