

# Energy Efficiency (EE) Financing

## Strategies and Considerations in Commercial Real Estate

**Ioannis Orfanos**

Director, Green Value Associates

Head of ULI Greece & Cyprus Sustainability Council

- **Understanding Energy Efficiency (EE) Finance**  
Complexities and Barriers
- **Financing Strategies and Commercial Aspects**  
Underwriting and Strategies
- **Buy-Fix-Sell:**  
Green Alpha and Health&Wellbeing

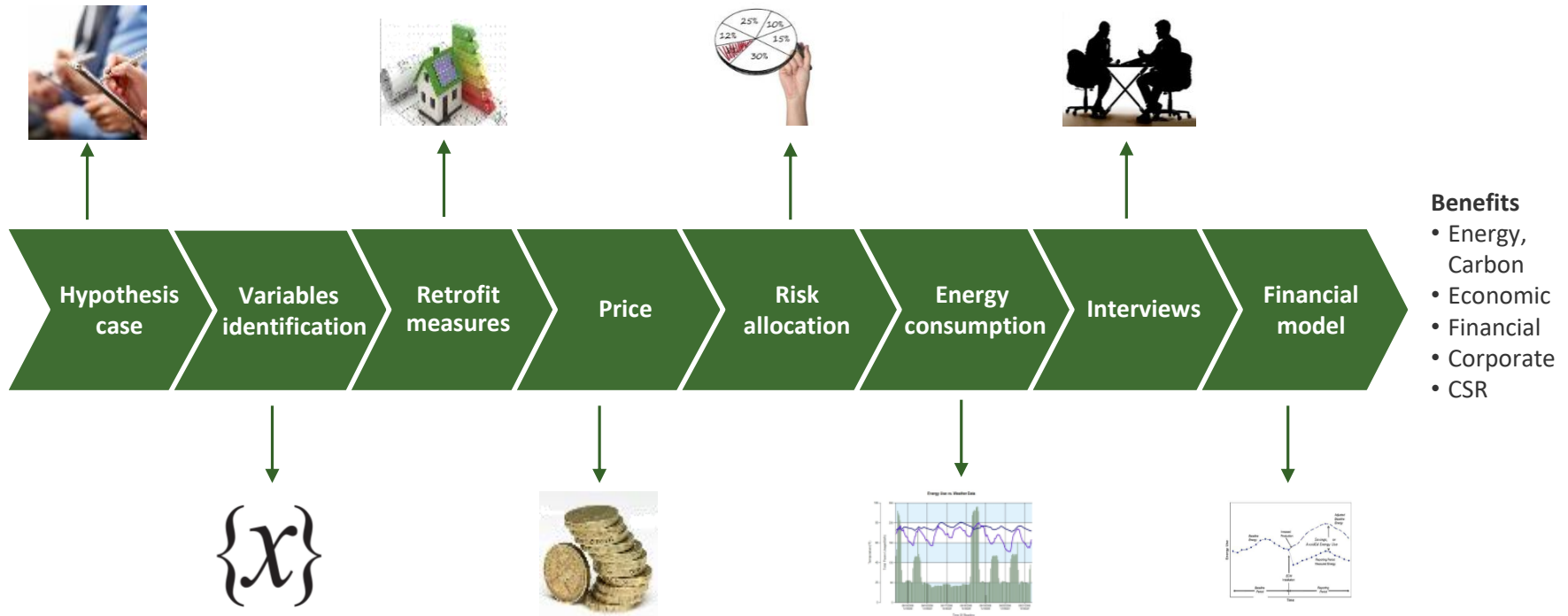
# Understanding Energy Efficiency (EE) Finance



