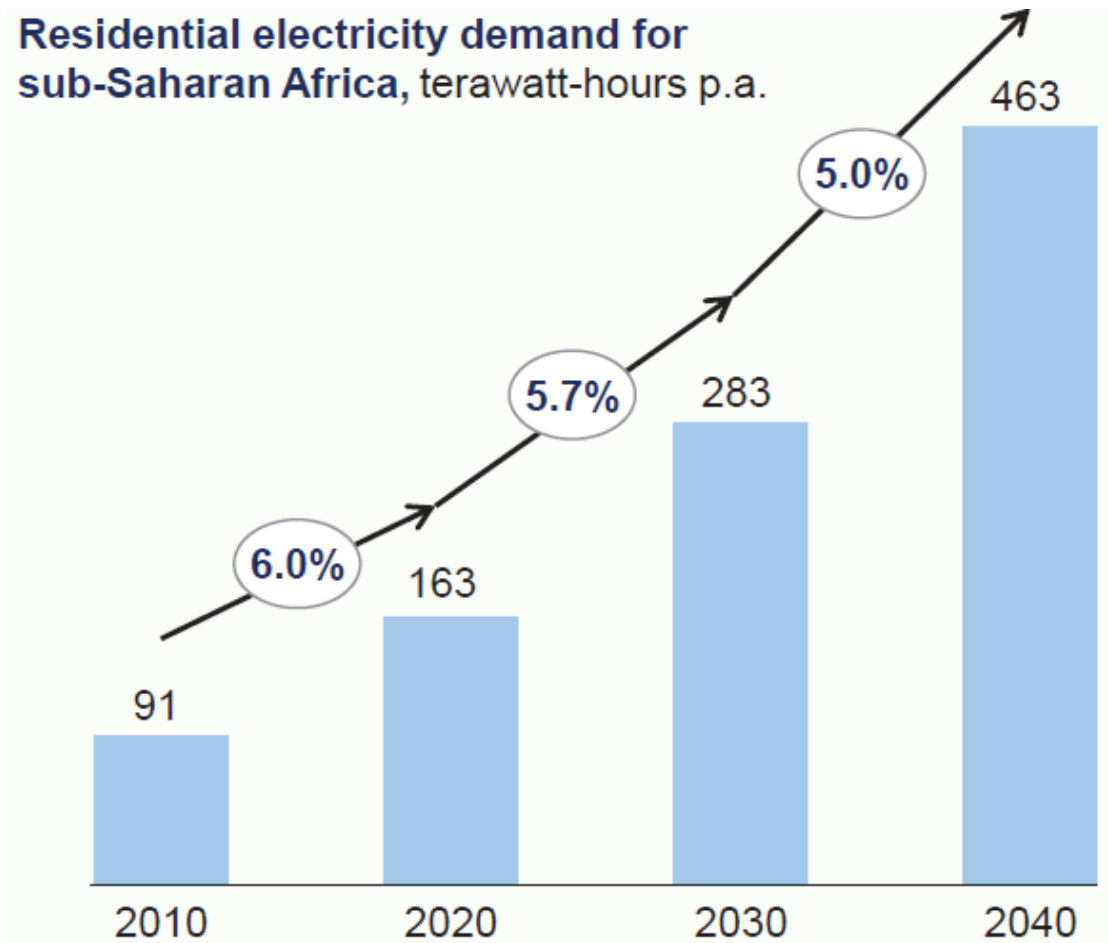


# Low-Carbon City and New Energy Development

*‘Finance and delivery strategies for  
