Smart Cities Marketplace

Action Cluster Sustainable Districts & Built Environment

Launch of Heating & Cooling Initiative – 16 March 2021

European Commission

The Heating and Cooling Initiative

Sofia Lettenbichler
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Moderator:

Sustainable Financing

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European Commission

Smart Cities Marketplace

Launch of the Heating & Cooling Initiative

Sofia Lettenbichler, Euroheat & Power, Celsius Initiative

European Commission

Smart Cities Marketplace

Cities are at the Forefront of the Heat Transition

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- ✓ H&C makes up 50% of the energy demand
- ✓ Key infrastructure for Smart & Sustainable Cities

Celsius FP7 project:

- Assembled a **network of 72 cities** and **68 City Supporters** between 2014 and 2017

... too good to let go, so the Celsius Initiative continues since 2019!

European Commission

Celsius: a demand-driven collaboration hub

- ✓ Continuous **knowledge sharing** through the newsletter, webinars, workshops and the Celsius Toolbox.
- ✓ **Hands-on support for cities** through the forerunner groups.
- ✓ Influencing European **policy**.
- ✓ Support **innovation, replication and scaling** of pilots and demonstrators.

Heating & Cooling Initiative under Smart Cities Marketplace

What to expect during Year 1

- **Workshops** on lessons learned from the Celsius forerunner groups
  - to inspire further uptake of solutions, and
  - to benchmark the project underway against Smart Cities Marketplace members' activities
- Update the **Smart Cities guidance package** for district energy network projects
- Dedicated DHC **market uptake sessions**
- Smart Cities Marketplace Financing **Masterclass** with focus on heat infrastructure
- **Policy papers** & inputs to inform the EC about needs and challenges cities in the heat transition are facing

Smart Cities Marketplace

Welcome by the Action Cluster for Sustainable Districts & Built Environment and the European Commission

Georg Houben

Policy Officer

European Commission

Paul Cartuyvels

Action Cluster Chair

Smart Cities Marketplace

Unlocking Financing for District Heating – Challenges and Recommendations

Kristina Lygnerud

Head of the Energy Department

IVL

Swedish Environmental Research Institute

Magnus Andersson

Partner at IMCG

IMCG

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Project owners as municipalities, utilities see capital as a major obstacle

Abundance of sustainable capital

Challenges

Knowledgeable key-note speakers

Vibrant discussion

Recommendations

Position Paper

Exciting financial trends

EIB & EIF becomes **The Climate Bank** – committing €1 trillion of investment in climate and environmental 2021-2030.

Captial Market Union – Common standards and approach towards sustainable finance - **reorientation of pools of global saving and international capital markets.**

Global movement - Financial Policies For Sustainable Investments

Forbes – Lower risk investing in green

Etc

INTRODUCTION OF SPEAKERS

Kristina Lygnerud

Energy Department Manager
Swedish Environmental
Research Institute

&

Associate Professor at
Halmstad University

&

DHC+ Chair- Eruopean DHC
research platform

Steven Fawkes

Partner EnergyPro

EEFIG

The Energy Efficiency

Financial Institutions Group

Greg Gebrail

Principal Specialist

District Energy

EBRD

Magnus Andersson

Partner IMCG

Business development

Flexigrid, IRIS

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UAETP paper: Unlocking Financing for District Heat Challenges and recommendations

European Commission

Purpose of paper

The position paper presents the challenges of financing district energy projects, the diverse nature of projects and suggestion for next steps to overcome challenges.

It is based on stakeholder **interviews** as cities and financiers as well as on **scientific papers**.

The results of the paper will be presented to the European Commission (DG ENER) and EIB, with the ambition to further support the development of more efficient and sustainable financing of district heating and cooling projects

THE URBAN AGENDA INITIATIVE

Urban Agenda - Energy Transition Partnership

- Better Funding/Better Knowledge/Better Regulation
- Vision - Security & Resilience; Affordable, Fair and equitable; Clean & Sustainable
- Objective - **demand led**, smarter, integrated, interconnected and ultimately zero carbon
- **Action Financing for District Energy Task Group**

FlexiGrid

IRIS Smart cities

celsius

REUSEHEAT

REWARDHeat

This project has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement No 864048 & No 774199

OWNERSHIP TRADITIONS

The ownership traditions in DHC have traditionally been municipal or private…this has shaped the…

- business logics applied
- way that business is performed
- ambition to generate green solutions

and…has attracted a limited set of investors

INVESTOR UNDERSTANDING

To the wider investor community the understanding of dist heating investments is limited

