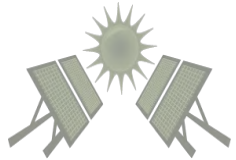




# EU GCC CLEAN ENERGY NETWORK II

Join us: [www.eugcc-cleanergy.net](http://www.eugcc-cleanergy.net)

Contact us: [contact@eugcc-cleanergy.net](mailto:contact@eugcc-cleanergy.net)



## 3rd IEF-EU Energy Day

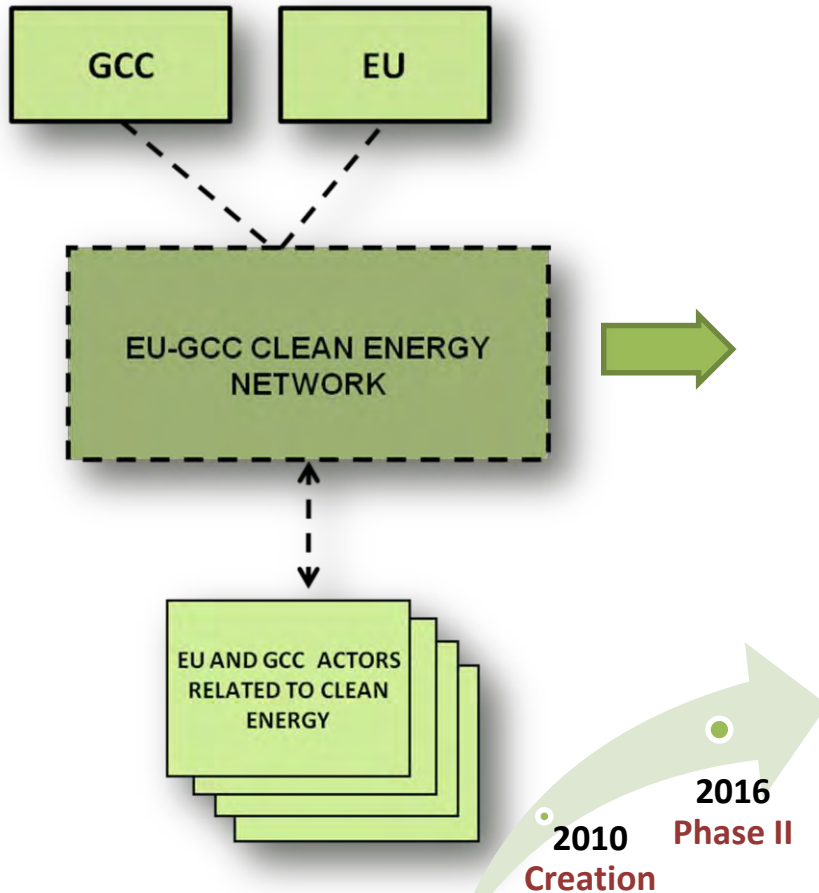
**Dr. Mustapha Taoumi**  
**Clean Energy Technology Key Expert**

**Riyadh, 26 February 2019**

Funded by



# The Network at a Glance

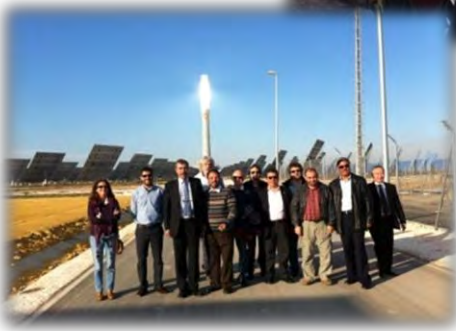


✓ *The catalyst and facilitator* for cooperation on clean energy

✓ *The practical instrument* for cooperation activities in the area of clean energy technologies:

1. Renewable Energy Technologies
2. Energy Efficiency and DSM
3. Clean Fossil Fuels
4. Carbon Capture, Storage and Usage
5. Regional Electricity Market Integration, and
6. **Climate Change Policy.**

# What we do



- **Bridge**
  - Technical Site Visits
  - Facilitation of Exchange of Researchers
  - Joint Research Publications
  - Develop Project Ideas, Proposals
  - Industry collaboration/ matchmaking
- **Source**
  - Training Seminars
  - Policy Studies, Technical Papers
  - Advanced website
- **Platform**
  - Working Groups Meetings
  - Workshops, Conferences