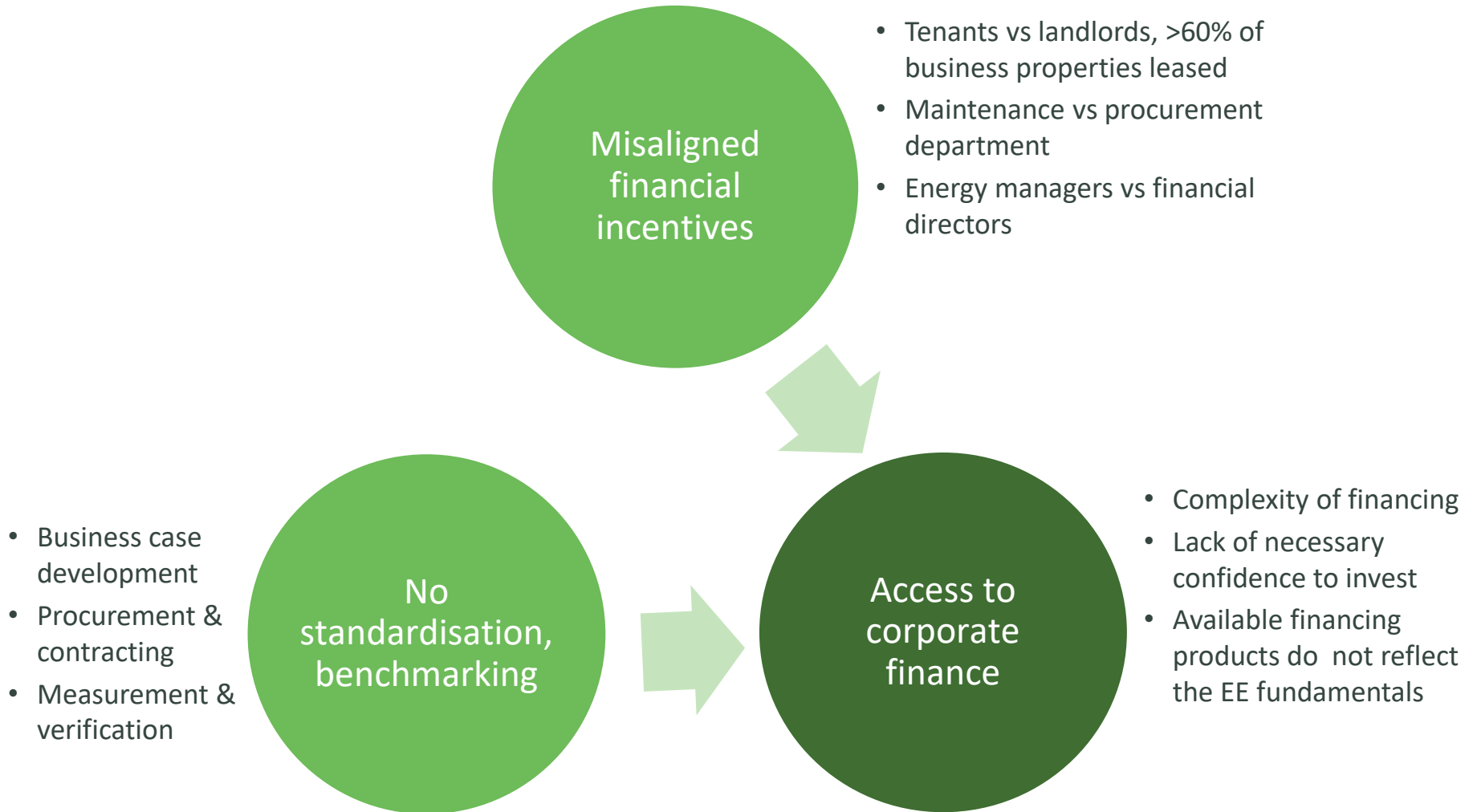
# The complexity of business case development