- Return
- Risk
- Liquidity
- Sustainability

Investor understanding of district heating investments continued

Project phase	Risk exposure	Financial instrument	Possible financing body
1. Feasibility	Demand Permits Competition Credit Price External impacts…	Grant	National or international funding
2. Development	Same as above	Grant or Project Owner	Same as above or project owner funds
3. Construction	Construction, fixed asset	Loan	Infrastructure fund
4. Operation	Operational, Market	Loan	Pension fund, Insurance, Infrastructure fund
5. Reinvestment	Market	Corporate funding	Owner (municipality/ city/ private company)

Source: DHC+ Think Tank to unlock investments in DH

CHANGE AHEAD

The business model is changing

- Today: Centralized Heat Supply & Distribution (business logic of economy of scale)

- 2050: Fossil Free district energy necessitates the use of decentralized heat sources (solar, geothermal, ambient heat and waste heat) to meet the demand of interconnected neighbourhoods (business logic built around prosumer relationships, long-term customer arrangements and the use of local heat sources)

....so the district heating investment as we know it today is changing

The business model is changing continued

- New cooperations are created (DH operator and heat source owner: prosumerism)
- The customer becomes an energy partner (energy services, efficiency)
- Unprecedented combinations of technology providers (patchwork of solutions)
- Investor combinations for different phases (investor pc

There is a need amongst all to understand the future business of DHC

WHAT LENDERS SAY ABOUT TRENDS

What lenders say about trends

Increased competition - An **excess of liquidity** has created more competition among debt investors. E.g. Infrastructure debt funds that have traditionally favoured long-dated, high-rated project finance deals look for better returns, with many turning to shorter-dated corporate-style financing.

Growing markets - The market for district heating is growing. At our level**, financing models have not changed much though, nor did financing options**. For green networks, securing supply is a critical new quality and risk we are looking into. - EIB project analysist

Technical competence - Our sustainable energy systems desk provides financing for district heating. We contract out technical risk assessments as we do not have that expertise ourselves. This obviously means we only look at **larger, more mature projects** - Director green finance, Dutch wholesale & retail bank

Standardization - Projects are still unique, which makes it costly, time consuming, and risky to develop. We should work towards the **development of standardized models** that would allow a thorough and detailed analysis facilitating the development of economically viable projects. - Innovation manager, Spanish Infrastructure Company

RECOMMENDATIONS

Recommendations

@ Investors Bring in people from the industry in the due diligence process: avoid overestimating risk and make sure you understand the business model

@ Project owners Align the project ideas to the expectations of the investors: address the return, risk, liquidity and sustainability of your investment

...in sum investors and project owner Standardisation for project assessment - would increase market readiness of projects and reduce due diligence cost

@ Availability of Technical Assistance instruments exist use them! Use them early on in an investment venture

@ Policy makers Support the 2016 district energy strategy with incentives that facilitate the expansion of the district energy sector (credit facility?)

@ Support development of National aggregation platforms – Bundling projects can be an alternative?

DISCUSSION

Thank you for your attention!

Author: Kristina Lygnerud| Email: kristina.lygnerud@ivl.se or kristina.lygnerud@hh.se

Greg Gerbail

Principal Specialist at the EBRD

Practical experience from a financer's perspective

European Bank
for Reconstruction and Development

European Commission

Smart Cities Marketplace

Financing renewable and efficient district energy systems

March 2021

European Commission

EBRD
Who we are

An international financial institution supporting the development of sustainable well-functioning market economies

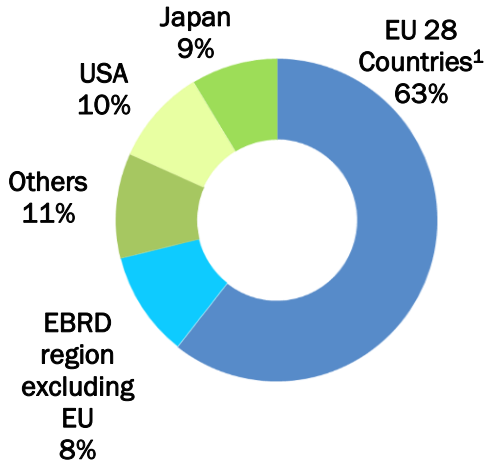
Highest credit rating
(AAA/Aaa)

Owned by 69 countries and 2 inter-governmental institutions
(the EU and EIB)