# How should the Network help?

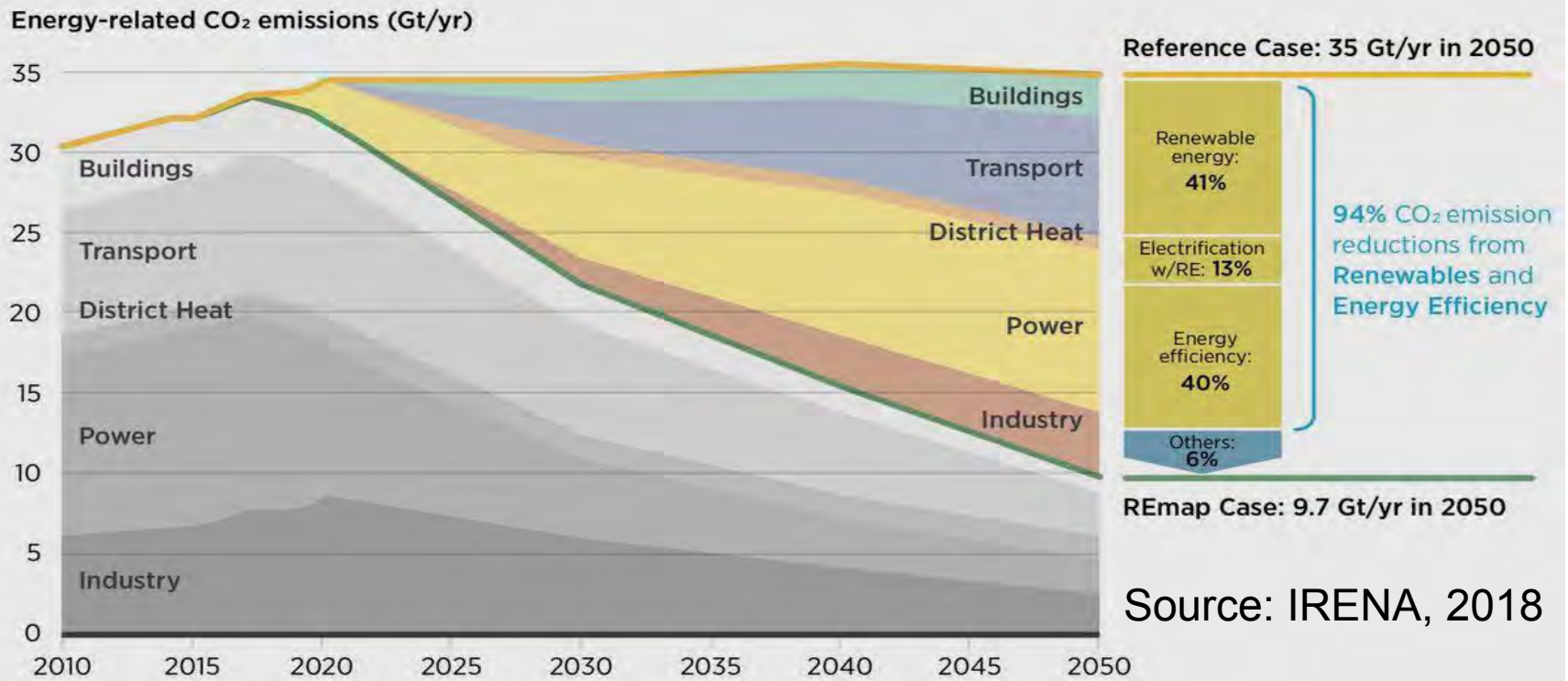
- **Open/free membership at the moment**
- **Expert's Meetings / Workshops**
- **Activities include organisation/facilitation of :**
  - Capacity building & Study Tours in Europe
  - Policy / Technology Studies & briefs
  - Proposals preparation/ Project Fiches
  - Industry collaboration & matchmaking
- **Synergy with other ongoing initiatives in the EU and the GCC**



# Renewables & Energy Efficiency as a key drivers for Energy Transition

Renewable energy and energy efficiency can provide over 90% of the reduction in energy-related CO<sub>2</sub> emissions

Annual energy-related CO<sub>2</sub> emissions and reductions, 2015-2050 (Gt/yr)