## A proper business case to:

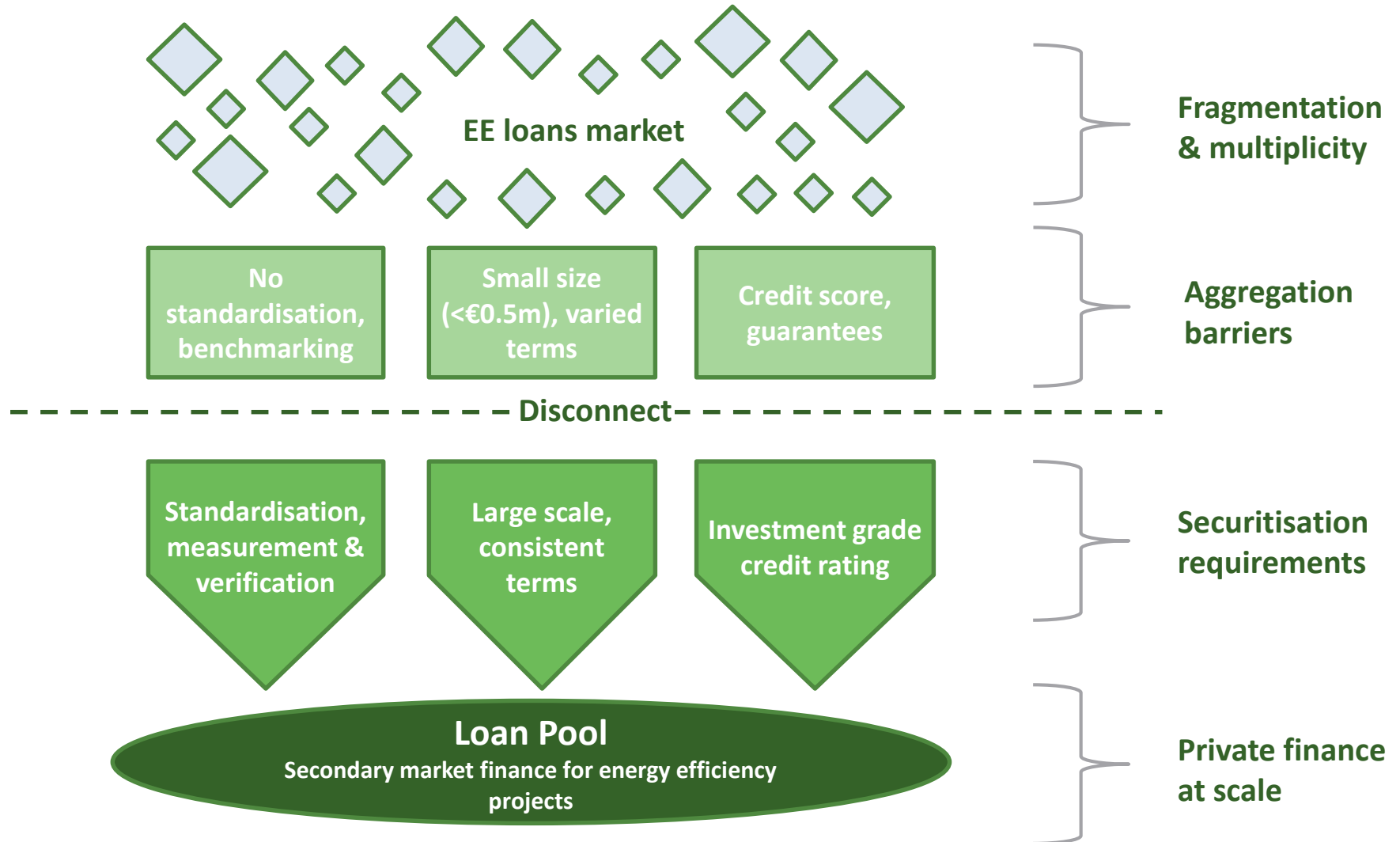
- Focus on financial structuring, optimum financing solution
- Focus on internal rate of return and to a lesser extent to payback periods
- Highlight the additional corporate benefits (risks mitigation, compliance, CSR, investment)
- Gain senior-management buy in