€30 billion authorised capital

1991	Established
1992	Russia and 11 other members of the former Soviet Union join
2007	The Czech Republic becomes the first country to "graduate" from the EBRD
2012	Starts investing in Egypt, Jordan, Morocco and Tunisia
2016	25th anniversary; China becomes 67th member
2017	Lebanon became a country of operation and the Bank also commenced operations in West Bank and Gaza

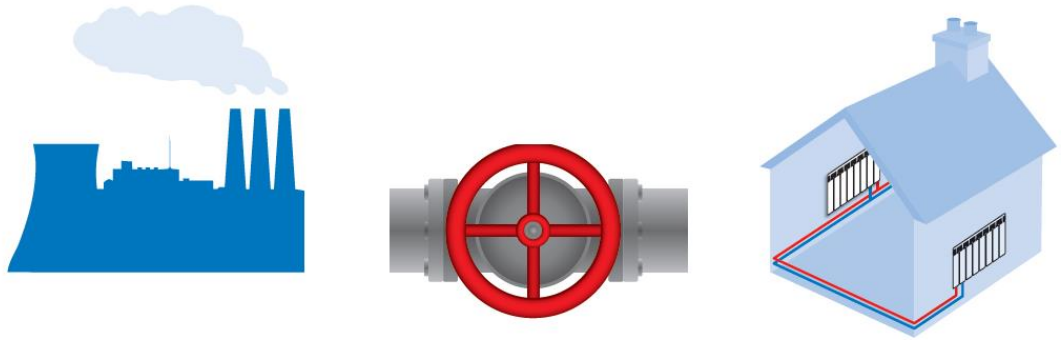
Shareholding structure



1. Includes European Community and European Investment Bank (EIB) each at 3%. Among other EU countries: France, Germany, Italy, and the UK each holds 8.6%

The Challenge

A cost-efficient transition to decarbonised heating and cooling requires a significant shift of investment away from fossil fuels towards district energy infrastructure and renewables. Brand new district energy networks are urgently needed alongside the extension of existing infrastructure to serve additional customers.



EBRD DE Financing Approach

Sovereign-backed loans	Municipal loans or utility loans guaranteed by municipality	Quasi-corporate utility loans	Loans to PPP/private companies
↓	↓	↓	↓
Central Government	Municipality	Utility Company or SPV	Private Company

Investment Size

€ 5 million to € 150 million

Obstacles to Project Bankability

Company

Customer

State

- Different countries, cities and private sector developers face different challenges
- Cost of alternative heat sources
- Regulation – is it an obstacle? Depending on the market, regulation is either:
  - Not sufficient or lacking, more regulation is necessary to “create certainty” and incentivise investment, or
  - Overbearing and too prescriptive, a lighter touch approach is needed to stop blocking investment.
- Above demonstrates that there is **no one size fits all regulatory model** for the sector
- In some Eastern or Central European countries a combination of historic underinvestment, poor service levels leading to disconnection of consumers and rigid price caps has created a unique obstacle to investment
- Lack of political buy-in or support

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How Cities or Government can Encourage DE Investments

- Ambitious national energy efficiency or renewable energy targets favour increased uptake of DE
- Regulation needs the right balance that **protects consumer rights**, enables DE operators to cover costs, make a reasonable profit and **incentivises investment in the sector**
- Planning or new build construction requirements for DE connection
- Embedding incentives in building codes or accounting for DE in green building certification schemes
- Public or state sector adoption of DE – creation of **anchor loads**
- **Up-front state funding**, either in the form of an equity stake or a capex grant may be necessary in less mature DE markets or for demonstration of innovative technology

THANK YOU FOR YOUR ATTENTION!

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Policy paper links:
Financial sustainability
Metering and consumption based billing

EBRD
One Exchange Square
London, EC2A 2JN, UK,
www.ebrd.com

European Bank
for Reconstruction and Development

European Commission

Scaling up investment and the design of financing instruments

Steven Fawkes

Managing Partner at EnergyPro Ltd

EnergyPro

European Commission

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Scaling up investment and the design of financial instruments

