

# The Age of Electricity Beckons

ABB Channel Partners event

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29 January 2025

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# Agenda

- **Global eco-geo-pol fragmentation: costly & accelerates deglobalization**
- **Geo-strategic developments: regional implications**
- **Challenges for MENA: focus on climate change & energy transition**
- **Technology deployment critical for energy transition**
- **ABB's role in the energy transition**

# Deconstructing Globalization and a New Emerging World Order?

Shifts in Global  
Economic  
Geography  
MAGAnomics

Changing Trade  
Patterns & Supply  
Chains

Energy Security

Climate Change  
Energy Transition

Rapid Technological  
change

Food Security

Cold War II

Increased Defence  
Spending

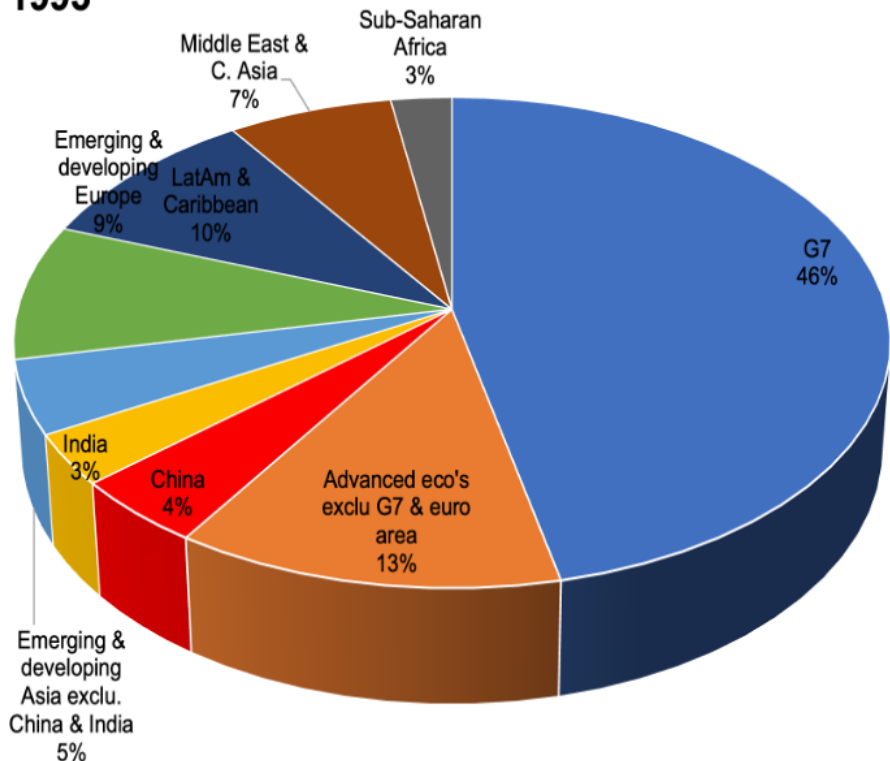
BRICS+ & new  
institutions

**Monitoring geo-political developments & risks becoming a priority**

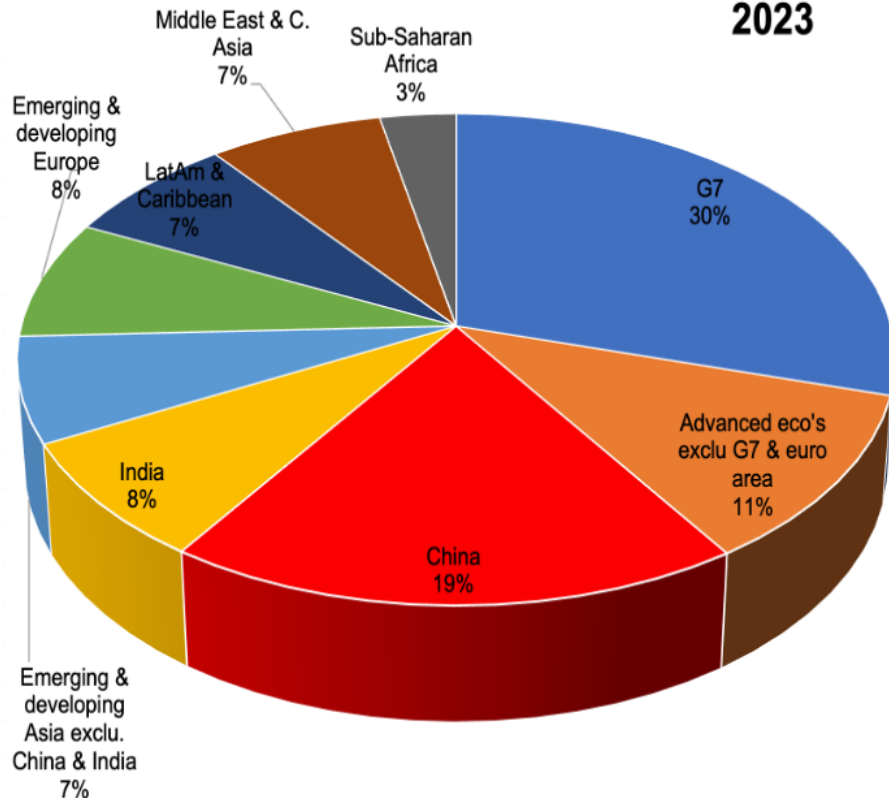
# Shifting Global Economic Geography Towards Asia

