



# GWFF

GEOSPATIAL WORLD FORUM

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# NEO Solutions - energy and asset monitoring

Fang Fang, May 2024



**NEO**

For earth observation

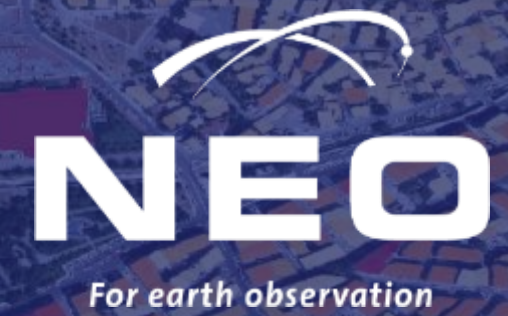


# Who are we?

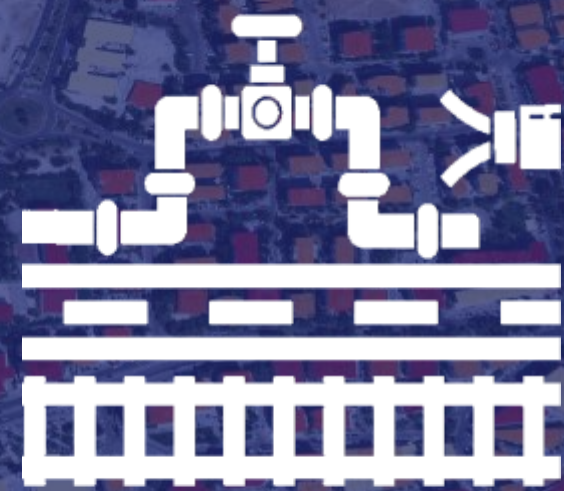
- **Geospatial solution expertise**
- **GEO – AI**
- **Big data, EO and other**
- **Innovation**
- **Scalable**
- **Actionable**
- **28 years tracking-record**

- ✓ **Better data, better decisions, better planet**
- ✓ **Cost and time efficiency**
- ✓ **Improve working/business process**