# The general market barriers to EE finance uptake



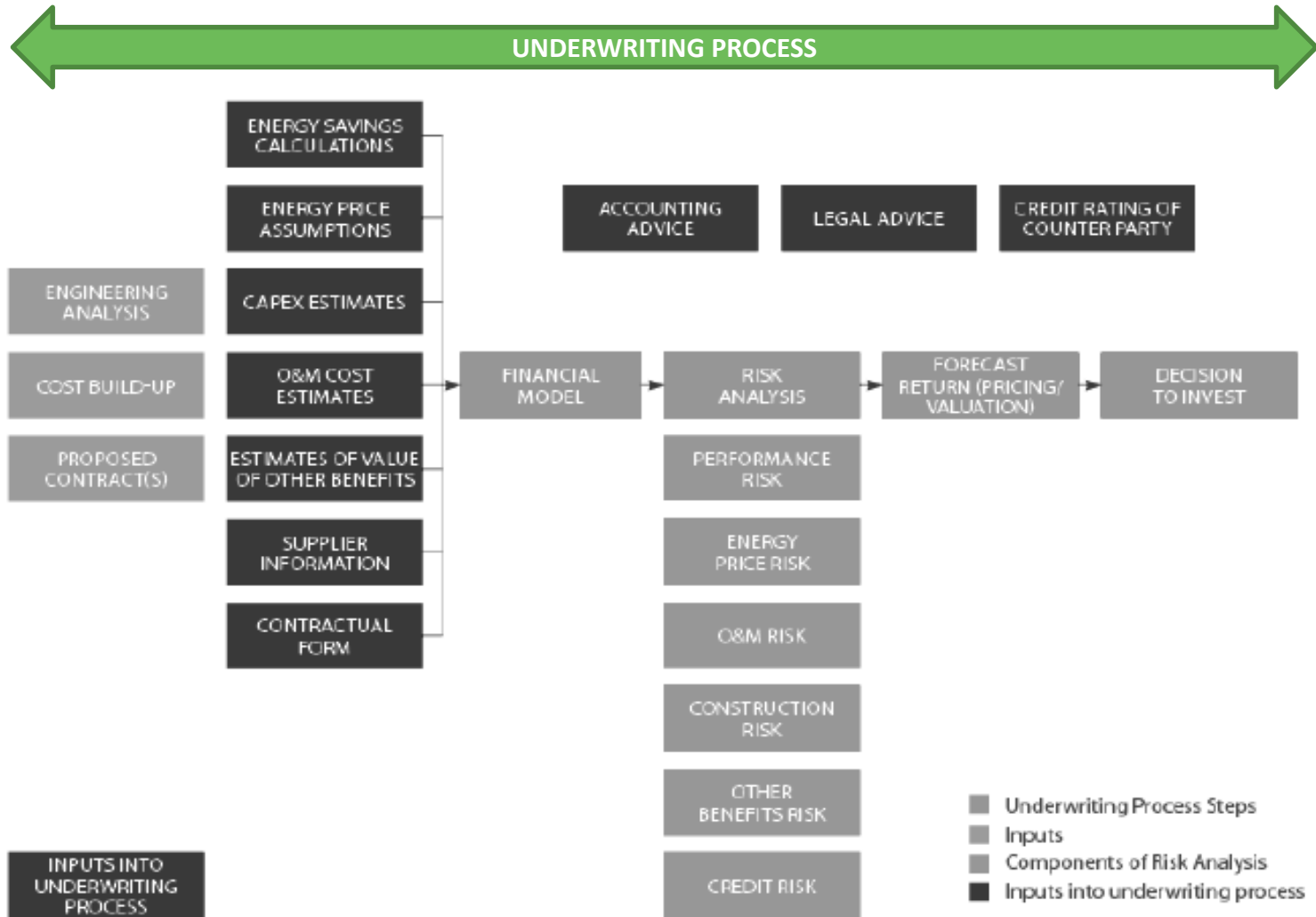
# Aggregation barriers in EE financing



# Financing Strategies and Commercial Aspects



# Energy efficiency finance underwriting process





# Financing based on energy efficiency strategy

Energy Strategy	Technical solutions	Cash (balance sheet)	Debt (extended balance sheet)	3 <sup>rd</sup> party (off balance sheet)
Generation – Income	Renewables	<ul style="list-style-type: none"> <li>•CapEx budget</li> <li>•Cash reserves</li> <li>•Direct equity</li> </ul>	<ul style="list-style-type: none"> <li>• Dedicated credit lines</li> <li>• Vendor lease ( % PPA income)</li> <li>• Project finance loan (based on PPA and equipment guarantees)</li> <li>• Green bonds</li> </ul>	<ul style="list-style-type: none"> <li>• Renewable energy funds</li> <li>• EPC – ESCo finance</li> <li>• Cleantech funds</li> <li>• Risk sharing facilities</li> </ul>
	<ul style="list-style-type: none"> <li>• Biomass</li> <li>• CHP</li> <li>• Solar (rooftops)</li> </ul> Battery/Storage District heating			
Reduction – Saving	M&E Equipment	<ul style="list-style-type: none"> <li>•Working capital</li> <li>•CapEx budget</li> <li>•Cash reserves</li> <li>•New equity</li> </ul>	<ul style="list-style-type: none"> <li>• Dedicated credit lines</li> <li>• Vendor lease (% savings)</li> <li>• Corporate loan</li> <li>• Project finance</li> <li>• Green bonds</li> </ul>	<ul style="list-style-type: none"> <li>• ESA - ESCO finance</li> <li>• Energy efficiency funds</li> <li>• Risk sharing facilities</li> <li>• On-bill financing</li> </ul>
	<ul style="list-style-type: none"> <li>• BEMS</li> <li>• Boilers</li> <li>• HVAC</li> <li>• Transmission</li> <li>• Lighting</li> </ul>			
	Fabric	<ul style="list-style-type: none"> <li>• CapEx budget (part of refurbishment)</li> <li>• New equity</li> </ul>	<ul style="list-style-type: none"> <li>• Corporate loan (balance sheet guarantee)</li> </ul>	<ul style="list-style-type: none"> <li>• Govt subsidized instruments</li> <li>• On-bill financing</li> </ul>