low-carbon, local energy services’*

Presenter: Matthew Ulterino

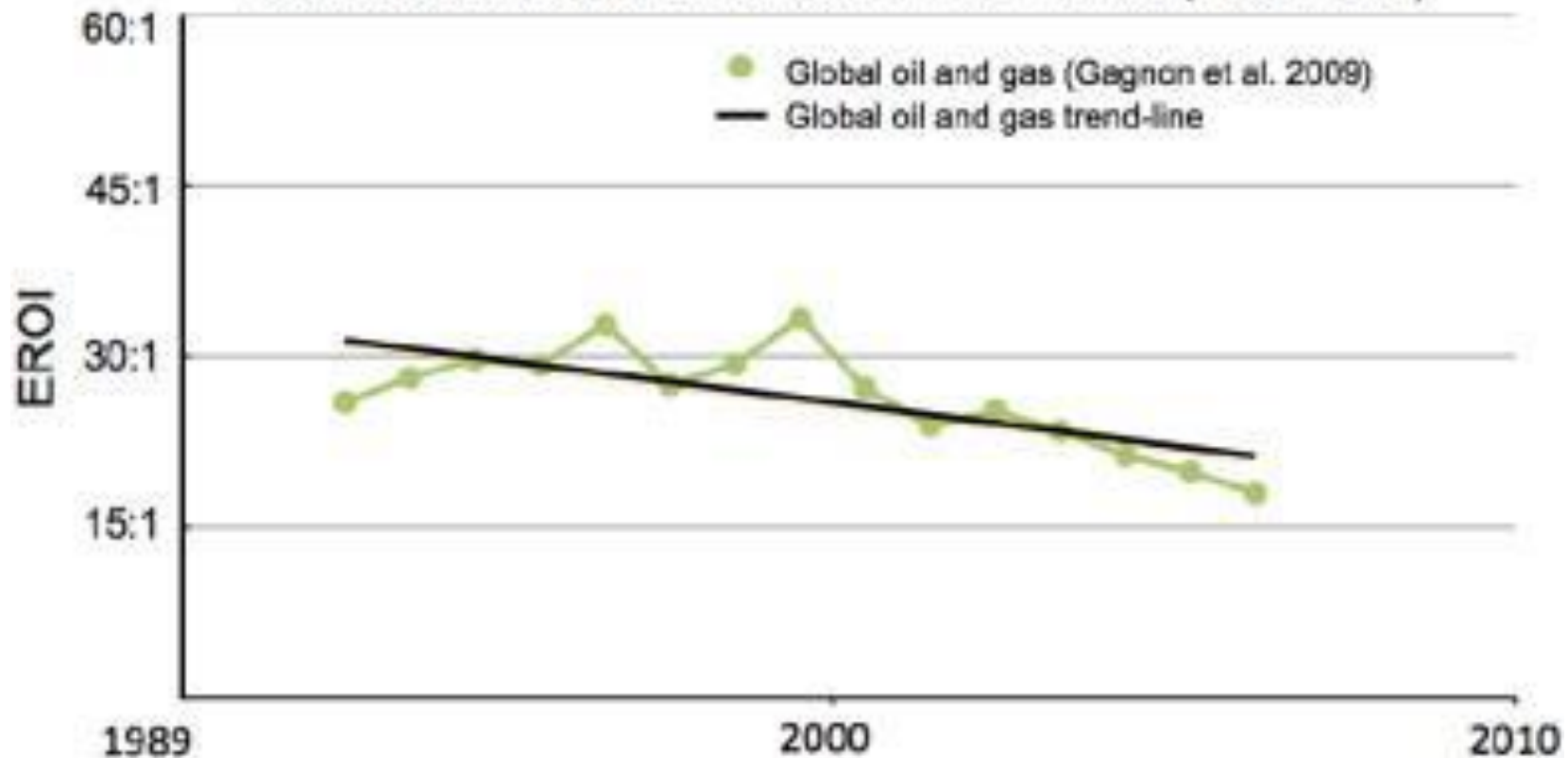
# Energy demand growth is exponential . . .