# NEO | Solution & Services



Habitat  
monitoring



Infrastructure  
sustainability



Energy  
transition



Agriculture &  
Rural area

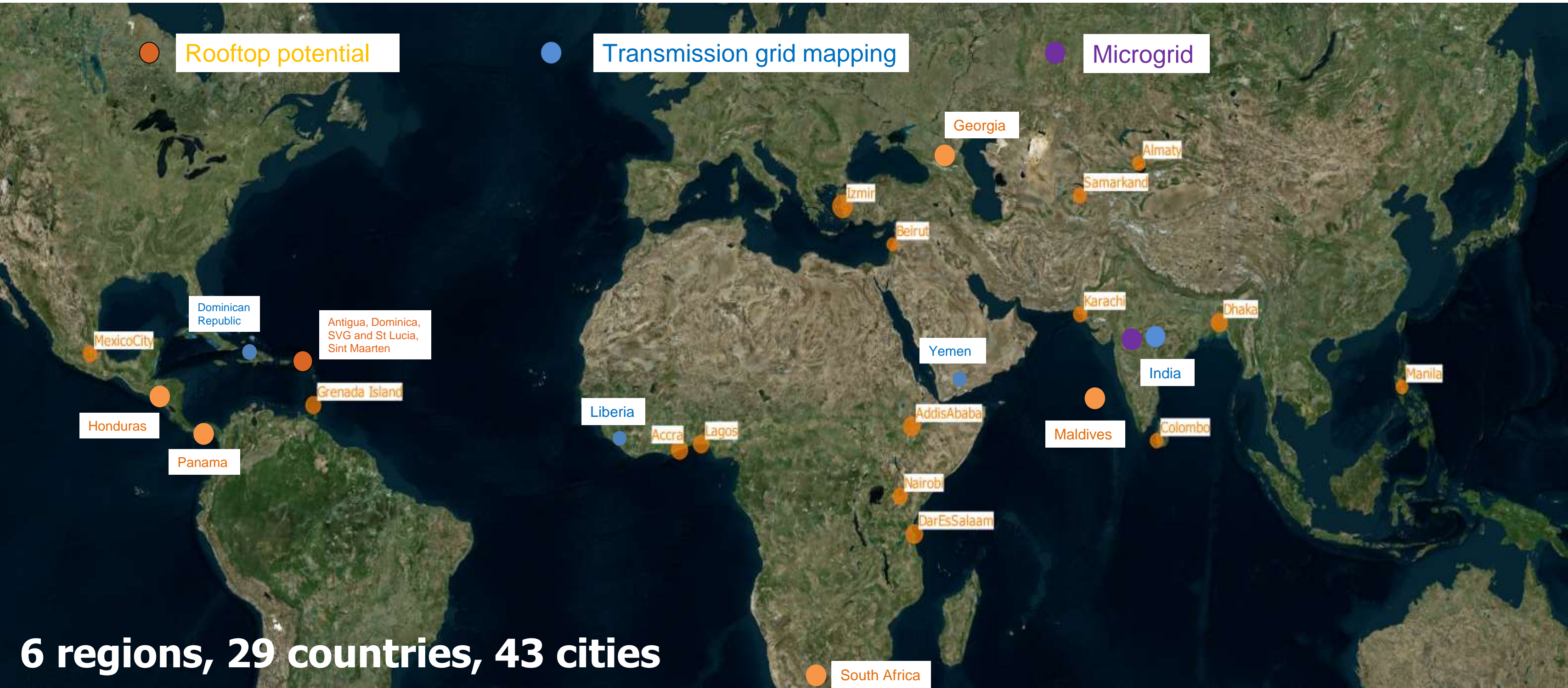


Environment  
Blue zone

Government | Enterprise | Organisation