GDP based on purchasing-power-parity (PPP), share of world total

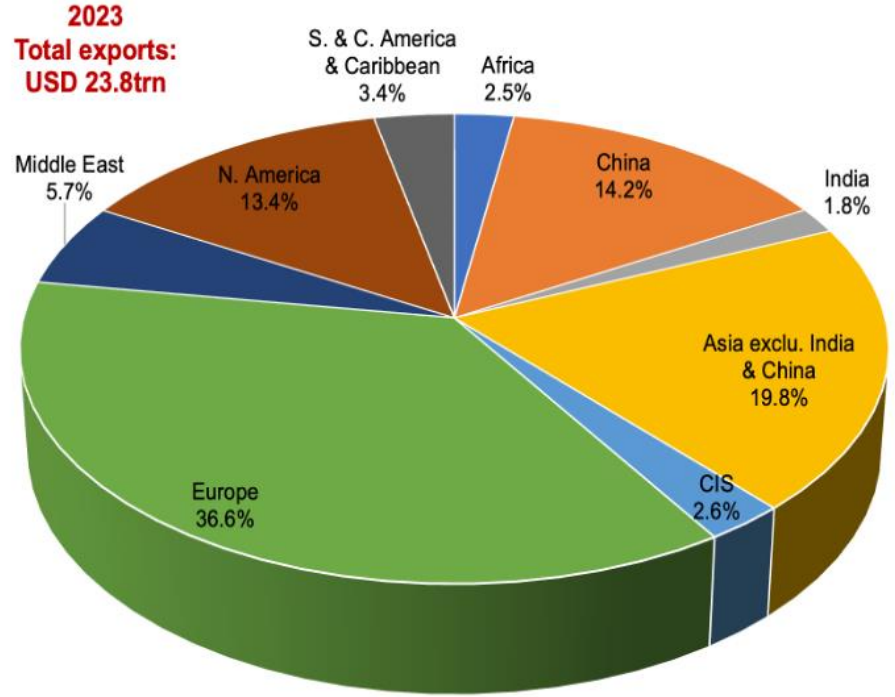
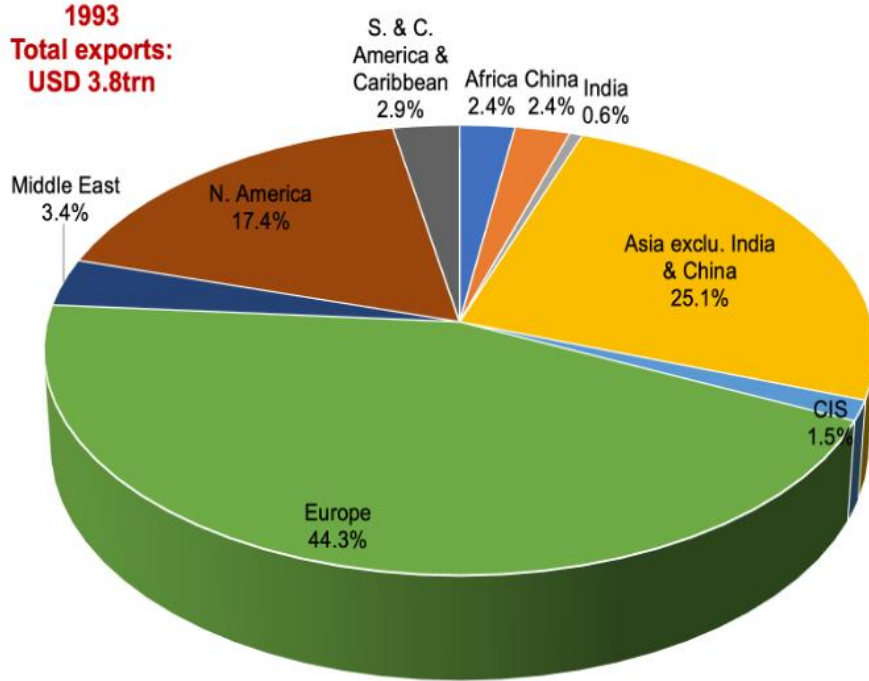
1993