Source: McKinsey 2015 - Brighter Africa: The growth potential of the sub-Saharan electricity sector

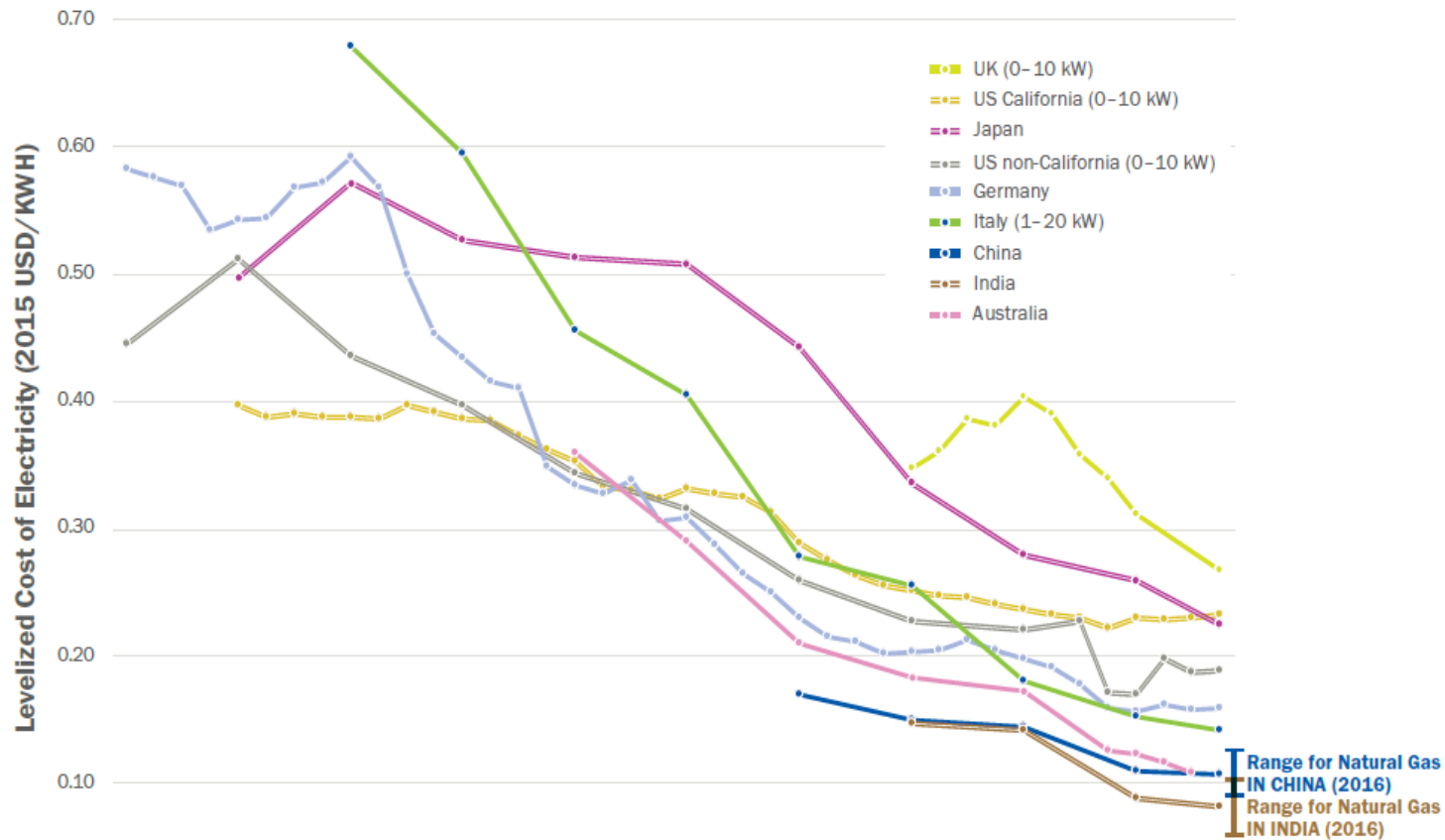
# Fossil energy is incapable of meeting demand