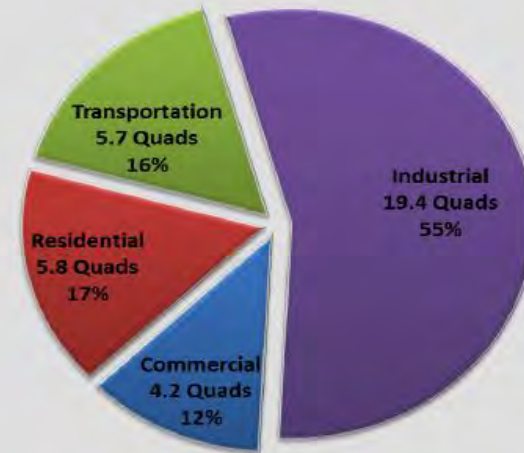




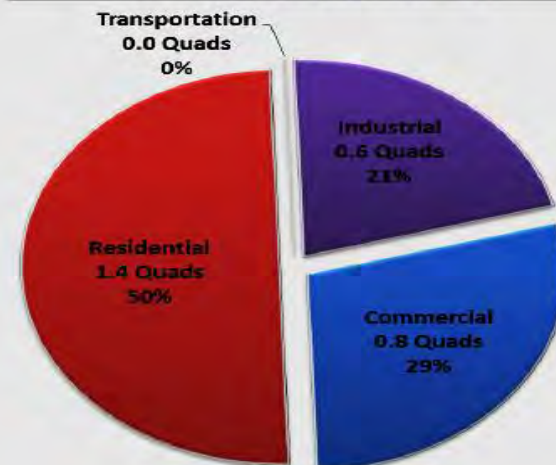
# Primary Energy in the GCC

- The primary energy production in the GCC countries doubled in the last 3 decades.
- These countries witnessed also a sharp increase in energy consumption. The average consumption /production ratio in the GCC countries is 32%.
- The GCC countries are ranked among the highest countries in term of energy consumption per capita. This high energy consumption reflected directly on CO2 emissions in the GCC countries.

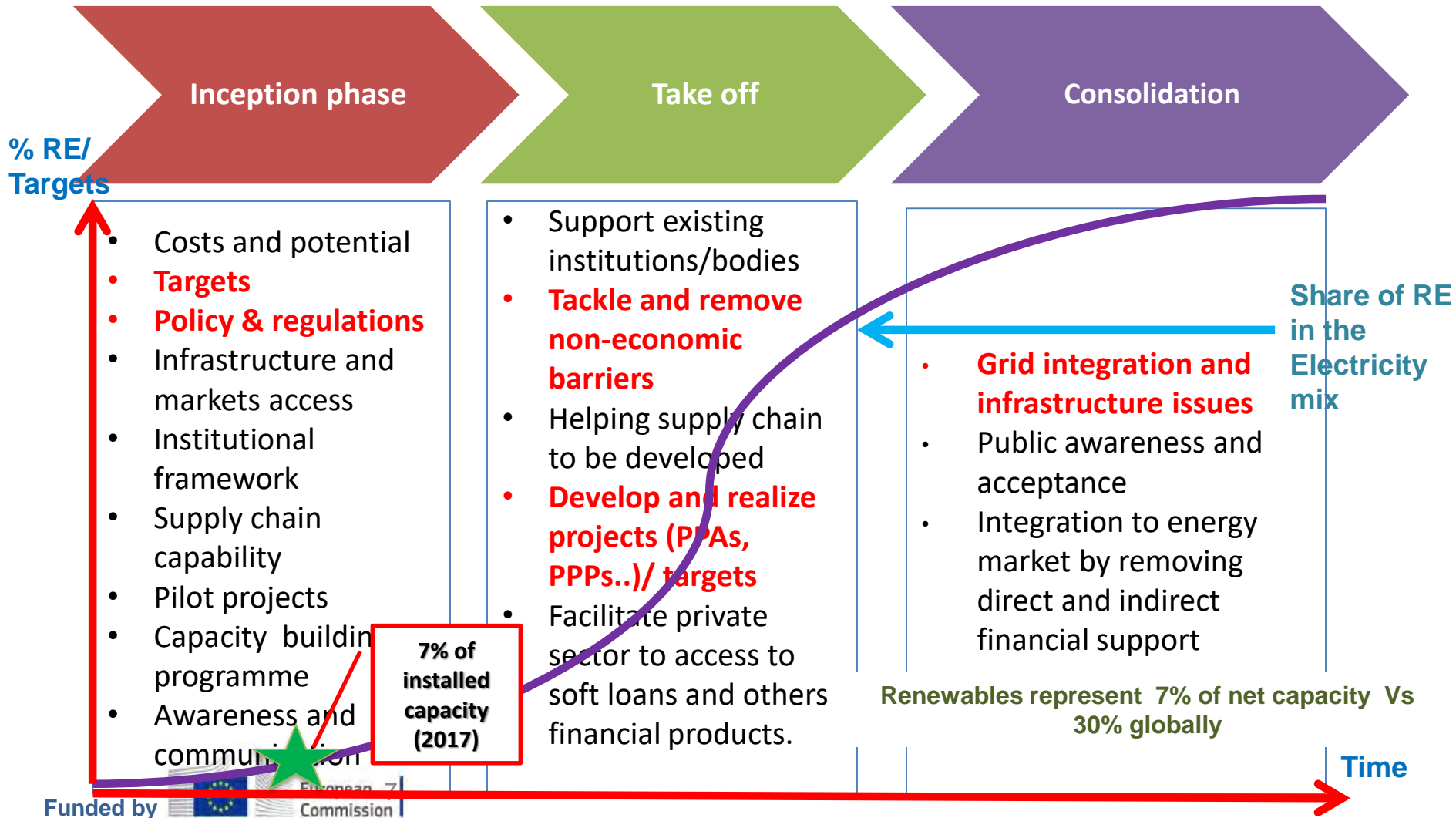
Middle East Primary Energy Consumption by End-Use Sector  
Quadrillion Btu (quads) - 2015