National | International

# World Bank projects – geographic coverage



# GLOBAL ROOFTOP SOLAR PV POTENTIAL TOOL



38,000

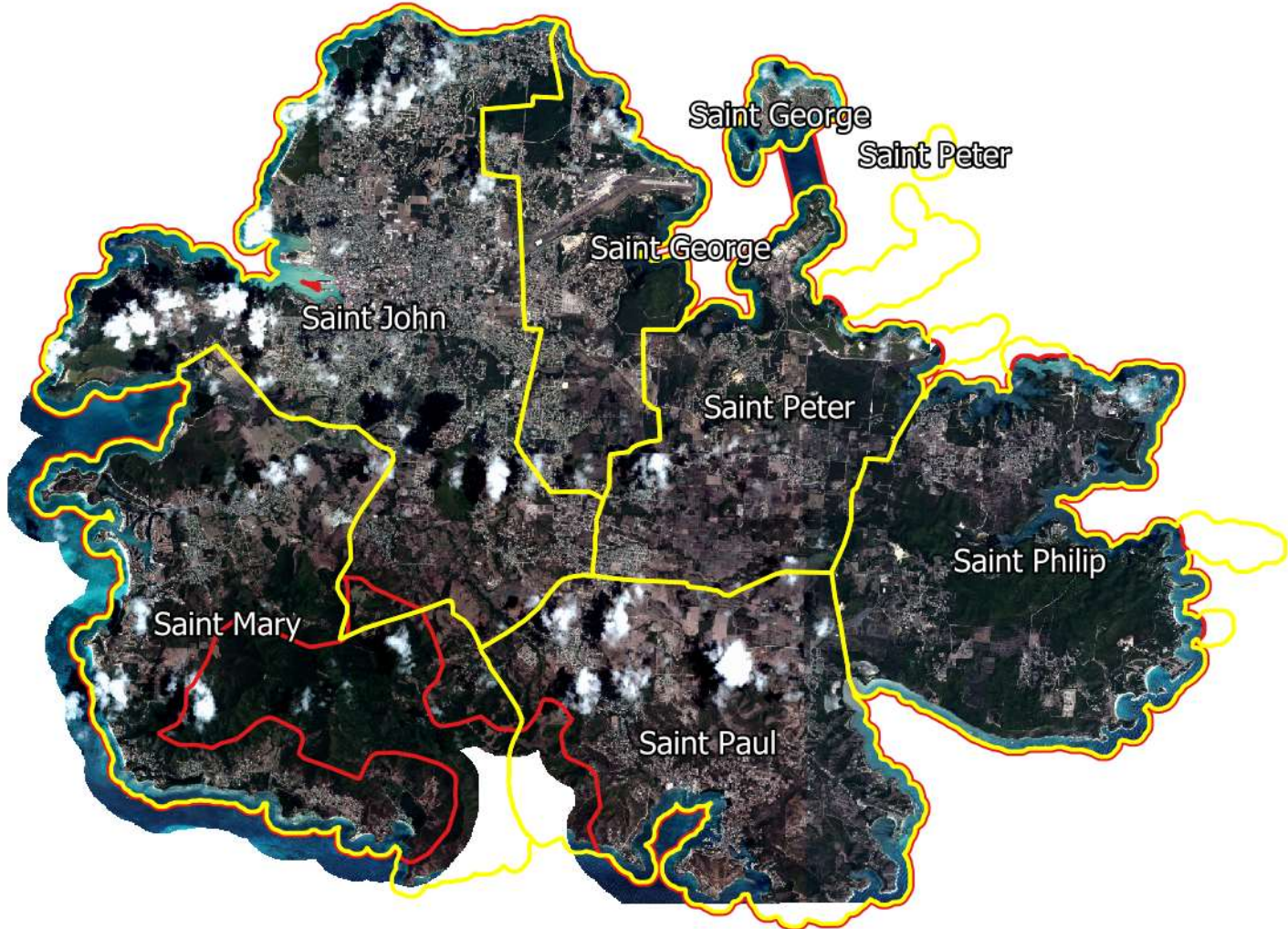


2,800

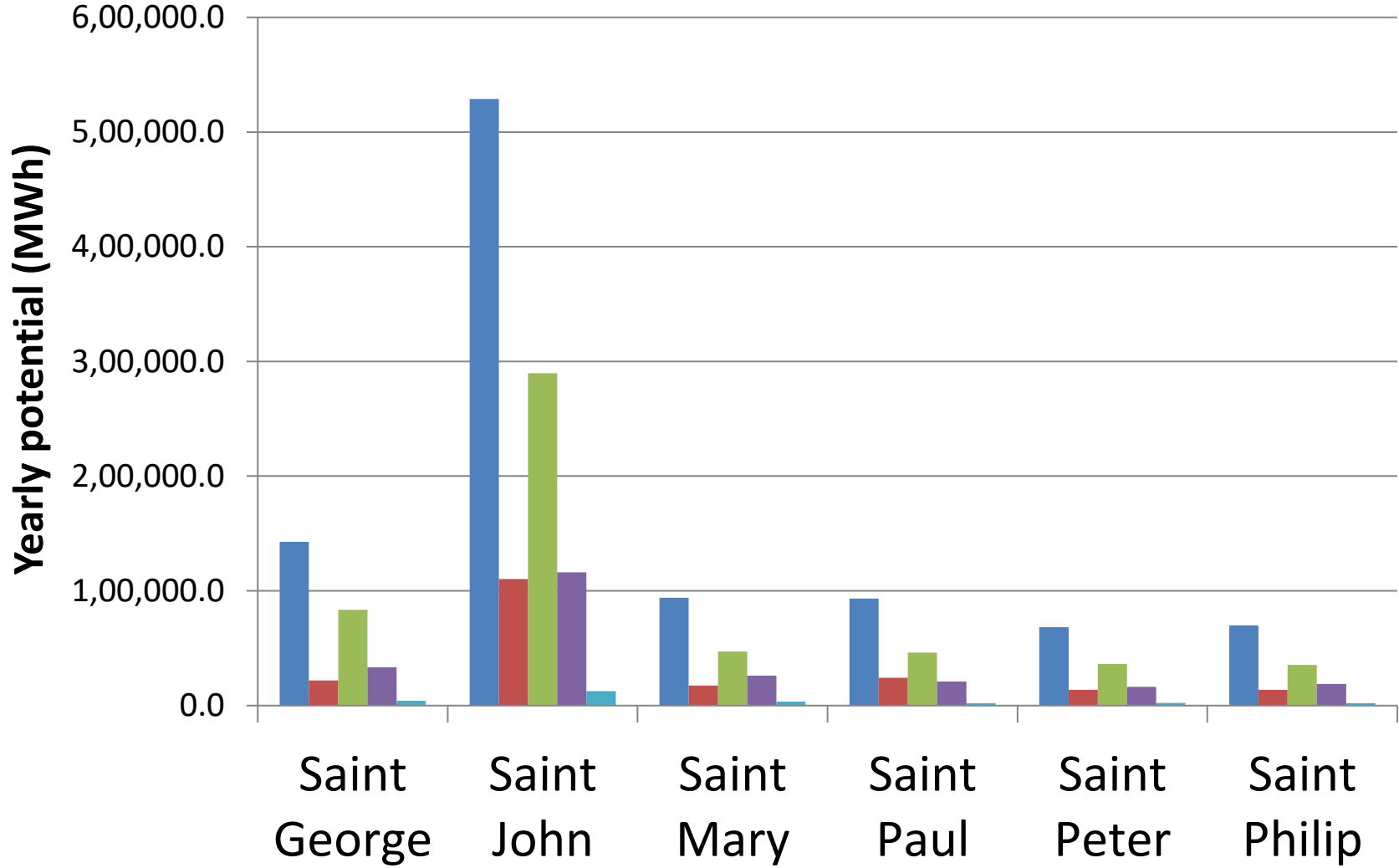


SCAN THE QR-CODE  
TO PREVIEW THE VIEWER