Dr. Steven Fawkes, EnergyPro

European Commission

STEVEN FAWKES & ENERGYPRO

- 35 years + experience in energy efficiency, energy services and financial services
- Founded EnergyPro in 2012
  - An impact led business that helps organisations transition to a net zero and regenerative economy
  - Main focus has been on financing energy productivity,now also active in designing & developing regenerative buildings
  - Advises corporates, investors, governments and multi-laterals and develops new tools and business models
    - Introduced Investor Confidence Project to Europe & led H2020 ICP Europe projects
    - EEFIG Derisking Project 2016-17: Co-Lead & Principal Author of Underwriting Toolkit
    - EEFIG 2019-23: Lead on Sustainable Taxonomy & Tagging working group, Lead on EE1st working group
    - Investment Committee of London Energy Efficiency Fund & adviser to 2 other funds
    - Currently advising UK government and UNESCWA (Arab region) on design of EE financing instruments
    - Developer of ESCO-in-a-Box™ business model
    - Adviser on H2020 and EEFIG Multiple Benefits projects
    - JV with EESL from India, the world's largest public ESCO

THE SIZE OF THE PROBLEM / OPPORTUNITY

The European Commission estimates that to achieve the newly agreed 55% climate target by 2030, around

EUR 275 billion of investments are needed

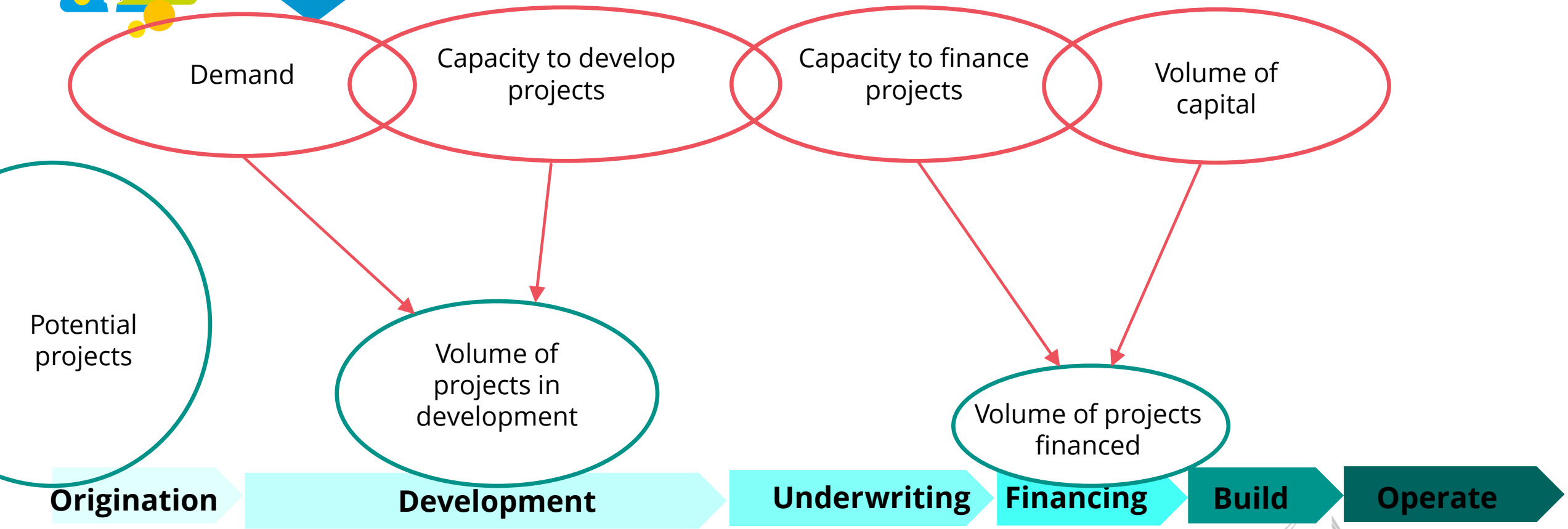
- the lion's share in energy efficiency.

Source: BUILD UP

European Commission

BARRIERS

A SYSTEMS VIEW



WHERE DO SOME OF OUR PROJECTS FIT IN?

