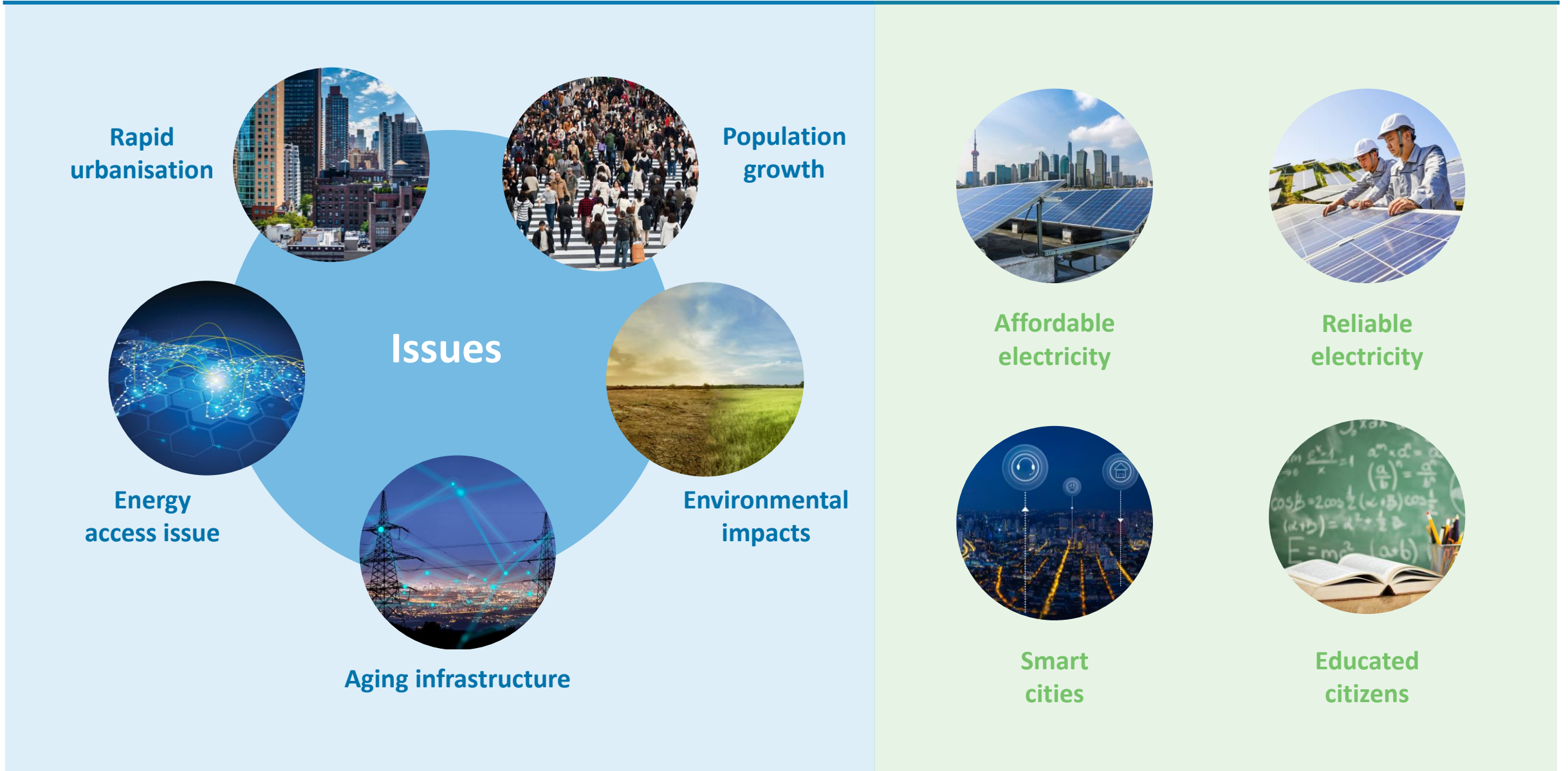


IRENA SolarCity Simulator



Drivers for renewable energy – issues



Rooftop solar PV system – innovative solutions



Sampling

Pilot Projects



Requires
time



Expensive



Results not
guaranteed

VS



Simulator

SOLAR**C**ITY
SIMULATOR



Cost effective



Less time

SolarCity Simulator – objective

SOLARCITY
SIMULATOR

Web application

 IRENA
International Renewable Energy Agency



System design



Policy instruments

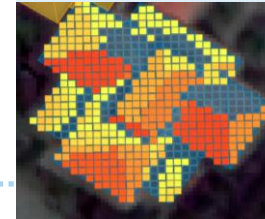


Incentive schemes

Generation and revenue



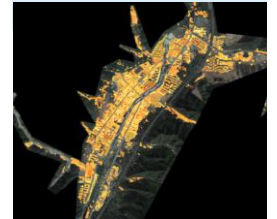
Homeowner



Investor



Government



What are the suitable roof areas?