Global Oil and Gas EROI Values and Trends (1990-2010)



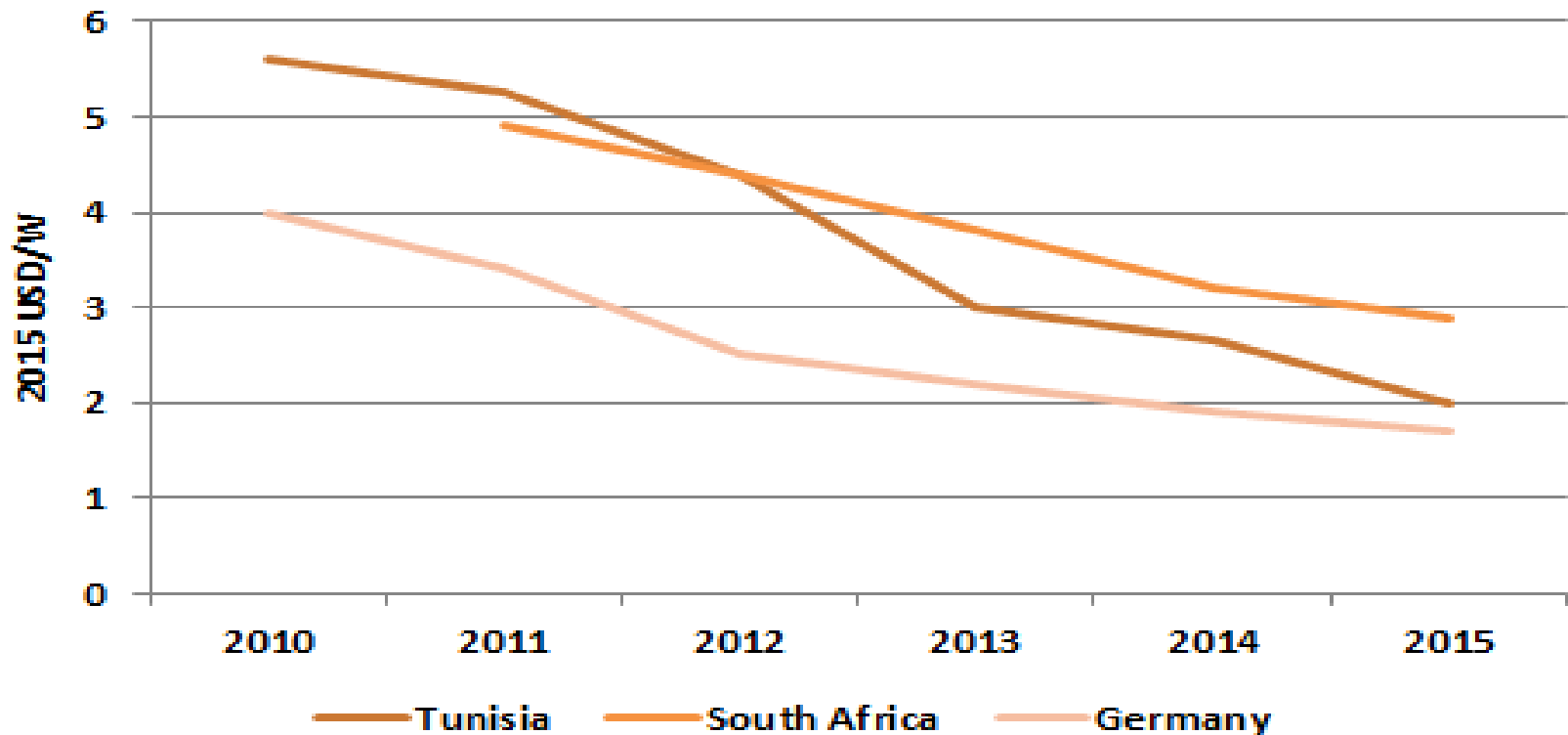
Source: Hall, Lambert, and Balogh  
(Energy Policy Volume 64, January 2014)