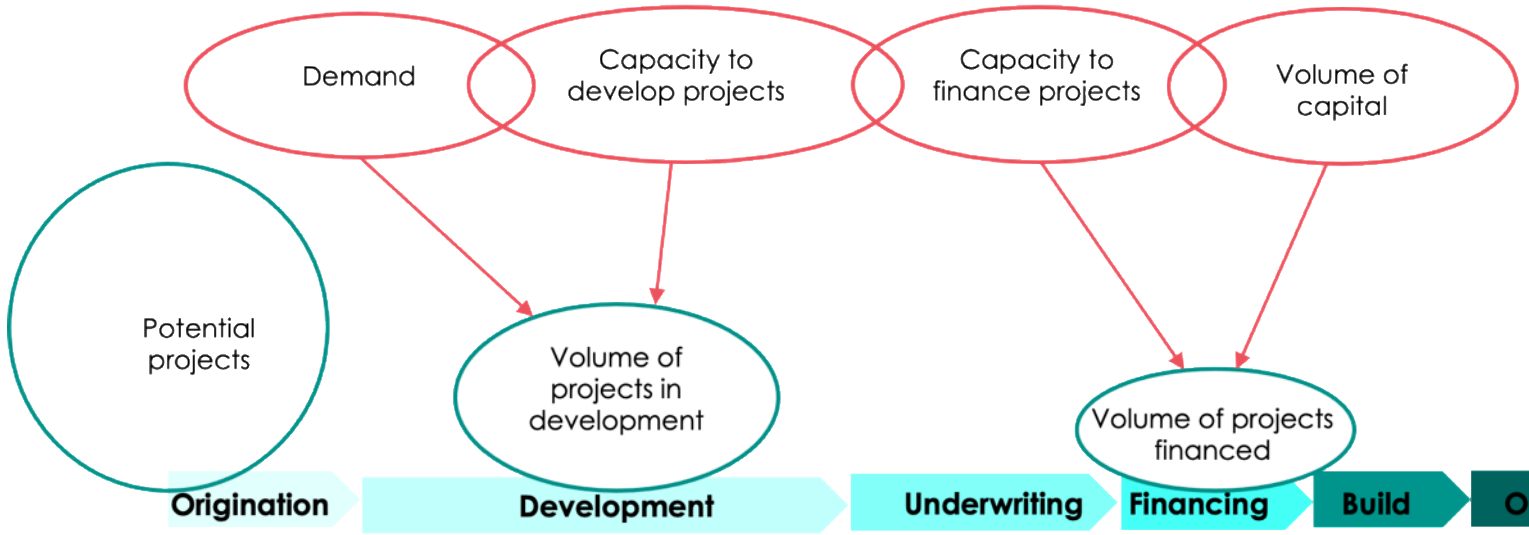
DESIGN OF FINANCING INSTRUMENTS

ESCO-IN-A-BOX

MULTIPLE BENEFITS

INVESTOR CONFIDENCE PROJECT

EEFIG UNDERWRITING TOOLKIT



MULTIPLE BENEFITS

What energy saving actions create the greatest business value?
Systematically answering this question drives the Multiple Benefits process

A set of tools to identify and value the multiple benefits from energy efficiency projects.

Results:

- **Identification of higher financial values**
- **Identification of strategic benefits increases priority**
- **Higher probability of project being approved**
- **Link to impact investing.**

mbenefits.eu

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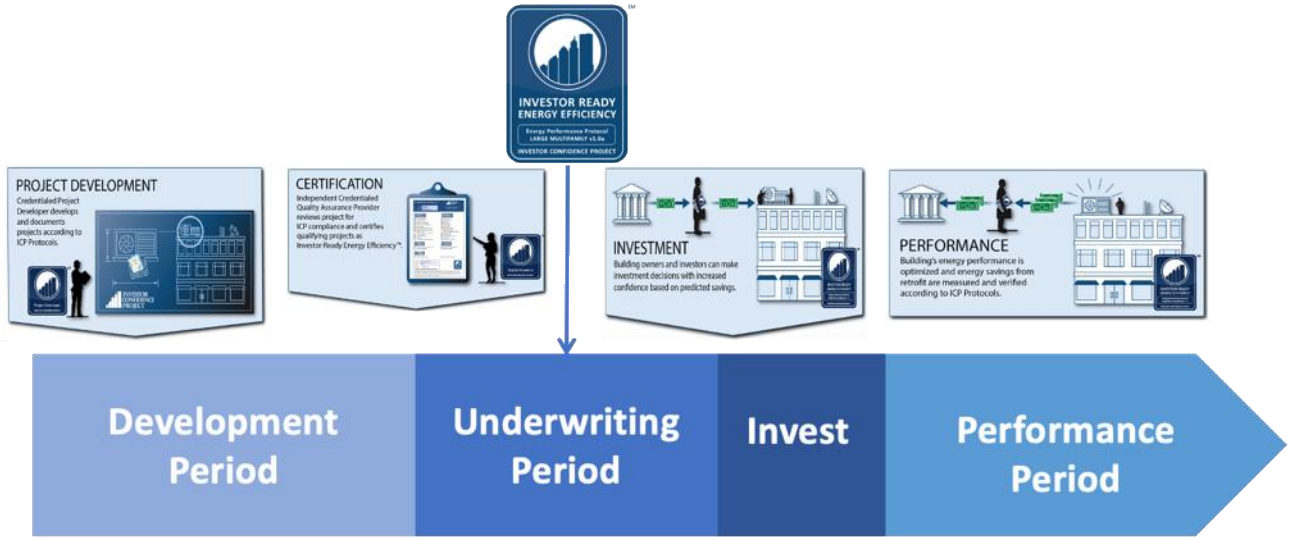
INVESTOR CONFIDENCE PROJECT



A set of open source Protocols to standardise the development process and documentation of energy efficiency projects.

