

# Energy efficiency financing principles and mechanisms

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To achieve “66% 2°C” scenario  
requires *average* investment into  
energy efficiency > USD 1 trillion a  
year between 2016 and 2050

i.e. circa 5 x current level

# Types of EE projects

## Retrofits

- Stand-alone
- Primary purpose is EE
- e.g LED conversion



## Embedded

- Part of a wider renovation/refurbishment project
- Primary purpose is something other than EE
- e.g. major building refurbishment to bring it up to modern standards

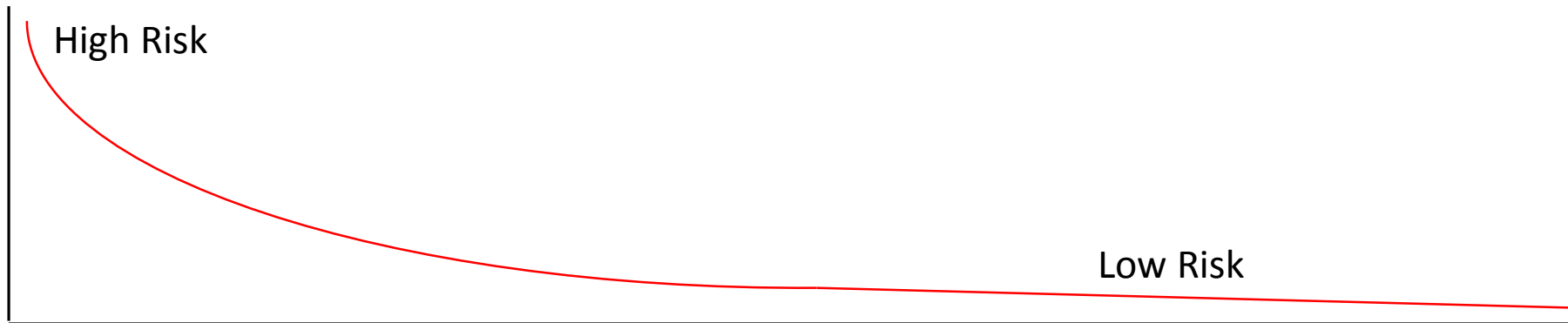


## New build

- New buildings or facilities that are more efficient than codes / regulations / norms
- e.g. new building built to Passivhaus standard



# The project life cycle



## Development finance

- Equity
- Grant (PDA)