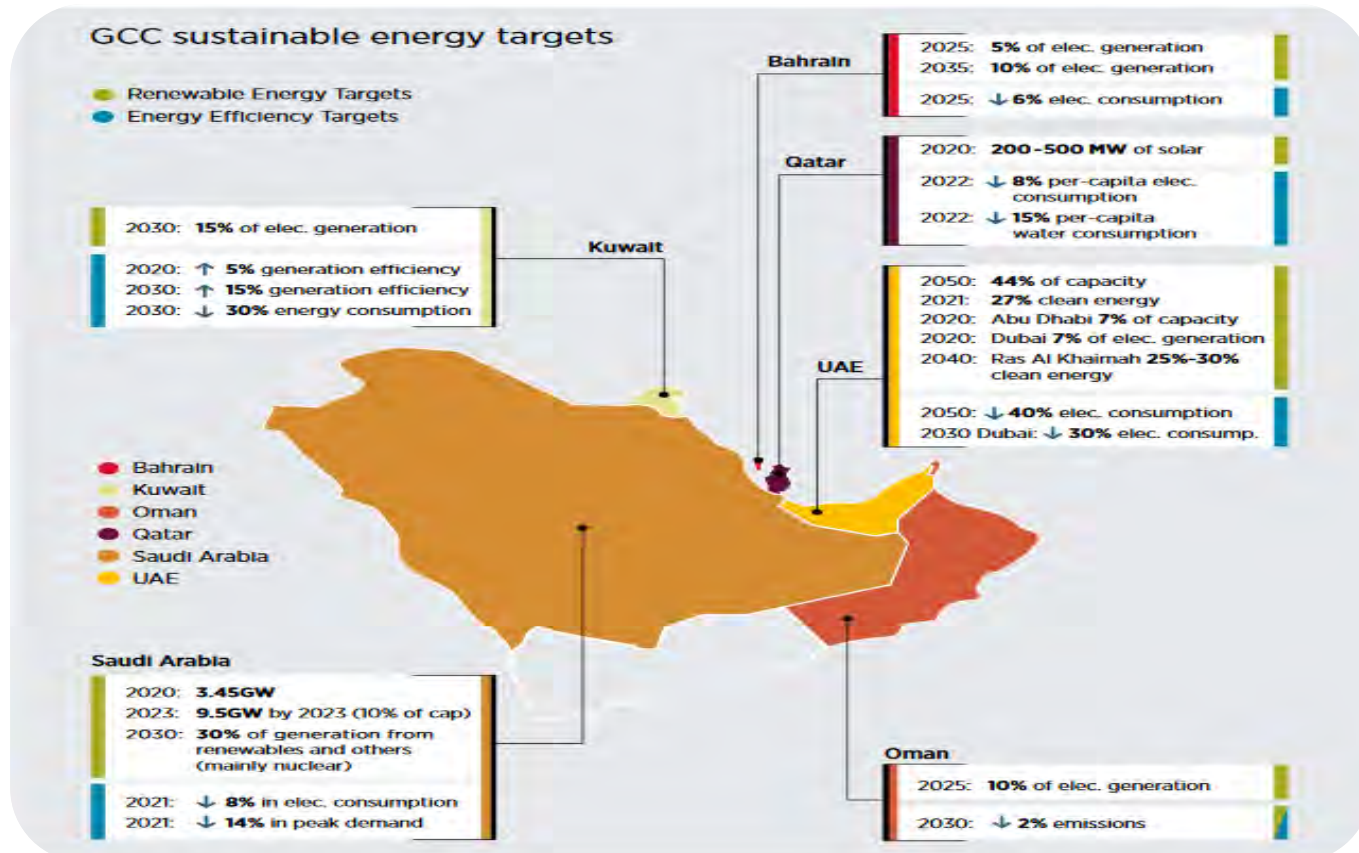
Middle East Electricity Consumption by End-Use Sector  
Quadrillion Btu (quads) - 2015