Results:

- **Lower performance risk**
- **Lower transaction costs**

europe.eeperformance.org

INVESTOR CONFIDENCE PROJECT

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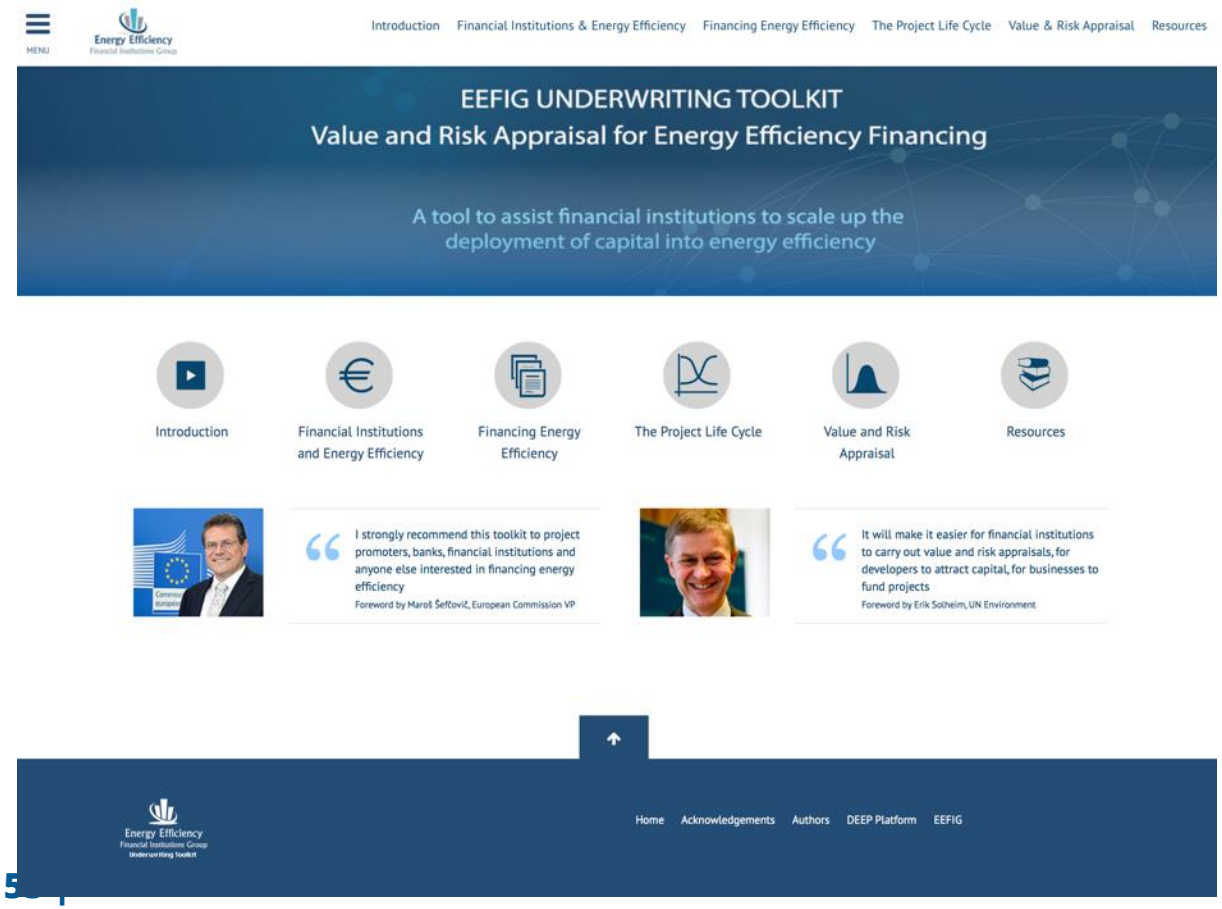
EEFIG UNDERWRITING TOOLKIT