How much energy
could be generated?



How much is the
investment return?

SolarCity Simulator – methodology

Requirements

 SOLARCITY
SIMULATOR

SolarCity platform

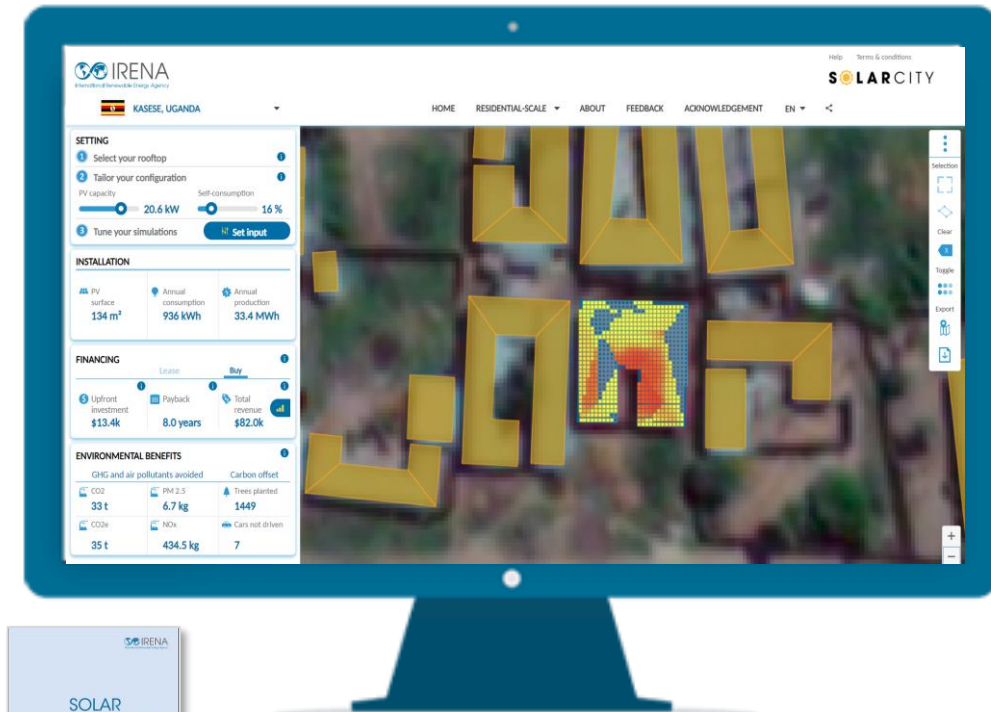
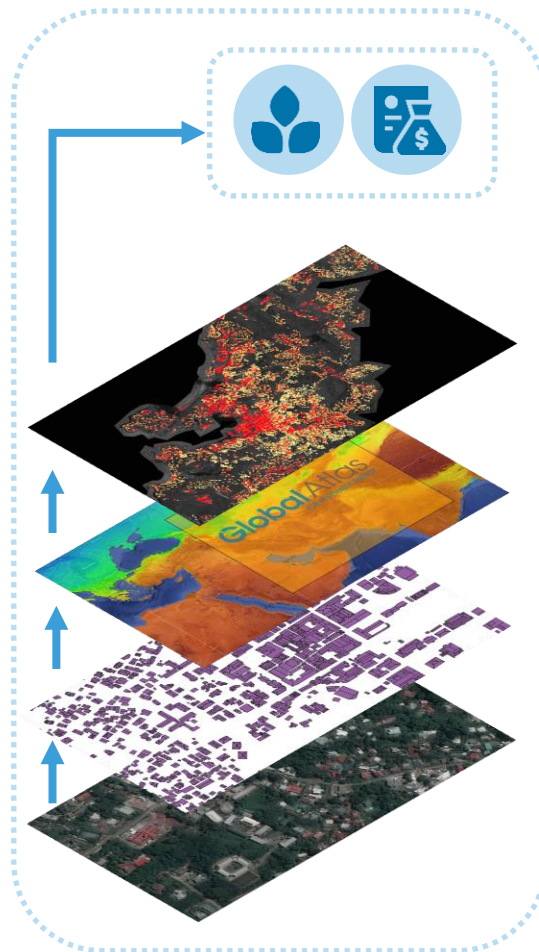
Economic potential
Socio-environmental
benefits