Return on investment guarantee

**Cost of capital** depending on **0-20%** WACC/ Alternatives **~ 3-8%** credit rating **~ 6-8+%** on type of fund

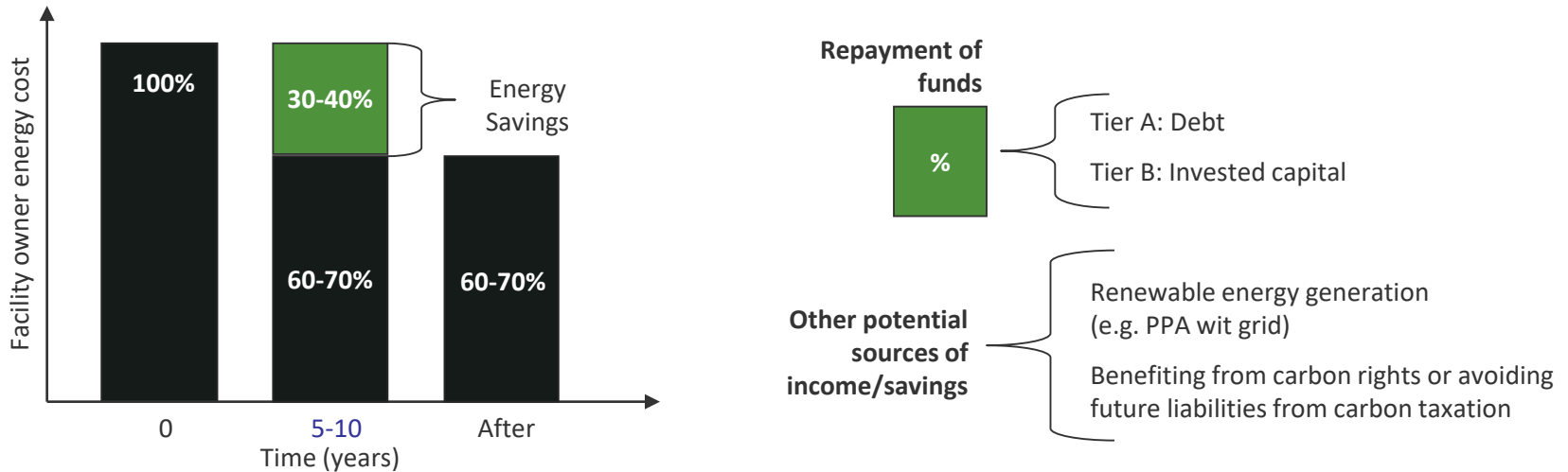
# Major investment strategies in non-domestic Real Estate

Strategies	Main financiers	Type of Assets/Projects <sup>1</sup>	Additional sources of finance
<b>Capital Expenditure</b> (Own finance)	<ul style="list-style-type: none"> <li>• Public sector</li> <li>• Property investors</li> <li>• Landlords / REICs</li> <li>• Corporate owner-occupiers</li> </ul>	<ul style="list-style-type: none"> <li>• Government estates</li> <li>• Public infrastructure</li> <li>• Core commercial real estate (e.g. office, hotel, retail etc)</li> <li>• Asset with long residual commercial life</li> </ul>	<ul style="list-style-type: none"> <li>• Equipment vendor leases</li> <li>• Grants, subsidies, tax incentives</li> <li>• Development banks (risk sharing facilities)</li> <li>• Commercial banks (dedicated credit lines)</li> <li>• Green bonds</li> </ul>
<b>3<sup>rd</sup> party finance</b> (ESA or EPC)	<ul style="list-style-type: none"> <li>• ESCo financing</li> <li>• Public funds (e.g. UK Salix)</li> <li>• Energy efficiency funds</li> <li>• Utilities (on-bill financing)</li> </ul>	<ul style="list-style-type: none"> <li>• Government estates</li> <li>• Public infrastructure</li> <li>• M.U.S.H.<sup>2</sup></li> <li>• Corporate owned real estate</li> </ul>	<ul style="list-style-type: none"> <li>• Equipment vendor leases</li> <li>• Grants, subsidies, tax incentives</li> <li>• Development banks (risk sharing facilities)</li> <li>• Commercial banks (dedicated credit lines)</li> <li>• Public Private Partnerships</li> <li>• Green bonds</li> </ul>
<b>Buy-Fix-Sell</b>	<ul style="list-style-type: none"> <li>• Added-value funds</li> <li>• Opportunistic funds</li> <li>• Distress funds</li> </ul>	<ul style="list-style-type: none"> <li>• Commercial real estate with owners in distress</li> <li>• Semi-completed developments</li> <li>• Aged commercial real estate</li> </ul>	<ul style="list-style-type: none"> <li>• Discounted acquisition price (indirect)</li> <li>• Commercial banks (incl. acquisition credit)</li> <li>• Green bonds</li> <li>• Specialized mezzanine funds</li> </ul>