# The share or Renewables in the Electricity Mix in MENA region



# Great Momentum for solar and wind



IRENA, 2019

**GCC expected to emerge as one of the fastest growing PV markets**



## Climate-Energy Framework 2030

[COM(2014)15&COM(2014)520]

European Council 23 et 24/10/2014

- 40% GHG reductions (from 1990 levels)
- 27% Renewable Energy → **32%** (ECommission, 14 June 2018)
- Improving energy efficiency  
27 → **32.5%** (ECommission, 14 June 2018)

2030

## Climate-Energy Framework 2020

[COM(2010)639]

- 20% GHG reductions
- 20% Renewable Energy
- 20% Improving energy efficiency

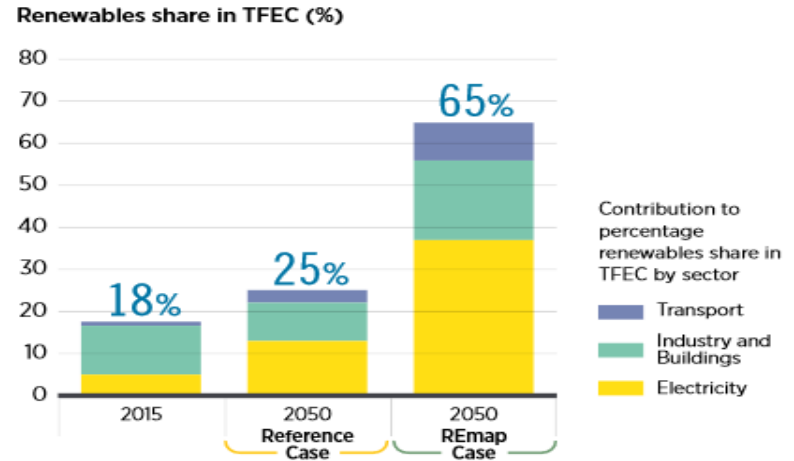
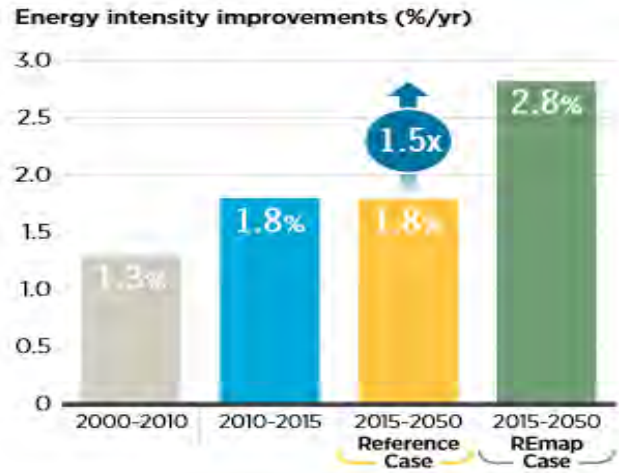
2020

2050

Path roads 2050 [COM(2011)112]