A tool to:

- **help financial institutions better value and risk assess energy efficiency projects**
- **build capacity within financial institutions to understand energy efficiency projects**
- **provide a common language between developers and financial institutions.**

valueandrisk.eefig.eu

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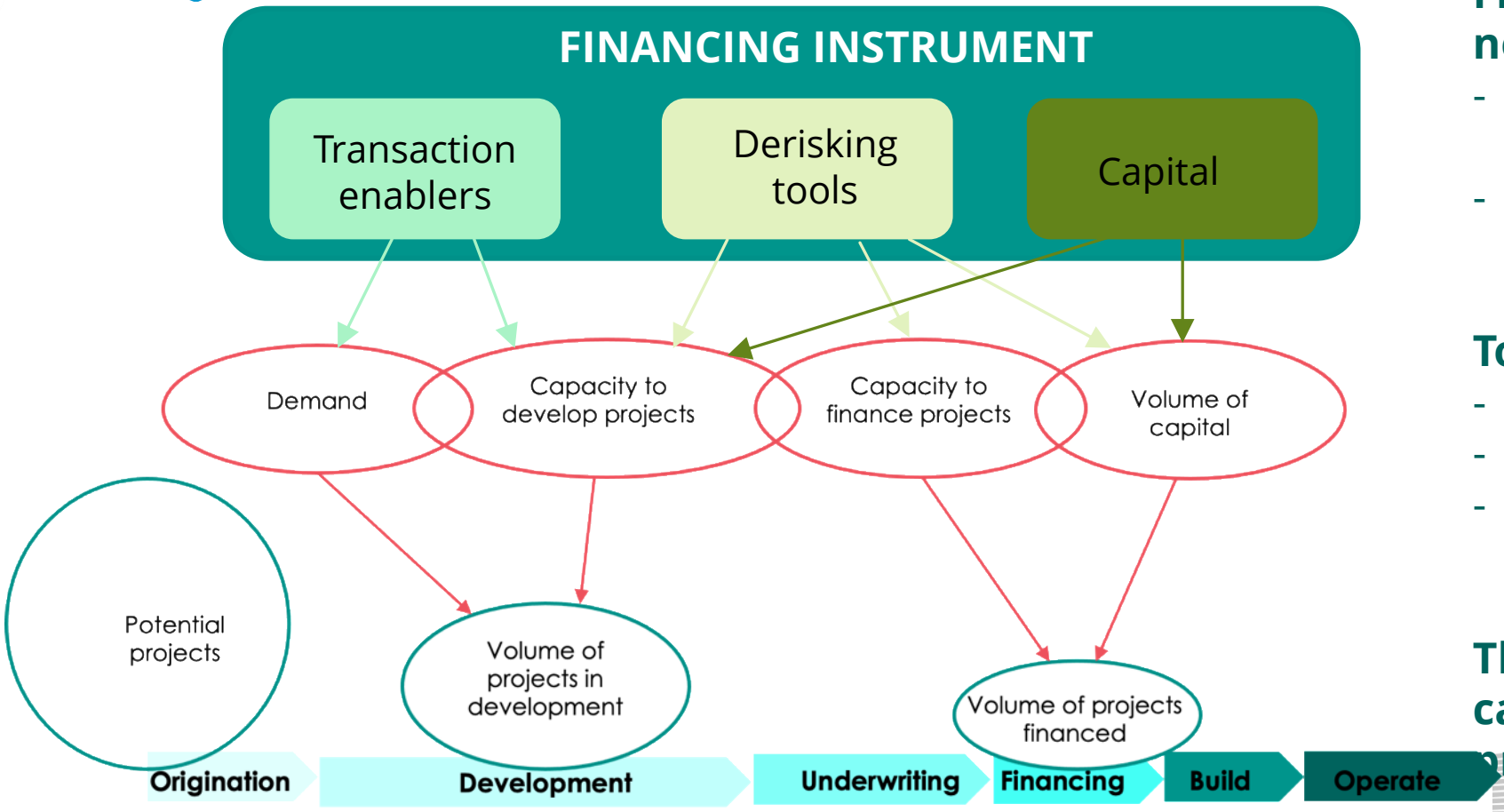
ESCO-IN-A-BOX

A complete operating system that allows:

- **community organisations, cities & regions to create & run their own ESCOs**
- **provides standard processes, contracts etc.**
- **provides access to finance and assurance services.**

epconnect.energy

DESIGNING FINANCING INSTRUMENTS



Financing Instruments need to:

- **address the development gap**
- **crowd-in private capital.**

To do that they need:

- **development capital**
- **derisking tools**
- **transaction enablers.**

The majority of project capital can come from private sector.

