Module 1
Fundamentals of district energy

Module 2
Stakeholder coordination for district energy development

Module 3
Energy mapping and data collection to identify long-term opportunities for district energy systems

Module 4
Strategy development: Incorporating district energy into a local energy and low-carbon heat/cool strategies

Module 5
Policy development: Integrating district energy systems into urban planning

Module 6
Business models, financing options and procurement of sound sustainable district energy systems

eTraining on District Energy Development
WHAT DO WE DO?

Our goal: Help cities tackle the energy transition through district energy

Our model: A private-public partnership with over 60 partners

Our Approach: Take best practices from around the world, adapt and replicate

Where are we: Supporting over 30 cities in 14 countries

What we do:

1. Increase knowledge of multiple benefits of district energy
2. Provide technical assistance to identify potential pilot projects, undertake pre-feasibility studies, design business models, support the tender process and develop long-term local district energy strategies.
3. Scale-up locally, through the establishment of local multi-stakeholder coordination units, and nationally, supporting the development of a national framework to support project development.
4. Unlock investments: Support the identification of financial mechanisms to address financial barriers and support the first projects in new markets.
WHY IS DISTRICT ENERGY IMPORTANT?

Heating, hot water and cooling account for **60% of the global energy consumption** in buildings, largely met by fossil fuels.

Emissions from the buildings sector need to be **reduced by approximately 75%** by 2050.

Cooling demand will **grow by 625% by 2050** in selected regions of Asia and Latin America (IEA 2°C scenario).
WHAT IS DISTRICT ENERGY?

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MULTIPLE BENEFITS TO ACHIEVE DIVERSE POLICY OBJECTIVES

- HCFC emissions
- Reduced CO2 emissions
- Local, free and RE Sources
- Lower cost of cooling
- Green economy and resilience
- Balancing RE power
- Energy efficiency and access
- Reduced blackouts/grid stress
- Multiple Benefits
  Cities develop DES to achieve a variety of objectives

- Empower created 700 full-time jobs.
- GIFT City could lower electricity consumption for cooling by 65-80%
- Paris reduced refrigerant emissions by 90%
- Cyberjaya lowered cooling costs by 39%
“A mediocre technology pursued within a great business model may be more valuable than a great technology exploited via a mediocre business model” (Chesbrough, 2009)
CHARACTERIZATION OF BUSINESS MODELS IN DES

Business models in DES based on ownership type

- **Fully public models**
  - High degree of control
  - Potentially high degree of coverage
  - Medium/low returns
  - High public risk
  - E.g. Oslo (Norway)

- **PPP/hybrid models**
  - Medium degree of control
  - Coverage based on negotiation
  - Medium/high returns
  - Medium public risk
  - E.g. Paris (France), Banja Luka

- **Privately owned models**
  - Low degree of control
  - High returns
  - Medium/low public risk
  - E.g. Port Louis, (Mauritius), Abdali project

**Level of Engagement of the public sector will depend on:**
- RoI
- Level of risk

**Source:** District Energy in Cities, unlocking the potential of Energy Efficiency and Renewables (UNEP, 2015)
THANK YOU FOR YOUR ATTENTION

For more information on:
the Global District Energy in Cities Initiative
the Copenhagen Center on Energy Efficiency (C2E)
please visit the website or contact:

District Energy in Cities: http://districtenergyinitiative.org

Copenhagen Centre on Energy Efficiency: https://c2e2.unepdtu.org/

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