- 80-95% GHG reductions
- 88-91% Reductions for residential and tertiary sector

# Significant improvements in energy intensity are needed and the share of renewable energy must rise

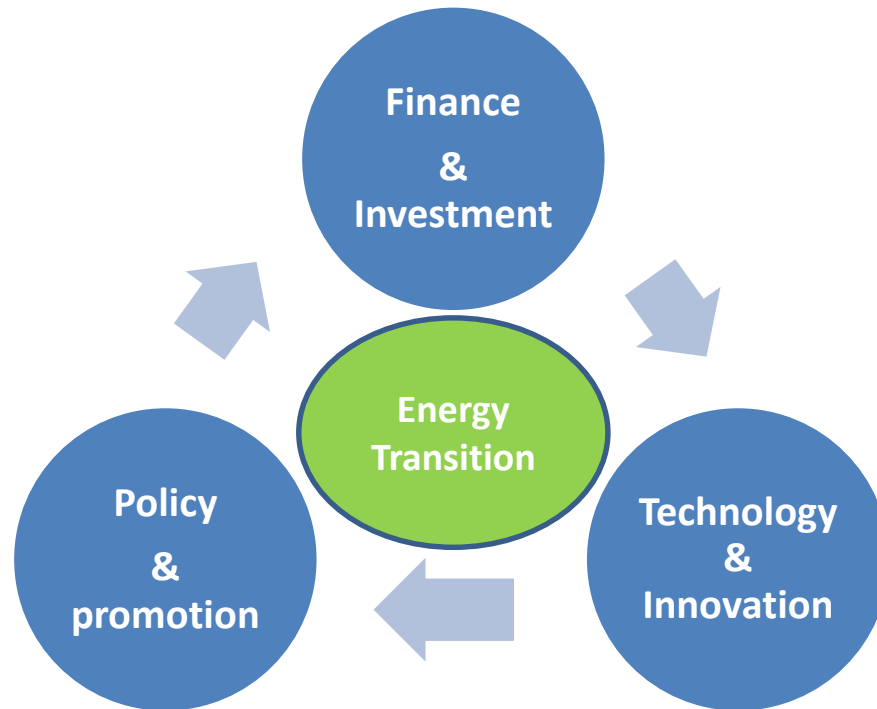


Source: Historical energy intensity improvement values from (SE4ALL, 2016), projections based on IRENA analysis (2018)

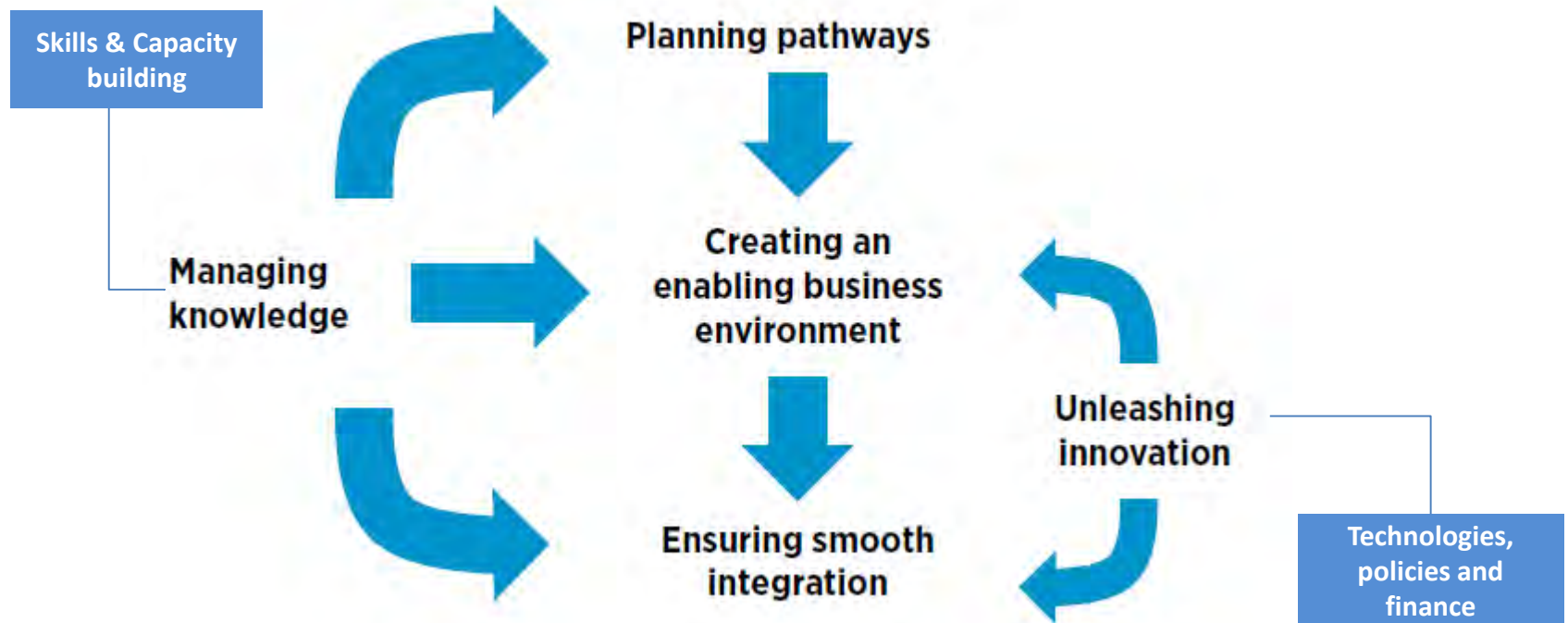
# Energy transition is needed in all the sector of the economy