# Rooftop Solar Analysis – Regional level



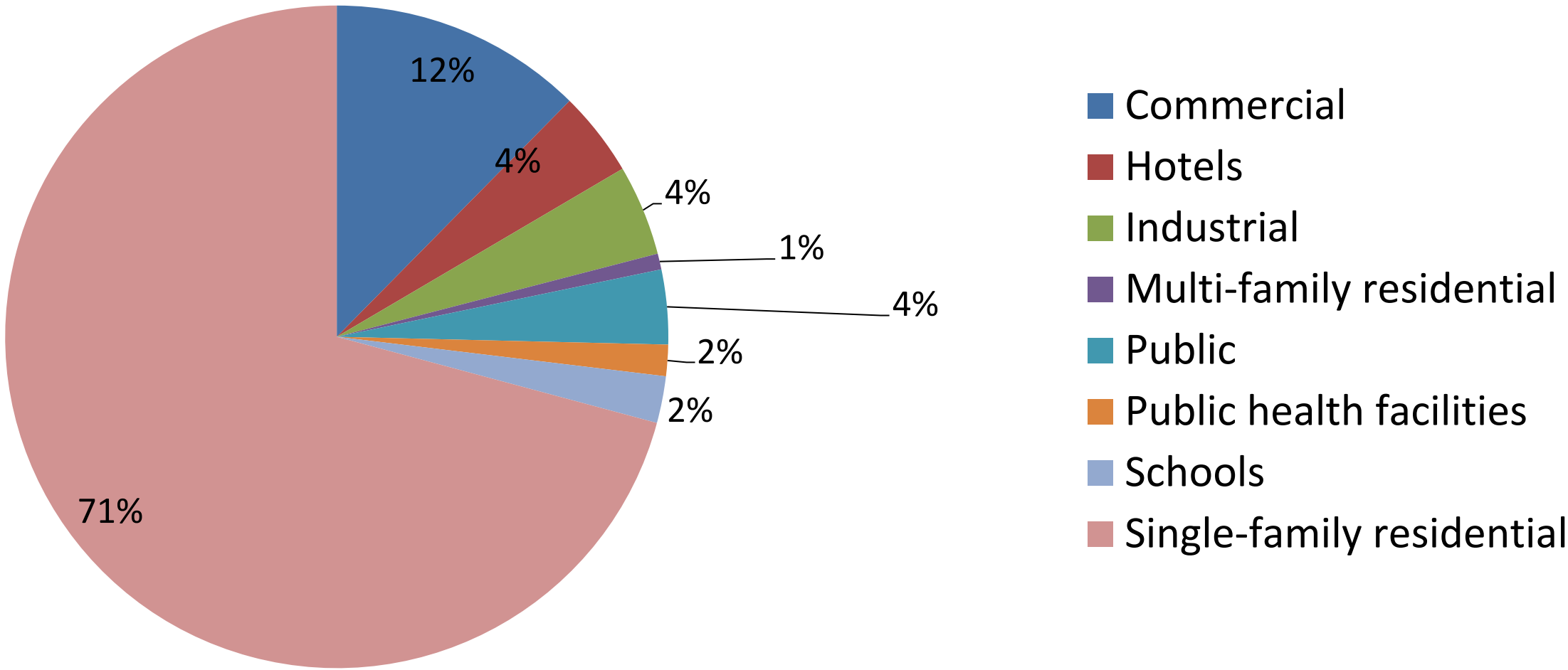
- Total estimated roof PV potential
- tilt roofs (10-20) PV potential
- tilt roofs (>30) PV potential
- flat roofs (<10) PV potential
- tilt roofs (20-30) PV potential