**Scarce**

## Project finance

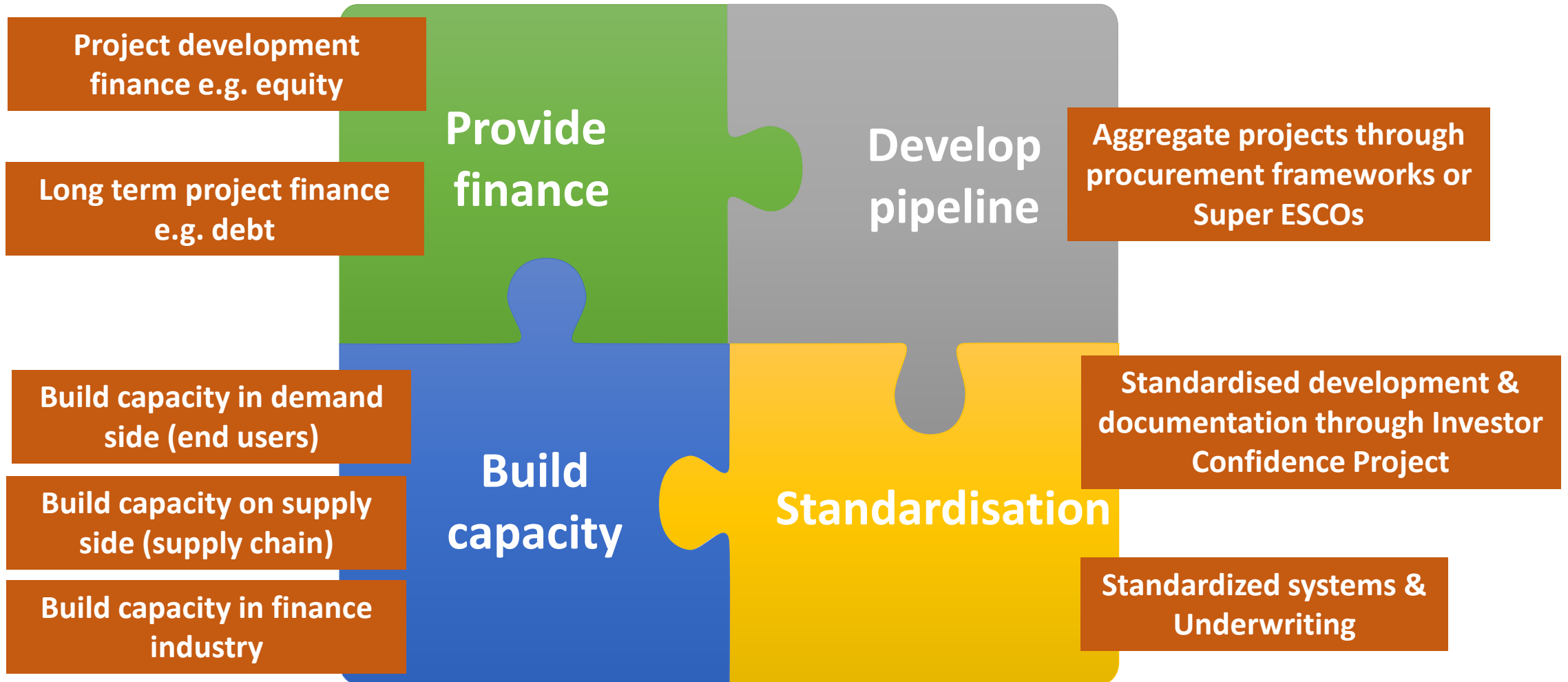
- Debt

**Abundant**

# Mechanisms for financing EE

- Own capital
- Loans/mortgages – residential/commercial buildings
- Leasing
- Specialised energy efficiency Funds
- Property funds specialising in energy efficient buildings
- Financing of energy service contracts through ESCOs and Super ESCOs
  - EPC / Chauffage / ESA / MESA / MEETS / LaaS / P4P
- On Bill Recovery (OBR)
- Property Assessed Clean Energy (PACE)
- Guarantee funds
- Forfeiting funds
- Green bonds
- YieldCos

# To scale up we need to assemble the jigsaw of energy efficiency finance



# Specialised energy efficiency funds

## London Energy Efficiency Fund (LEEF)

- Established by the Mayor of London
- Long term debt fund
- ERDF funds plus private sector debt
- Managed by Amber Infrastructure
- Invested more than £110m
- Invested in public sector and private sector



<http://www.leef.co.uk/index.html>

# On-Tax Financing

## Property Assessed Clean Energy (PACE)

- Started in the US in 2008
- Has grown to finance €4.7 billion of residential & commercial projects in US
- Covers 100% of project costs
- Repayable over 20 years by an addition to property tax
- Low risk
- Copied in Canada, Australia and elsewhere
- Now being developed in Europe through Horizon 2020 project EuroPACE



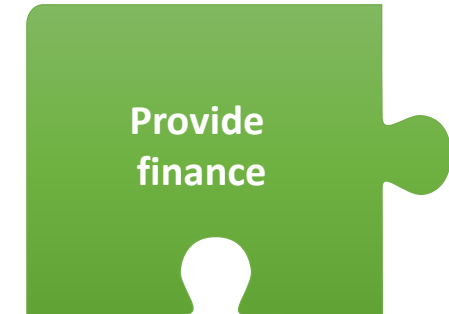
<http://www.europace2020.eu>



# Forfeiting fund

## Latvian Baltic Energy Efficiency Fund (LABEEF)

- Facility to purchase long-term cash flows from renovation of multi-family buildings through Energy Performance Contracts
- Addressing massive problem of low efficiency, crumbling Soviet era housing – common across C&EE
- Private initiative
- Supported by EBRD and F<sup>3</sup>



<http://sharex.lv/en/latvian-baltic-energy-efficiency-facility-labeef>

# ESCOs, Super-ESCOs and procurement frameworks

## Energy Service Companies (ESCOs) offer guaranteed savings through contracts such as Energy Performance Contracts (EPCs)

- High transaction costs
- Useful model – particularly for the public sector
- Does not transfer well into other sectors
- ESCOs only respond to RFQs – they don't undertake high risk development
- Super-ESCOs can be “super developers” and do undertake development risk



<https://www.eeslindia.org>



<http://www.etihadesco.ae/index.html>



<https://www.carbonandenergyfund.net>

# Standardisation

**An international framework for reducing owner and investor risk, lowering due diligence costs, increasing certainty of savings achievement and enabling aggregation.**



Investor Ready Energy Efficiency™ is the quality mark like BREEAM or LEED but for an **ENERGY EFFICIENCY RETROFIT PROJECT**



Ensures transparency, consistency and trust-worthiness through **best practice and independent verification.**

<http://europe.eepformance.org>

Available across EU for buildings, industry, street lighting and district energy projects.



