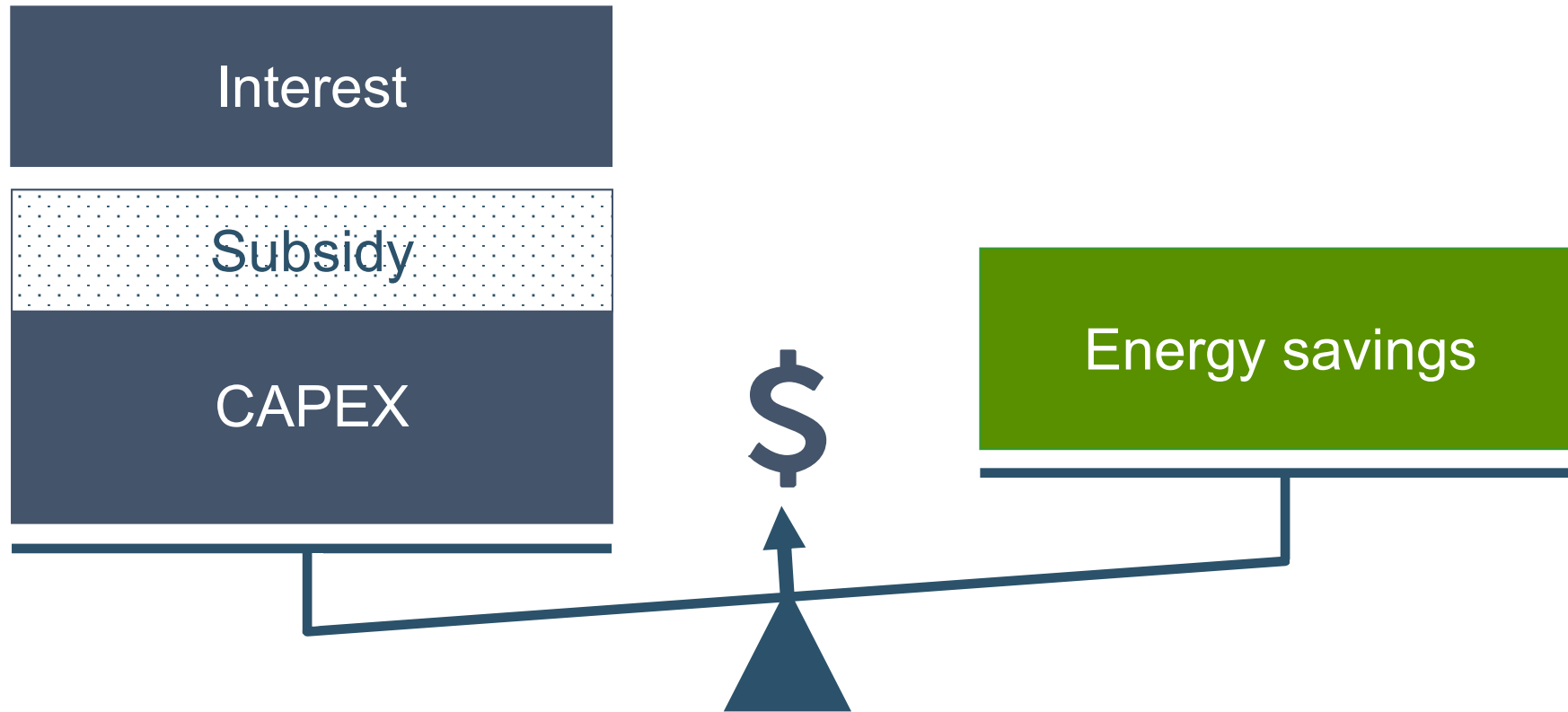# LTRS is a number balancing exercise

Building owner's perspective

LTRS is a number balancing exercise
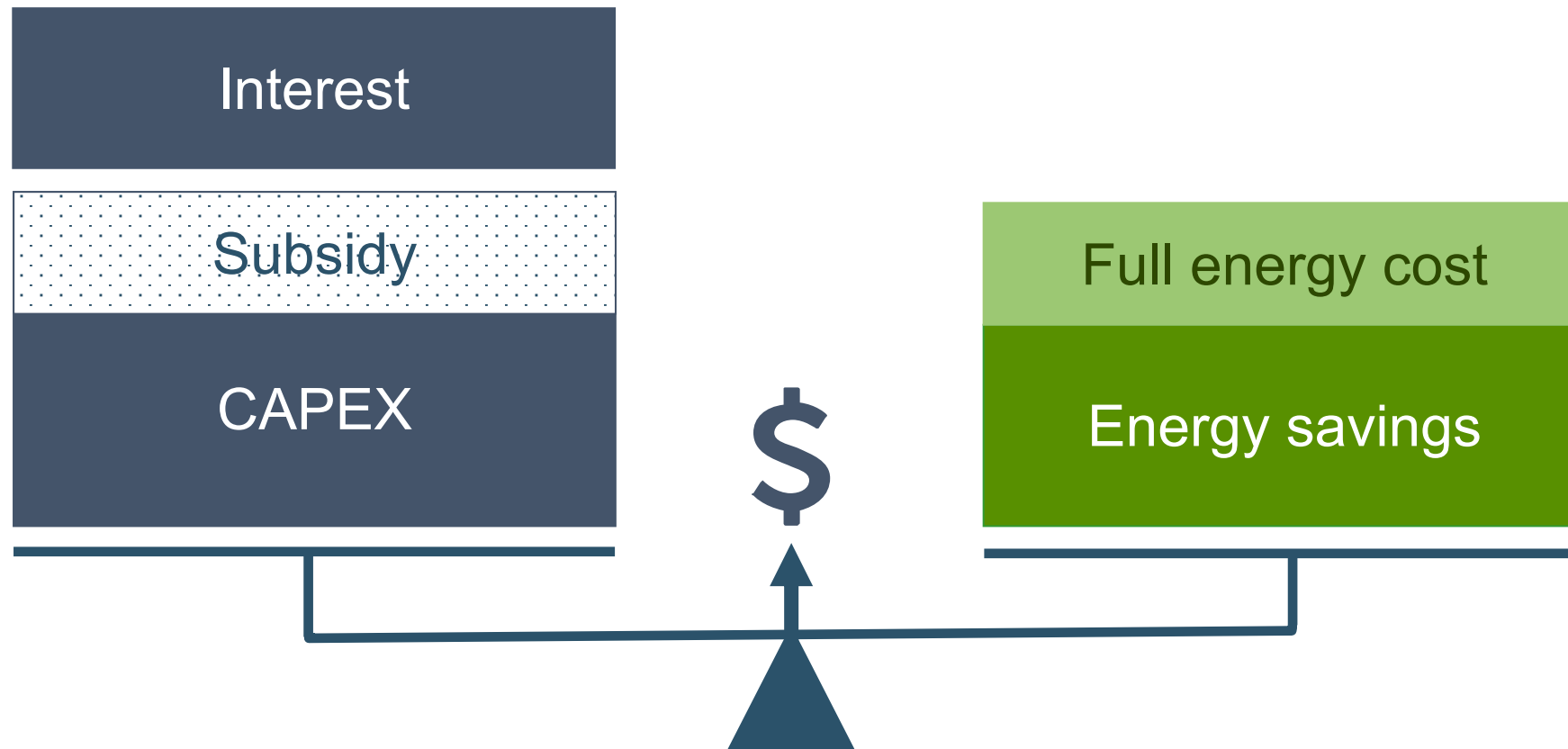
Building owner's perspective