- The accelerated uptake of renewables needs to take place across all sectors of energy use (sector integration-coupling): buildings, transport and industry, not only in the power sector.
- Energy Efficiency and improved energy access can advance the share of RE in the global energy mix - total final energy consumption (TFEC)- to as much as **36% by 2030 (19.3% in 2015)**
- In industrial processes, the demand for heat is vastly greater than the demand for electricity (74% vs 26%, respectively, of industrial energy end use). Globally, the demand for heat in industry outstrips the total demand for electricity in all sectors.

# Key pillars for accelerating the energy transition



# Policy action for scaling up Clean Energy uptake



**Enabling business environment and unleashing Innovation are key to accelerate clean energy growth**



# Looking forward

- Member States to further develop a **clear, flexible & inclusive policies along with long term & achievable targets** that mitigate market and commercial risks for investors and lenders (including energy subsidy reforms). The aim is to create stable outlook for the Clean Energy market
- Improve **awareness of demonstration projects** on a larger scale
- **Develop workforce skills, ideally through national strategies (i.e. Build-UP Skills implementation,...)**
- **Private Sector** to deliver energy efficiency and RES technologies to market;
- Plan **(financial) support** measures to stimulate EE market development as part of the Clean Energy roadmaps.

# Looking forward

In parallel, integration measures are required to reach a high share of VRE in the energy/electricity mix and reduce energy intensity:

- Energy Efficiency & Demand-side measures.
- Flexibilisation, digitization, direct power usage
- Electricity storage to provide a broad range of different system and ancillary services including e.g. District Cooling, EVs,...
- Strong and smart transmission and distribution grids, which smooth VRE output and connect flexible resources together.
- Promotion of other RE market niches such as Solar Roof Top systems, Solar-Heat for Industry, desalination, W2E, geothermal...
- Production of Hydrogen using solar PV technologies coupled with electrolysis and photocatalysis

# Cities have an important role and could be a collaboration opportunity

## Climate/Clean Energy Smart Cities Initiative projects:

- To exploit cost-effective measures, 0.4-2.0% of city-scale GDP could be invested each year for the next ten years.
- This would generate direct savings of 2.1-8.7% of city-scale GDP in 2025 and create many thousands of jobs.
- It would also generate carbon reductions of 15-39% relative to BAU trends.
- If these findings were replicated and similar investments were made in cities globally, then they could generate reductions equivalent to 10–29% of global energy-related GHG emissions in 2025.

## EU & GCC Cities

- Many EU cities are involved in climate change action and different groups (e.g. C40, WWF City Challenge, ICLEI, Covenant of Mayors).
- Dubai: C40 Climate Leadership Network, Carbon Abatement strategy, 16% reduction by 2021, Adaptation Strategy in development

Source: The Economic Case for Low Carbon Cities (2014)

# Key messages



Technology cooperation is key to promote **innovation** and **sustain** the emerging Clean Energy Technologies market.



The **EU GCC Clean Energy Technology Network** stands ready to cooperate with EU and GCC stakeholders

# Thank you!

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