Yearly Potential Generation (KWh) distribution among different regions



# Rooftop Solar Analysis – Sector level



Yearly Potential Generation (KWh) distribution among different sectors

# Rooftop Solar Analysis – Cost Estimation

## Flat Roof

(tilt angle < 10)

metallic structure

Estimate unit price:

**3000 USD/kWp**

Region	Total Surface area(m2)	Estimated suitable area for installation(m2)	Installation Price (USD)
Saint George	113,642	69,032	\$40,177,918
Saint John	663,009	356,588	\$207,535,040
Saint Mary	114,139	56,394	\$32,823,187
Saint Paul	159,229	76,595	\$44,577,372
Saint Peter	77,076	43,397	\$25,257,414
Saint Philip	69,633	41,727	\$24,283,954
<b>Sum Flat roof</b>	<b>1,196,727</b>	<b>643,733</b>	<b>\$374,654,883</b>

## Tilt Roof

(tilt angle > 10)

Flush mount

Estimate unit price :

**2200 USD/KWp**

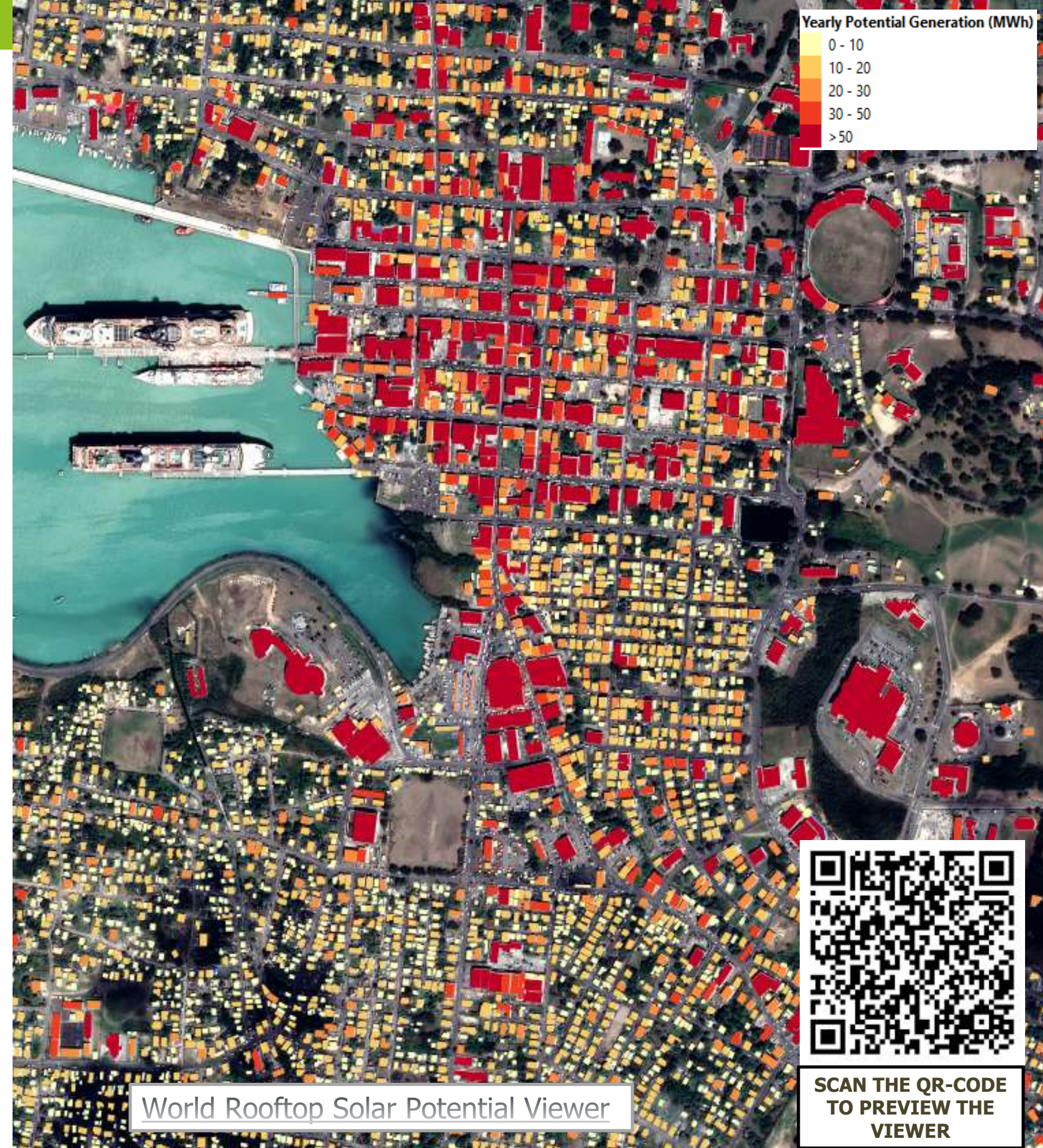
Saint George	739,704	408,339	\$174,283,387
Saint John	2,667,903	1,440,826	\$614,952,324
Saint Mary	500,529	265,290	\$113,227,029
Saint Paul	417,227	230,386	\$98,329,592
Saint Peter	339,729	185,337	\$79,104,110
Saint Philip	336,324	183,128	\$78,158,244
<b>Sum Tilt roof</b>	<b>5,001,417</b>	<b>2,713,307</b>	<b>\$1,158,054,686</b>
<b>Total</b>	<b>6,198,144</b>	<b>3,357,039</b>	<b>\$1,532,709,569</b>