2023



# Global Trade Rapidly Expanded with Globalisation: Asia is the Dominant Trade Partner for the World



**Asia became dominant economic partner for Middle East**

# Global Fragmentation / China Decoupling is costly & accelerates deglobalization => Cold War II?

## Economic Costs Of Fragmentation

### Trade restrictions

Lessens economies of scale, efficiency gains & competition

**Potential loss from collapse in trade b/n blocs: 2.5%-7% of global GDP**

### Capital flows restrictions

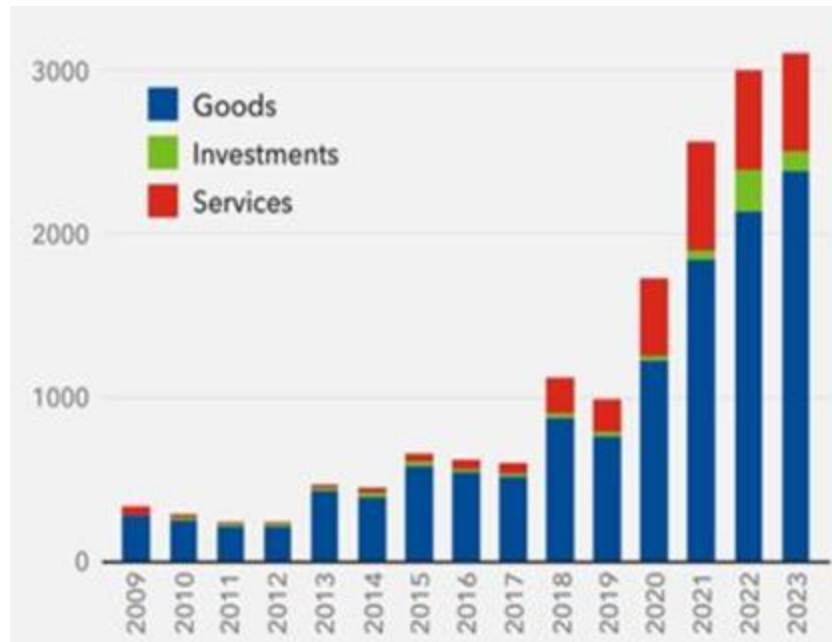
Lower capital accumulation, higher risks & macro volatility

**Potential loss: long-term global losses of about 2% of GDP**

### Tech/Labour flow barriers

Hampers diffusion of technology & innovation => **lower productivity growth; impact on LDCs & small countries**

**Trade restrictions imposed annually worldwide: more barriers to commodity trade would boost inflation**



Source: Gopinath et. al. (2025): "Changing Global Linkages: A New Cold War?", *Journal of International Economics*, Jan 2025;  
[https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=4917966](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4917966)

Source: IMF. <https://www.imf.org/en/News/Articles/2024/05/07/sp-geopolitics-impact-global-trade-and-dollar-gita-gopinath>

# Emerging New World Order

- **Shift in Global Economic Geography towards Emerging Asia**, with the emergence of China & its accession to the WTO a major milestone. Expanding Asian supply chains.
- **Emerging 2 bloc world with rising prominence of BRICS**. A wider **BRICS+** group (including countries from the MENA) account for ~35% of global economic activity & 22% of global trade
- **But USD is still the dominant currency**: 83.3% share in trade finance market, though share as global payments currency has been declining (47% in Sep '24). Rising share of RMB + BRICS Bridge +BRICS Pay could progressively erode \$ dependency.
- **Weaponisation of the USD**, financial markets & payments system segmentation. Arab nations joining BRICS+ is important: potential development of an alternative payment system to SWIFT & \$-based networks

# Trump Presidency & Potential Impact on the MENA region

## Trade tariffs & Protectionism

- Exacerbate global trade tensions and lead to retaliatory actions
- National security => industrial policies
- For the GCC, could lead to:
  - (A) China trade & investment diversion
  - (B) Tariffs on aluminium, steel & similar products

## O&G market and Oil prices

- “Drill baby drill” policy to support US producers
- For the GCC – adverse effect given potentially lower oil prices => negative impact on growth, fiscal & current account balances