**Notes:** 1 – It does not include stand alone off-site renewable energy projects

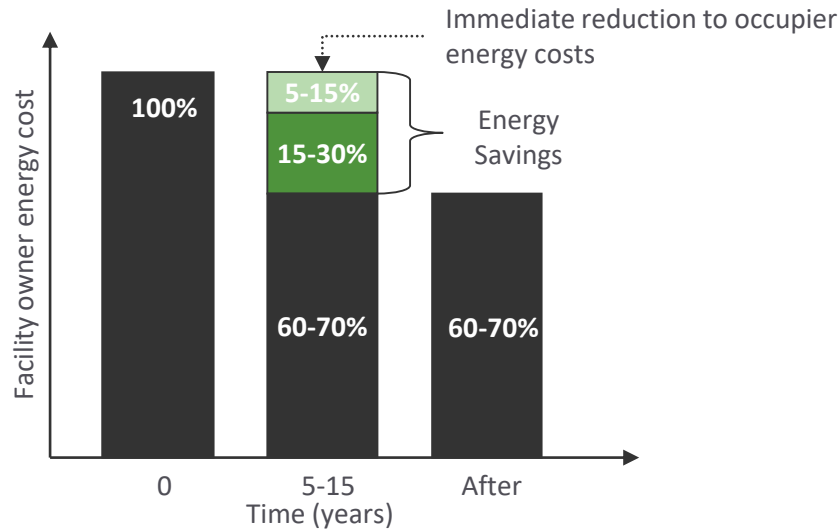
2 – Municipalities, Universities, Schools and Hospitals

# A CapEx investment – A typical business case

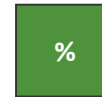


Project parameters	Typical variables	Comments
Initial annual energy cost (IAEC)	> € 100 000	Requires considerable energy consumption
Energy efficiency savings	> 20%	Ideally 30%+
CapEx investment	≤ 2 times IAEC	Need of an efficient project scale
Leverage ratio	≤ 70%,	Depending on guarantees
Loan duration	3-10 yrs	Depending on liquidity priorities
Interest rate charge	X ≤ 500 bps	Depending on risk profile, balance sheet
Targeted payback period	2-5 yrs	Less always better

# Aggregation barriers in EE financing



## Repayment of investment



- Tier A: Debt (incl. any dedicated credit line)
- Tier B: 3<sup>rd</sup> party investors based on ESA
- Tier C: ESCo through EPC

- Fixed term contract
- Potential income from on site renewable generation
- Savings shared during the contract
- Total occupier benefit at the end of the contract