# Rooftop Solar viewer

## User response

City	Views	Likes
Mexico city	2294	249
Karachi	2359	156
Almaty	2487	148
Samarkand	2294	152
Izmir	2270	211
Accra		
Lagos		
AddisAbeba		
Nairobi		
Manila		
Colombo		
Dhaka		
Beirut		
DarEsSalaam	991	184
Grenada	2411	66
Antigua	1467	
Dominica	885	
SVG	1170	
St Lucia	930	
Maldives	56	
Sint Maarten	123	
<b>Total</b>	<b>38,178</b>	<b>2,732</b>

Government organizations  
 Energy solution providers  
 Solar panel installers  
 Educational institutions



World Rooftop Solar Potential Viewer



SCAN THE QR-CODE  
 TO PREVIEW THE  
 VIEWER

# Global rooftop solar viewer Beta version

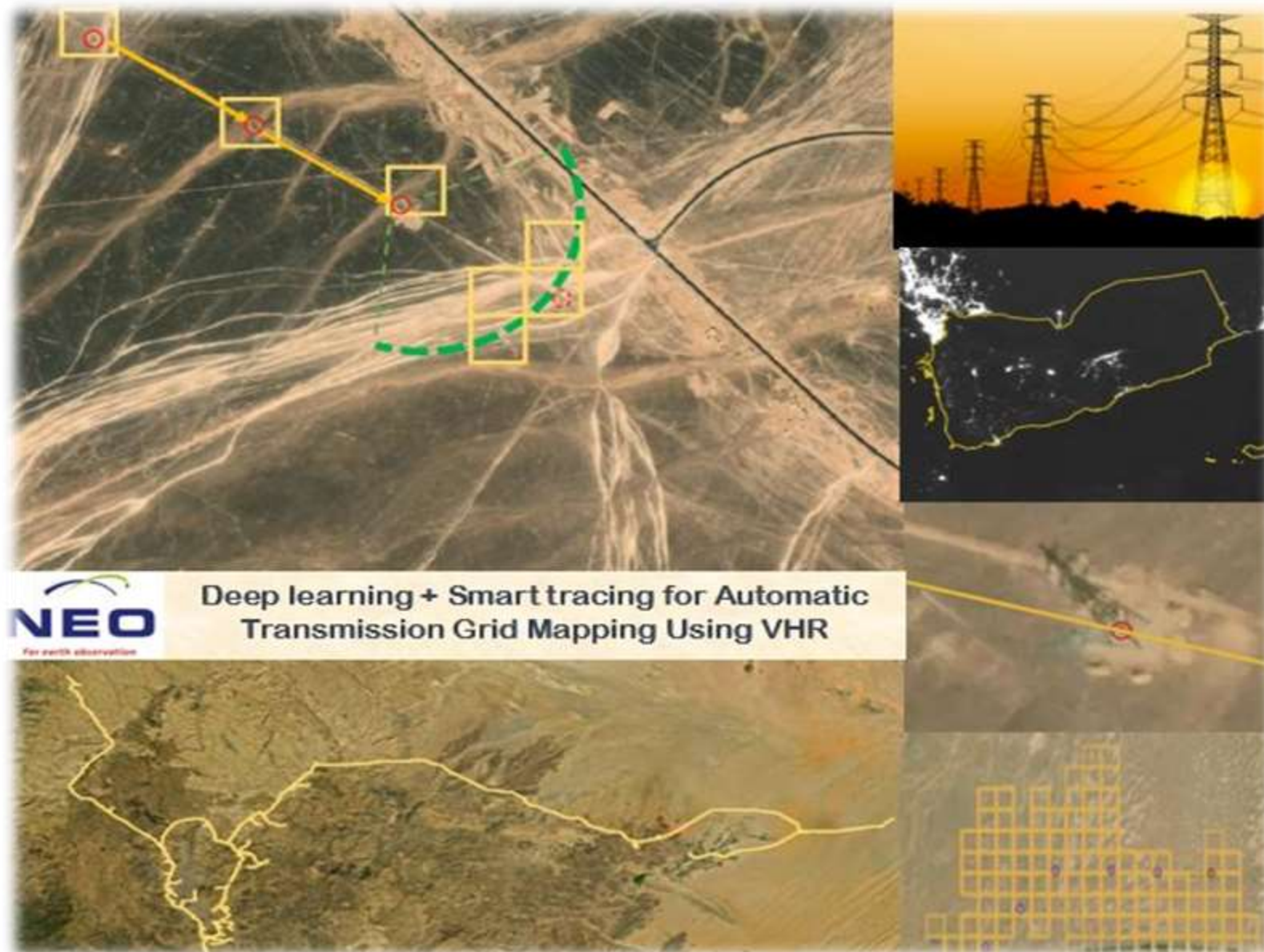


The screenshot shows the landing page of the 'Global Rooftop Solar Energy Potential Tool'. The main header is a blue box with the text 'WELCOME TO THE Rooftop Solar Energy Potential Tool'. Below this, it states 'Showcase PV generation potential for each individual building rooftop in a given area.' Two large yellow numbers are displayed: '25 CITIES' and '23 COUNTRIES'. There are two