# Renewable costs are dropping precipitously . . .



Source: WRI (2017)  
Powering Cities in the Global South: How Energy Access for All Benefits  
the Economy and the Environment

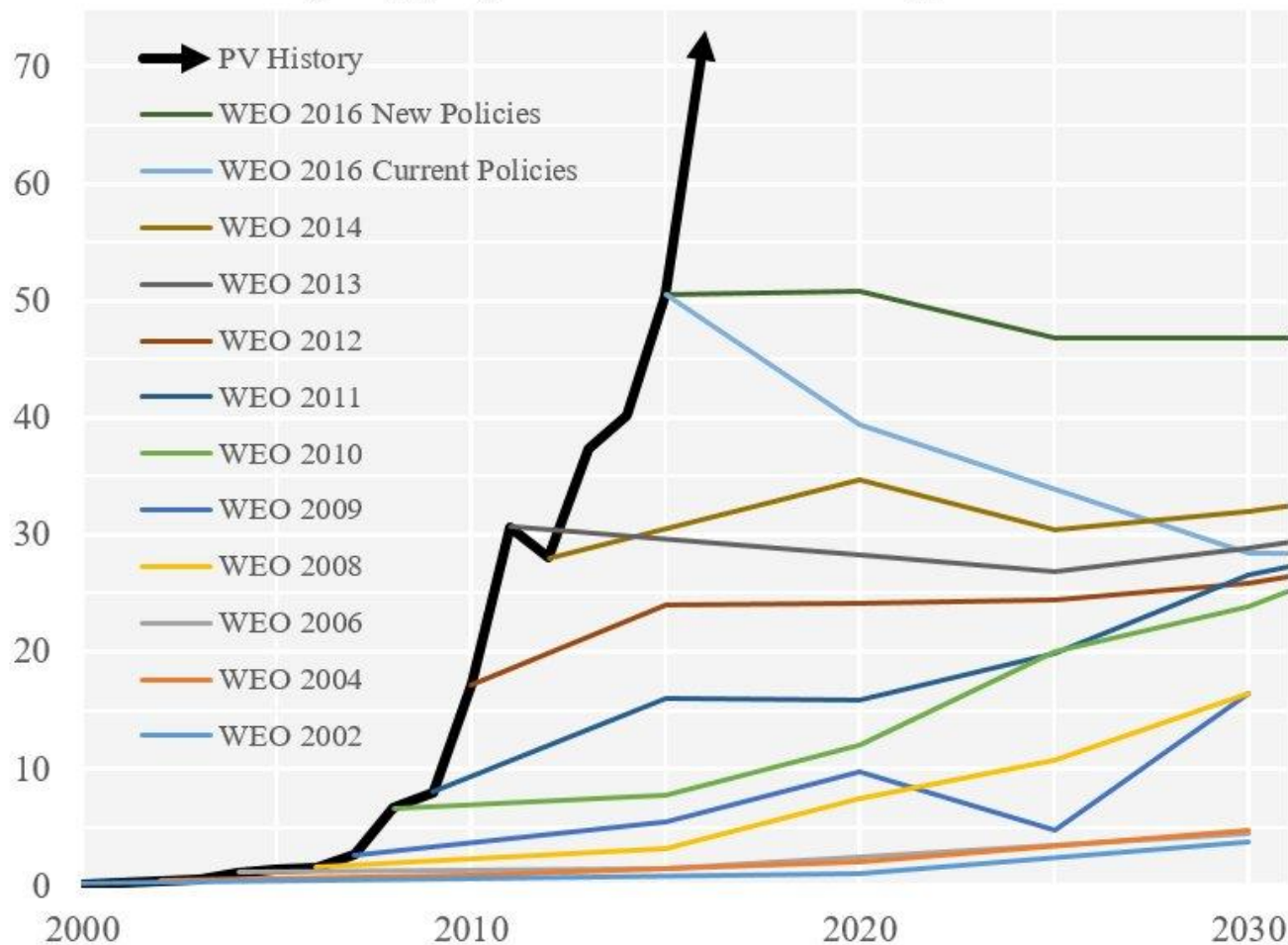
# But there's room for improvement



Based on: IRENA - Solar PV in Africa: Costs and Markets (2016)