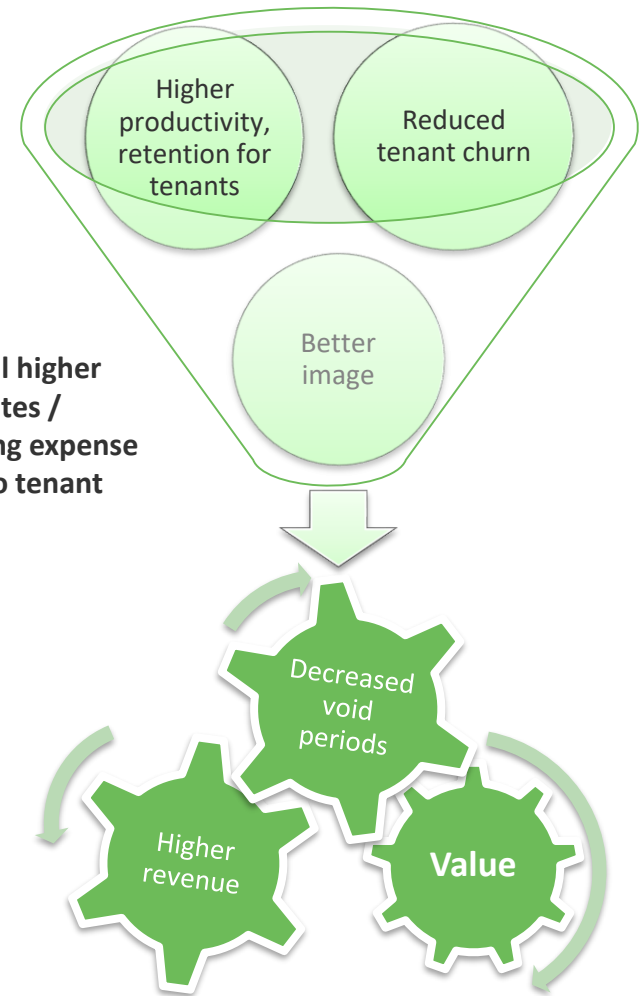
Project parameters	Typical assumptions	Comments
Initial annual energy cost (IAEC)	> €500 000	Require significant energy bills
Energy efficiency savings	> 30%	The more the better
Project investment	1,5-2 times IAEC	Need of a bankable project scale
Energy performance contract term	5-15 yrs	Depending on repayment terms and share savings agreement
Expected IRR (3 <sup>rd</sup> party investor)	5% < X < 15%	Depending on risk profile, guarantees and cost of capital
% of savings for 3 <sup>rd</sup> party repayment	~ 50-90%	After any loan principal and interest repayment

# Aggregation barriers in EE financing

		Ordinary Building	Sustainable Building
Total Occupancy Costs	Operating occupancy expenses	Other	Other (tax, insurance)
		Facility management	Facility management (cleaning, catering, security)
		Maintenance Cost	Maintenance Cost
		Energy Cost	Energy Cost
			Savings
	Rent	Rent	



Potential higher rental rates / Operating expense saving to tenant



# **(Buy-)Fix-Sell: Value add strategy**



# Investment opportunity

Increasing regulation, changing tenant demand and shortage of suitable stock has created an opportunity to generate attractive risk adjusted returns through a resilient value add strategy

1

Increasing regulation driving tenants to consider the energy efficiency of their occupational estate

- EU Energy Efficiency (EED) and Energy Performance in Buildings (EPBD) Directives
- KENAK - Greek Regulation for the Energy Efficiency of Buildings
- The Paris Global Climate Agreement (2015)

2

Significant tenant and investor demand

- Occupiers are increasingly demanding more resilient, efficient and healthy buildings
- Demonstrably resilient properties are being sought by major investors
- Occupier focussed strategy provides value generation opportunities

3

Limited supply of energy efficient buildings

- Deep pool of non compliant assets that need repositioning
- Viable opportunities to fully reposition existing buildings
- Resilient assets are attracting occupiers and higher values

# Investment strategy: Buy, Fix, Sell

The Real Estate Investors target assets that offer value-add upside potential through sustainability led active asset management



- Invest in knowledge driven economically vibrant cities
- Acquire EPC ratings G/F/E, improve to C/B/A
- Locations that benefit from access to robust infrastructure
- Target well located mainly office assets with value-add upside potential
- Core locations, core cities
- Seeking Ticket size €10-50m

- Active asset management:
  - Lease vacant space
  - Rent reviews and lease re-gears
  - Asset repositioning
- JVs with 'Green' Developers or Occupiers
- Generate 'Green Alpha' – additional asset value through improved energy efficiency

- Focused on creating 'future proofed' office assets – increasing attractiveness to occupiers and investors
- Emphasis on the risk of asset obsolescence / downside risk protection
- Emphasis on the energy efficiency benefits during asset marketing
- Robust institutional appetite for de-risked assets expected to drive improved returns



# Investment strategy: Energy efficiency

Energy efficiency initiatives are integrated into value-add asset management to generate attractive risk adjusted returns for investors

Energy Efficiency  
(40%\*)

- Heating, cooling and controls
- Lighting systems and controls
- All building Metering (AMR) and data logging



Fabric  
(50%\*)

- Thermal heat loss insulation
- Windows and glazing
- External shading
- Flat roof insulation



Renewables  
(10%\*)

- Solar thermal
- Solar PV
- Biomass boilers
- Geothermal



\* Anticipated % contribution to Energy/Cost Savings leading to the delivery of "Green" Alpha