LTRS is a number balancing exercise

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LTRS is a number balancing exercise
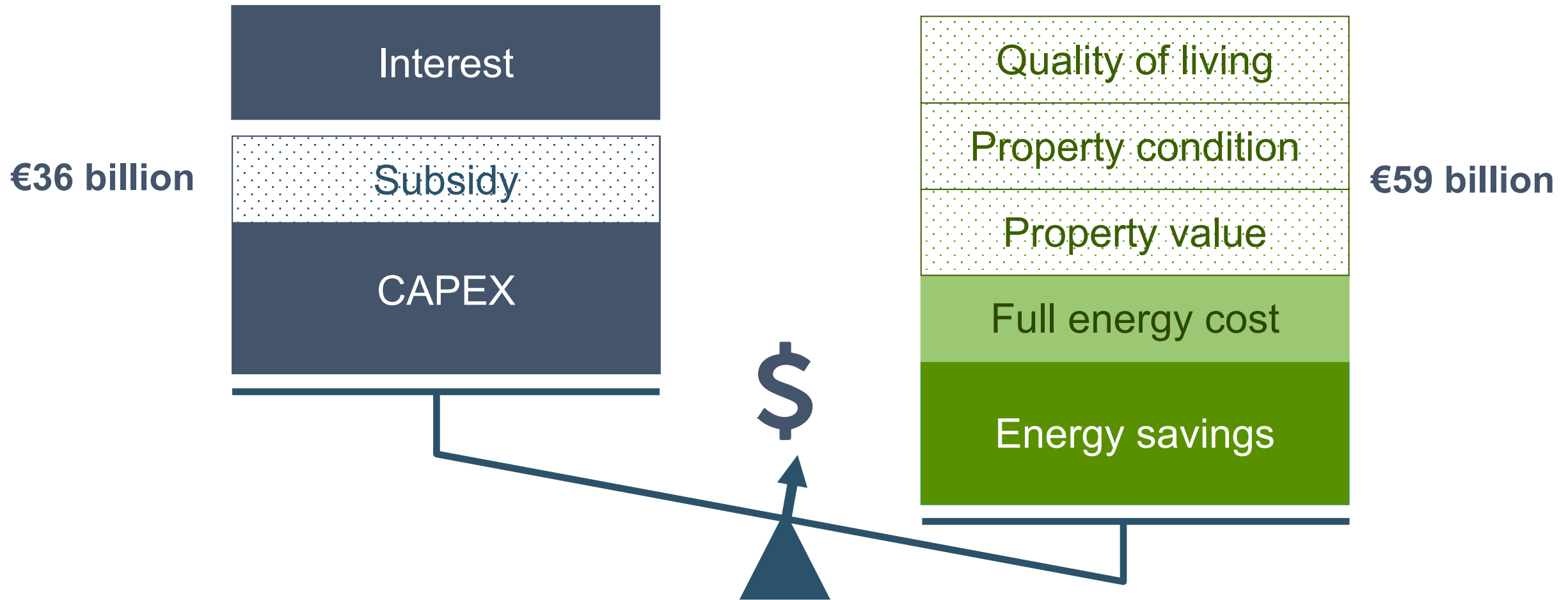
Building owner's perspective