# Solar uptake is far in excess of projections . . .

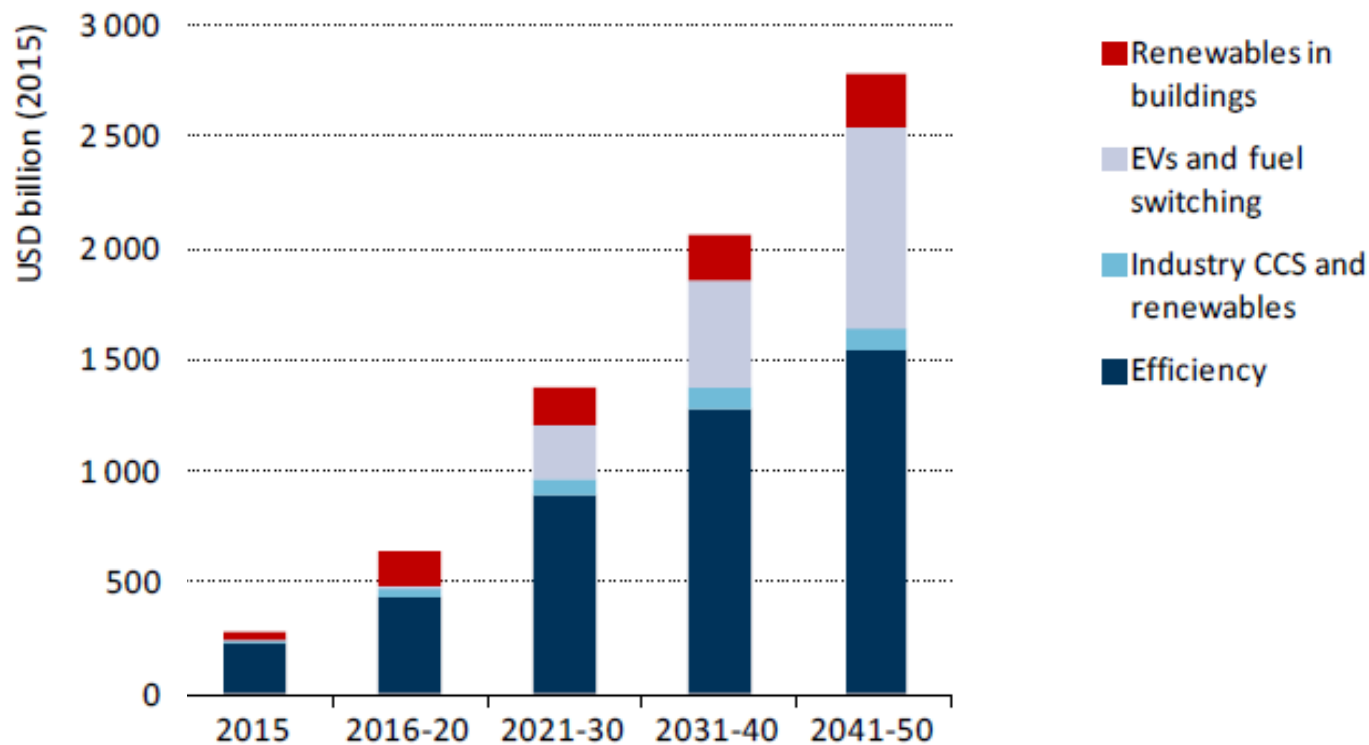
Annual PV additions: historic data vs IEA WEO predictions  
In GW of added capacity per year - sources World Energy Outlook and PVMA



Source: Auke Hoekstra  
Technical University of Eindhoven,

# Much more *green finance* is needed

- Average annual global investment in demand-side energy (66% 2 C Scenario).