# Investment strategy: 'Green Alpha' methodology

## Proving the Value Add

1

Input Data

- Background to the property and its local market
- Capex in energy efficiency measures
- Calculation of energy savings and paybacks
- Benchmarking sustainability KPIs over hold period
- Investment performance analysis, in terms of total return, against comparable transactions
- IPD benchmarking

2

DCF model

- Statistical analysis of 10-20 years of historic movements in yield and rental growth
- Application of probability distribution curves onto forecasts over hold period
- Controlling for inflation by use of real rental growth figures, rather than nominal
- Isolation of outperformance over and above the market that indicate externalities attribution

3

'Green Alpha'  
Total Return Attribution

- NPV of energy savings and apportionment to total return
- Isolation of outperformance from Monte Carlo analysis
- External valuation opinion regarding additional externalities notably letting risk & enhanced yield

# Investment strategy: Health & Wellbeing in Buildings

*“The trends all point in a single direction... Wellness is the next trillion dollar industry”*  
McKinsey & Co

## First tenant, then office indoor design

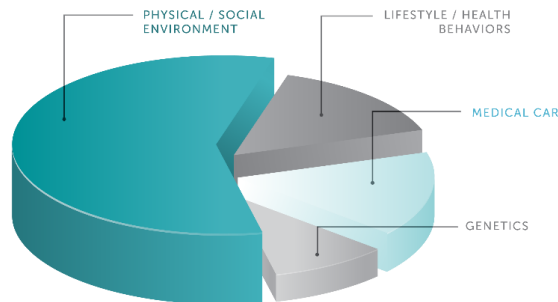
- Employees spend 90% of their time indoors.
- Tenants value therefore indoor air quality, temperature comfort and physical lighting to improve their staff physical health and thus perceived productivity.



Source: International WELL Building Institute

## The importance of the physical office space

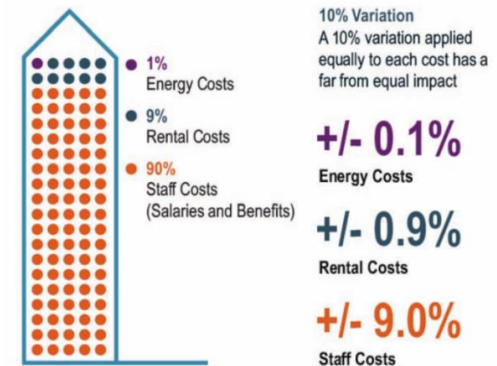
- The physical office influence the health of occupiers and can be measured or evaluated
- 90% of employees admitted that their attitude to work is adversely affected by the quality of their workplace



Source: US Center for Disease Control & Protection

## Business tenant operating costs and productivity

- Staff accounts for 90% of operating costs, doubling the health level of an office can double productivity



Source: World GBC Health & Wellbeing & Productivity in Office Report 2014

# Investment strategy: Health & Wellbeing in Buildings

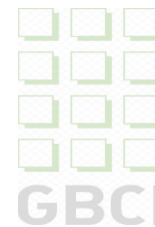
Focus on the elements that can be certified



BREEAM



BEAM



## Measured and evaluated outcomes



- Design: 0%, human-focused design does not cost more
  - Additional construction or retrofit: 0% - 5% as long as the principles are established from the start
  - Materials: c.10% increase. Less toxic materials are more expensive at present
- The corporate office health & wellbeing environment can have a direct impact on occupants productivity.
  - The outcome for the corporate tenant can be measured or evaluated in the following ways:
    - Absenteeism/Presenteeism
    - Staff turnover and retention
    - Medical complaints and related insurance costs
    - Physical complaints
    - Task efficiency and revenue
- Leasing: Reduced vacancy, potential higher rental values
  - Turnover: Reduced, higher retention of blue chip tenants
  - Marketability: Faster and easier lease up or sell
  - Transactability: More attractive asset proposition for institutional buyers
  - Value: Green alpha yields



### **Ioannis Orfanos**

Director, Investment Advisory

[iorfanos@green4value.com](mailto:iorfanos@green4value.com)

Tel: +44 2032 867030

Mob: +44 7792 830393

[www.greenvalueassociates.com](http://www.greenvalueassociates.com)

Devonshire House, 1 Devonshire Street | London | W1W 5DS | United Kingdom

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A photograph of a modern, multi-story glass skyscraper with a curved facade, set against a clear blue sky. The building is surrounded by greenery, including trees and a lawn. A white diagonal line cuts across the image from the top left to the bottom right.

# Thank You

## Strategies and Considerations in Commercial Real Estate

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