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# Building capacity in the financial sector



Introduction Financial Institutions & Energy Efficiency Financing Energy Efficiency The Project Life Cycle Value & Risk Appraisal Resources

## EEFIG UNDERWRITING TOOLKIT Value and Risk Appraisal for Energy Efficiency Financing

A tool to assist financial institutions to scale up the deployment of capital into energy efficiency



Introduction



Financial Institutions and Energy Efficiency



Financing Energy Efficiency



The Project Life Cycle



Value and Risk Appraisal



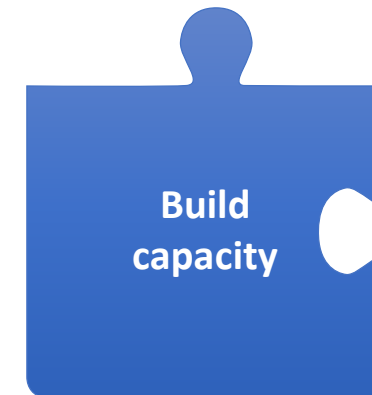
Resources



“ I strongly recommend this toolkit to project promoters, banks, financial institutions and anyone else interested in financing energy efficiency  
Foreword by Maroš Šefčovič, European Commission VP



“ It will make it easier for financial institutions to carry out value and risk appraisals, for developers to attract capital, for businesses to fund projects  
Foreword by Erik Solheim, UN Environment



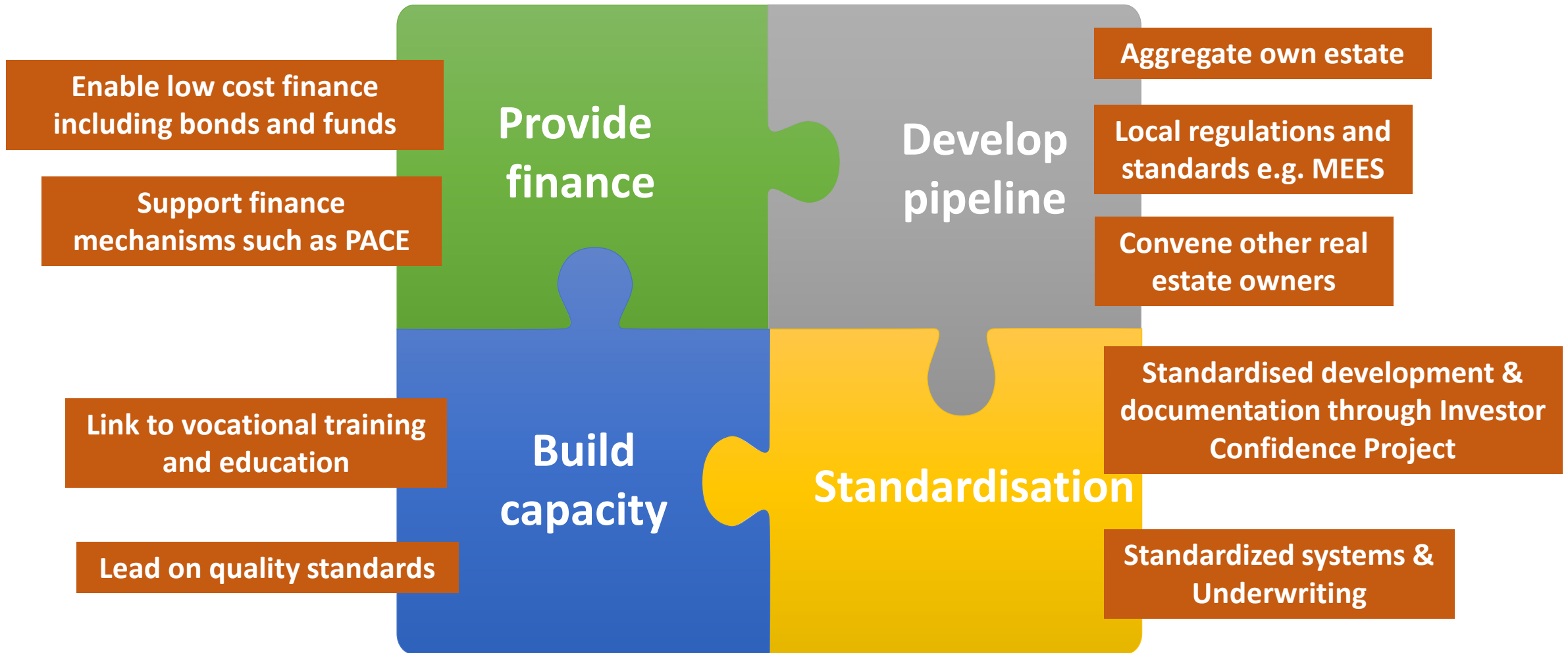
The EEFIG Underwriting Toolkit

[valueandrisk.eefig.eu](http://valueandrisk.eefig.eu)



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# Cities can play a major role in assembling the jigsaw of energy efficiency finance



# In conclusion

## Energy efficiency financing is a developing market with massive potential

- It is not just about the money
  - Need Finance, Pipeline, Standardisation & Capacity building to come together – [the EE financing jigsaw](#)
- Distinguish between development finance and project finance
  - Development finance = high risk = scarce
  - Project finance = low risk = abundant
- Many different types of mechanism
  - Optimum will depend on market segment being addressed
- Lack of standardisation needs addressing
  - The mechanisms exists through the Investor Confidence Project's [Investor Ready Energy Efficiency™](#)
- Lack of capacity in financial sector needs addressing
  - Through tools like the EEFIG Underwriting Toolkit
  - Derisking tools like EEFIG Derisking Energy Efficiency Platform (DEEP)

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