ADDRESSING THE WHOLE SYSTEM

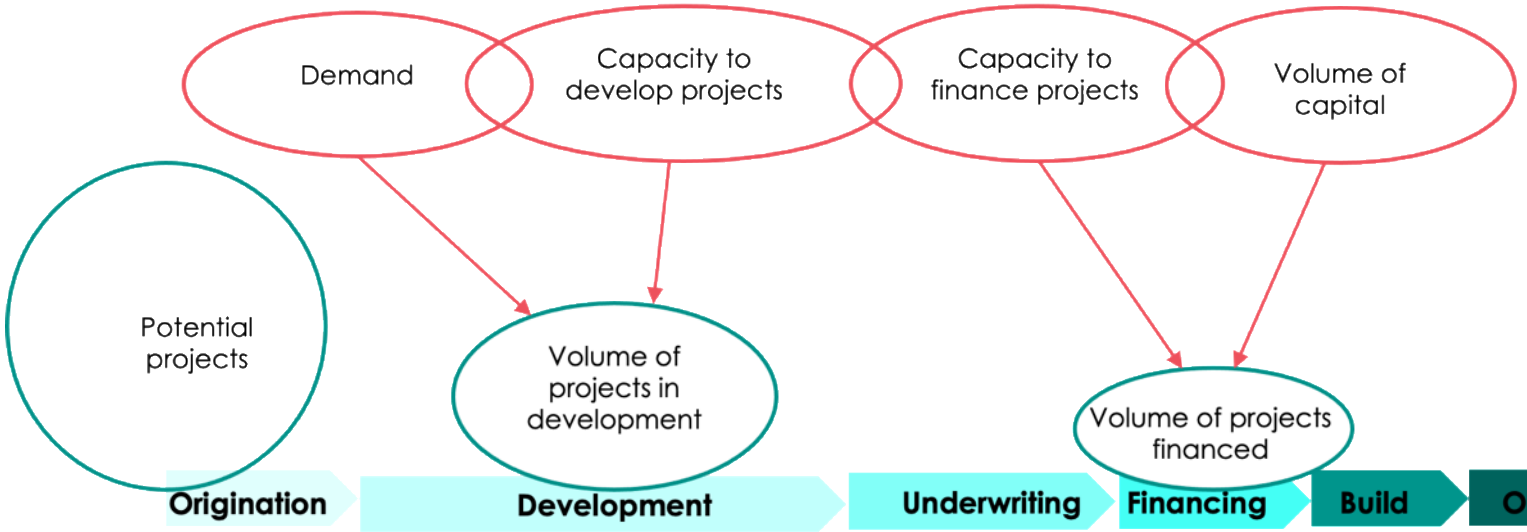
DESIGN OF FINANCING INSTRUMENTS

ESCO-IN-A-BOX

MULTIPLE BENEFITS

INVESTOR CONFIDENCE PROJECT

EEFIG UNDERWRITING TOOLKIT



TOP 5 RECOMMENDATIONS

- Focus on the development gap
- Standardise, standardise, standardise
- Build capacity in demand side, supply side & finance industry
- Design place and sector specific financing instruments that include:
  - development capital
  - transaction enablers
  - derisking tools
- Work with finance industry from day one to build a platform that can scale and ensure projects are bankable

STAY IN TOUCH!

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Wrap-up and next steps

<name>

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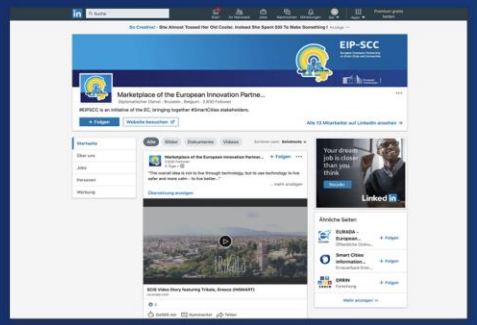
STAY IN TOUCH!



https://smart-cities-marketplace.ec.europa.eu

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Become member of our Action Cluster Sustainable Districts and Built Environment and **Initiative on District Heating and Cooling:** send an email to sustainabledistricts@eu-smartcities.eu

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@EUsmartcities

LinkedIn - https://www.linkedin.com/company/5211434/

European Commission

Thank you for your attention!

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