buttons: 'Start Exploring' and 'Learning More'. To the right of the text is an illustration of a building with solar panels on its roof under a bright sun. The footer includes the text 'Powered by NEO BV' and logos for ESMAP (Energy Sector Management Assistance Program), IFC (International Finance Corporation, part of the World Bank Group), and NEO. At the bottom, there is a copyright notice: '©2024 Energy Sector Management Assistance Program (ESMAP), All Rights Reserved. | [Legal](#) | [Privacy Notice](#) | [Access to Information](#) | [Contact](#)'.

## Upgrading - What are new?

- More functionalities
- Neat look and user friendly
- More automated for data ingestion and region expansion for scaling up

# Transmission grid mapping at country level



## Inputs:

- Nightlight satellite imagery
- 50cm Very High Resolution satellite imagery
- Land use
- Elevation model

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## Technologies:

- Deep learning
- Smart tracing
- Network analysis

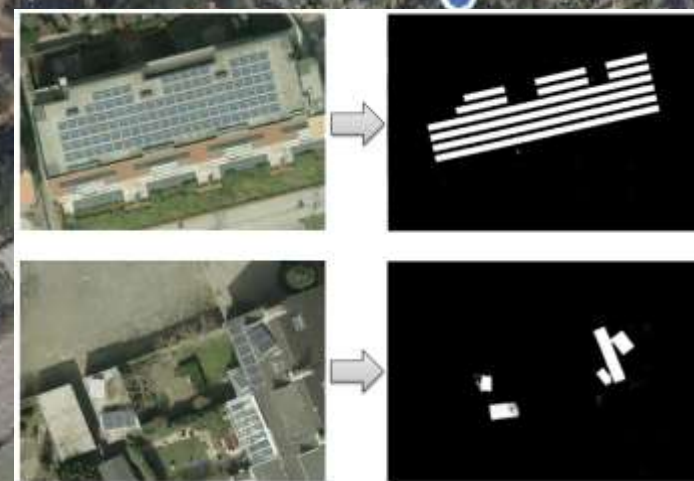
## Goals:

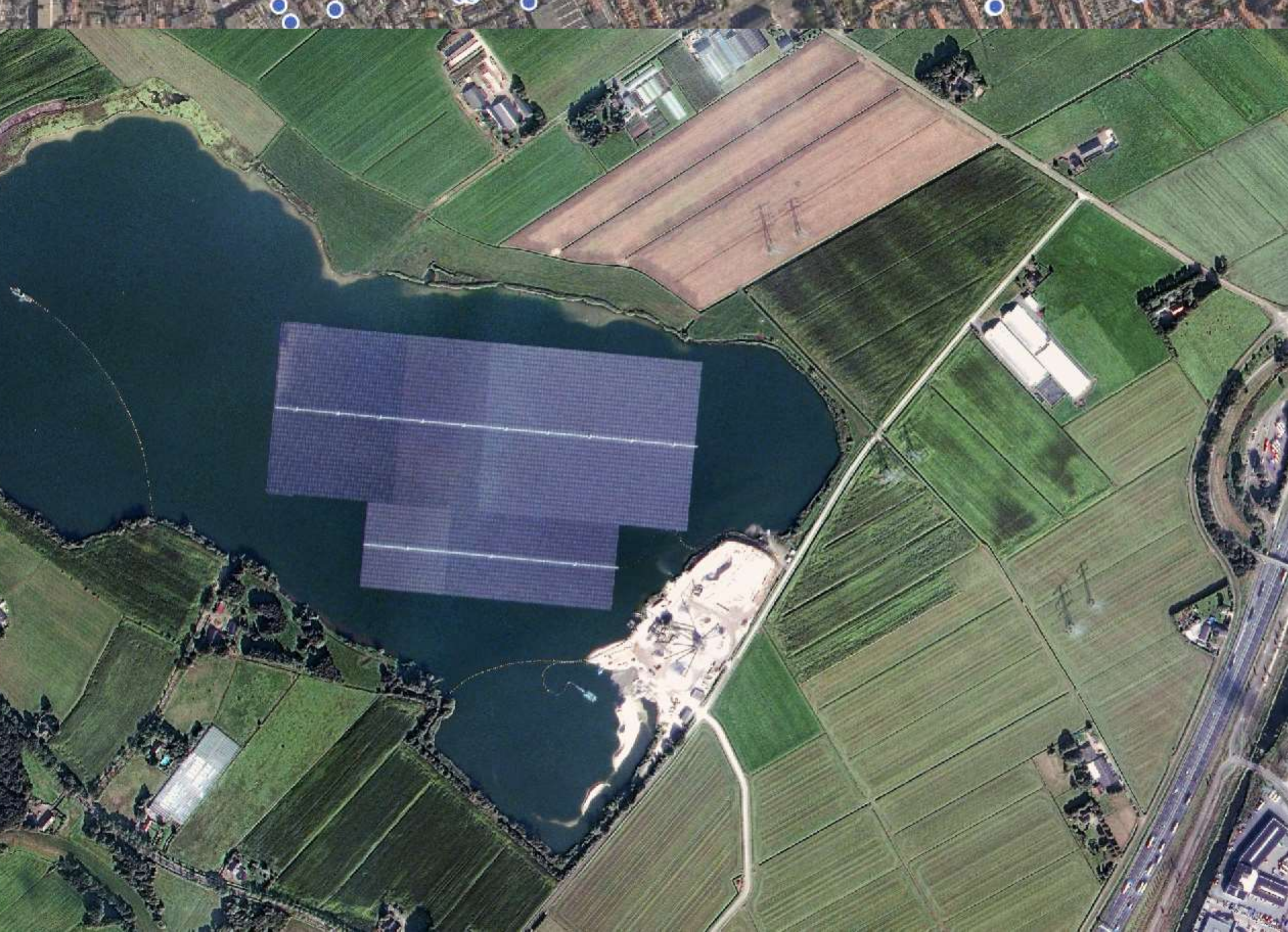
- Scalable
- Replicable to other areas
- Efficiency



# Zonnepanelen.neo.nl

- Nationwide detection and monitoring
- Update 4 times a year
- Integrated other datasets
- Powered with AI
- Online API interface







- Cable length < 200m
- Total number cables connected to station <=6



# Energy solutions – monitoring and asset management



# From challenges to solutions

## Data

- Data to value adding information
- Up-to-date for monitoring
- Level of details
- Reliable service

## Solution

- Assemble data from different sources
- Value adding information
- Actionable insights
- Improve process efficiency
- Better decision making
- Scalable ...



# More information

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