€36 billion
- Interest
- Subsidy
- CAPEX

€59 billion
- Quality of living
- Property condition
- Property value
- Full energy cost
- Energy savings

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Q: Where do those numbers come from?

	€ billion	
Total investment cost	**36,0**	Cost for 37 renovation packages (RPs)
Energy savings	18,0	(37 RPs x 100 building typologies)
Reduction in CO2 emissions	3,8	
Increase in property value	4,5	Property market research
GDP increase	19,1	Copenhagen economics study (adopted to local specifics)
Health and well-being improvement	12,2	BPIE study (adopted to local specifics)
Other	1,3	Mix of studies & local research
Total benefits	**59,0**	

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Basic formula for energy savings calculation

Energy savings

=

Estimated 2050 consumption without renovation

–

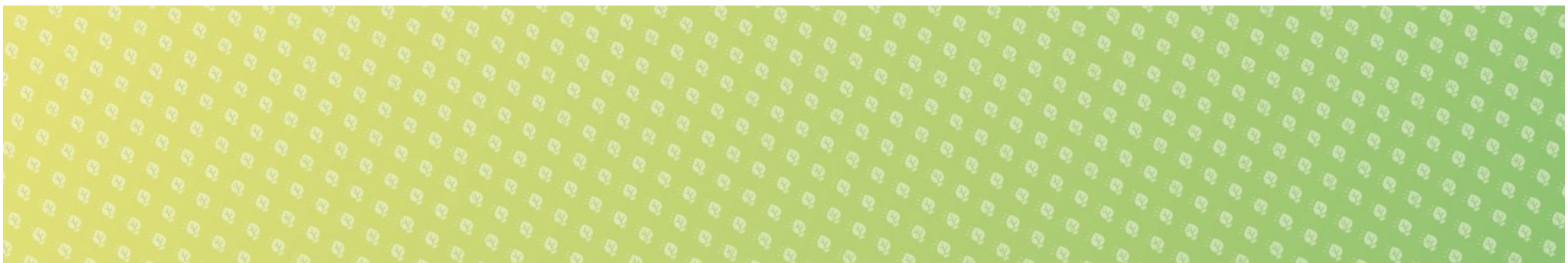Estimated 2050 consumption with renovation

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Data development model to estimate energy savings

Q1. Building stock structure?	Q2. Actual energy consumption?	Q3. How to get 85%?	Estimated current consumption	Estimated savings changes	Estimated future consumption
Private houses (EPC A)		Option A: Extrapolate 29%	4,3 TWh	Savings from Renovation packages (51%)	3,7 TWh
Private houses (EPC B)	24%				
Multi-Ap (EPC A)			8,9 TWh		5,3 TWh
Multi-Ap (EPC B)	65%	Option B: Apply standard EPC ratios			
Non-residential (EPC A)			4,3 TWh	'Savings' from external factors (9%)	2,9 TWh
Non-residential (EPC A)	11%	Option C: Mix of A & B			
Total 100 categories	Total 29%		Total = 2020 EB		Total = 2050 EB

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Lessons learned in LTRS data collection

- LTRS is mostly about energy for heating & cooling

- **Actual** data is available for centralized heating & cooling **only**

- More developed centralized heating (cooling) = more actual data

- Industrial buildings ▶ separate story (case by case)

- Hence, exercise is much more data generation (creation) than data collection

Generated data form a basis for renovation incentives (subsidies):
wrong number - no interest in renovation

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