Source: OECD/IEA 2017:

Energy Sector Investment to Meet Climate Goals

# Real estate is central to the energy transition

- Buildings & districts as energy hubs
- Underlying economics and financial structures are quickly improving and can drive rapid growth
- Local energy networks as an additional asset: new value streams from sunk infrastructure
- Development cost saving and affordability benefits for lower-income buyers/residents
- Strategic alignment: energy and property companies (Engie-Keepmoat; Prologis; Growthpoint; Taurus/EcoSmart)

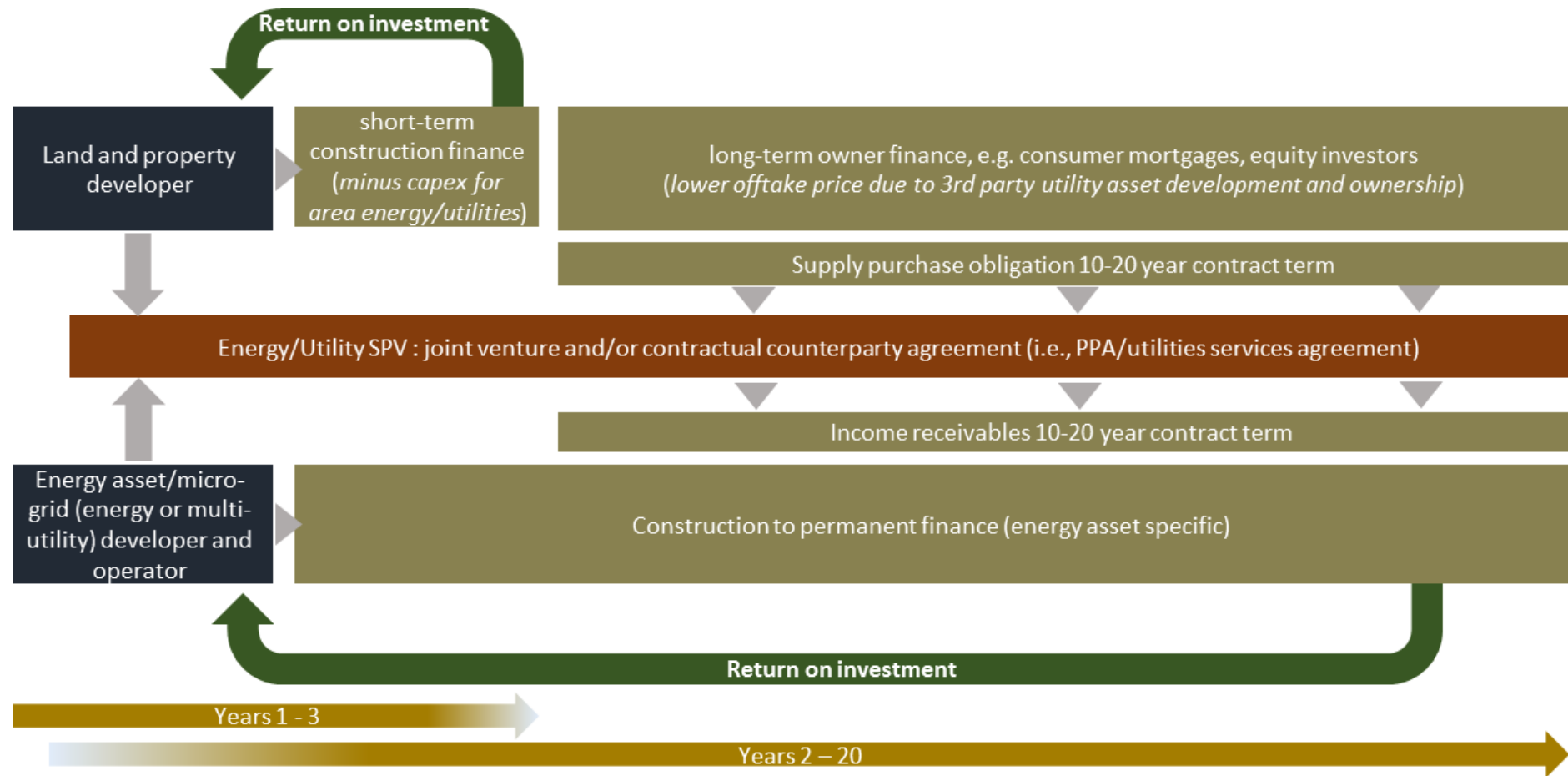