Technical potential

Solar resources

3D building footprint

Satellite imagery



How to use the simulator – input parameters

1 Rooftop

- Roofs
- PV surface

4 Financing

- Loan interest rate
- Load period
- Down payment

7 Environmental impacts

- CO₂ emission factor
- Particulate matter (PM) emission factor
- Nitrogen oxides (NOx) emission factor
- Car emission factor
- Trees sequestering factor

2 Installation (setting)

- PV capacity
- Storage capacity
- Panel efficiency
- Panel lifespan

5 Consumption (setting)

- Self-consumption rate
- Annual consumption
- Electricity price
- Benchmark price

3 System and roof rental cost

- PV system
- Storage
- Maintenance and operation
- Roof rental

6 Policy incentives


- Generation subsidy
- Installation subsidy
- Corporate tax rate
- Corporate tax credit

How to use the simulator – output parameters


1 Installation


 PV surface

 Annual production

 Annual consumption

2 Financing

 Upfront investment
Payback to equity
Total revenue
Net income
Cash flow

 Investment
Payback to equity
Equity Internal Rate of Return

 Alternative energy reduction
Government spending

3 Environmental and social benefits

 CO₂ emission reduction

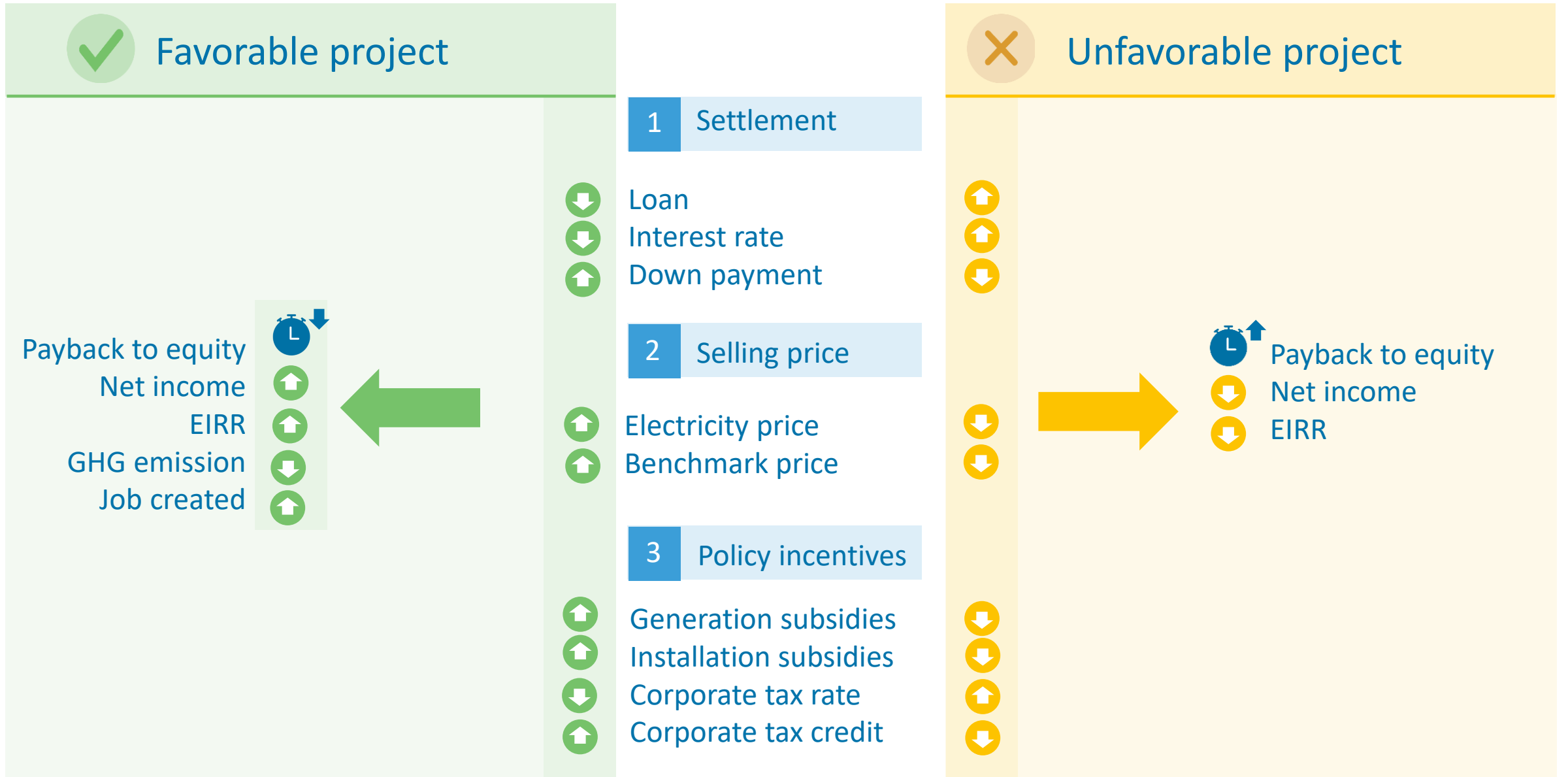
 PM and NOx emission reduction

 Cars not driven

 Trees planted

 Jobs created

How to build a simulation – guidance

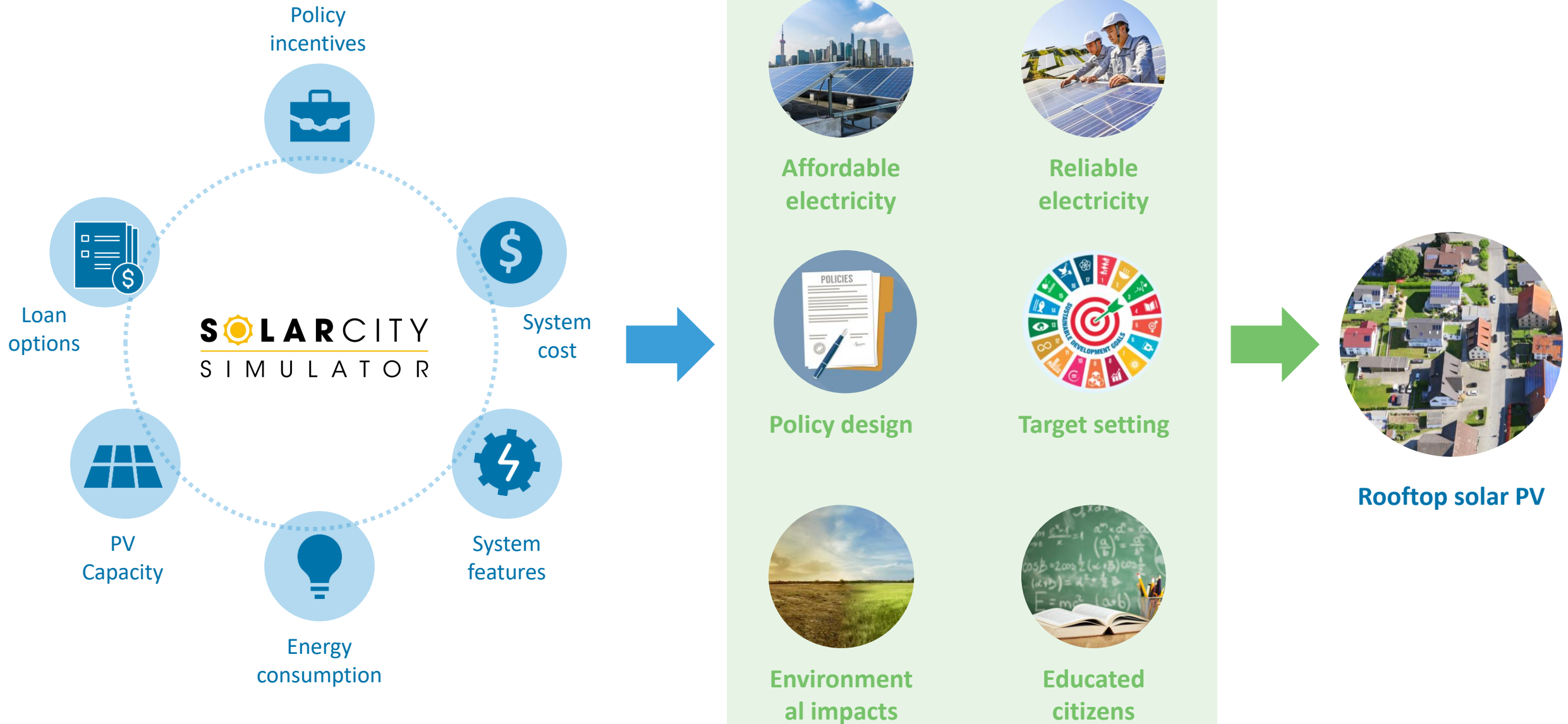


S  **LARCITY**

SIMULATOR

Demo

SolarCity Simulator – key messages



Panel discussion



Dr. Rabia Ferroukhi,
Director, Knowledge, Policy and Finance Centre
IRENA



Dr. Vincent Kitio,
Chief of Urban Energy Unit
UN-Habitat



Peterson D. Francis
Mayor, Castries
Saint Lucia



Mr. Suleiman Babamanu,
Technical Project Lead - 5m Solar connections programme
Rural Electrification Agency



Yariv Cohen
Founder
Ignite Power



Dr. Marc Perez
Senior Researcher
Clean Power Research

S  **L A R C I T Y**

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Questions?



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