# Approach: separate energy & property assets

- Emphasis on whole networks rather than individual elements
- May be multi-utility
- Affordability gains, value uplift, resource and carbon savings, and wider network benefits
- Different drivers for middle-upper and affordable property markets

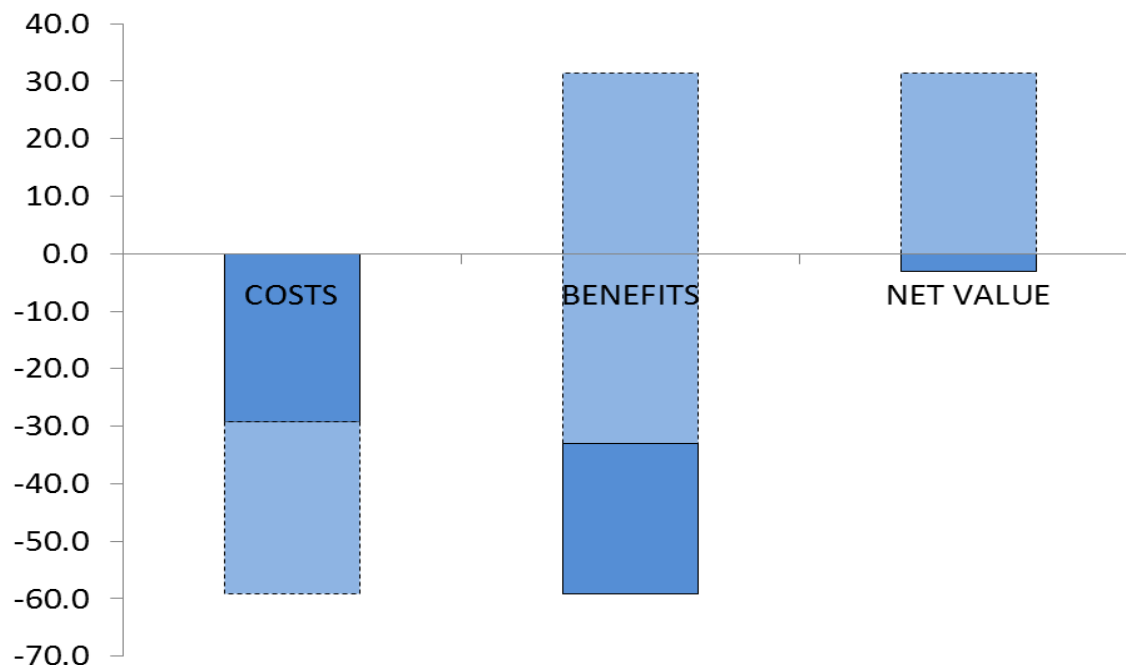
# Approach: separate energy & property assets



# Approach: separate energy & property assets

## Indicative model: proposed development in Accra

- Net present value exceeds the costs  
(USD 000,000)



- Re-assigning site infra capex shifts 2.6 – 6% of the total construction finance principal and interest based on a three to five year tenor