## Energy transition

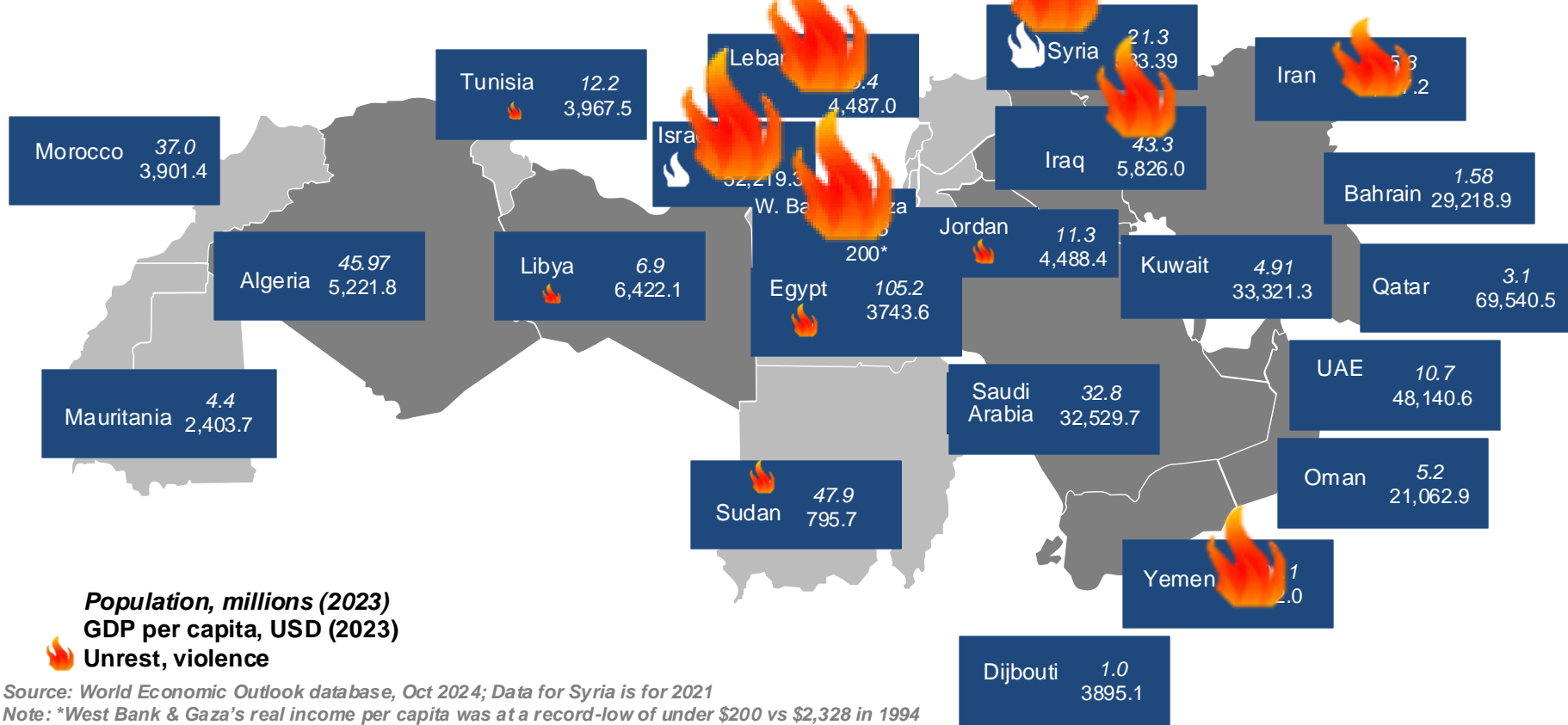
- Pause button on climate commitments raises climate risks
- Offers an opportunity for the GCC: to increase clean energy investments, with an aim to export renewable energy & climate tech!

## MAGAnomics

- Could rekindle inflation => slower pace of Fed rate cuts => negative impact on countries with high external debt
- Commitments from GCC for investments in US: KSA, Damac
- Tech wars / AI / chip wars
- No wars policy + opportunity to rebuild & redevelop = relative regional stability

# MENA: Wide Inequality in Incomes, Wealth & Resources

**Drivers of growth:** Demographics & Rapid urbanisation; Regionalisation; Energy Transition, accelerating trade & investment links with Africa, China & wider Asia; Digital transformation.



Source: World Economic Outlook database, Oct 2024; Data for Syria is for 2021  
Note: \*West Bank & Gaza's real income per capita was at a record-low of under \$200 vs \$2,328 in 1994 (World Bank estimate based on PCBS data, Dec 2024).

# Geo-Political Landscape: Axis of Resistance vs Others vs ROW

عدو عدوي هو صديقي ; أنا وأخي على ابن عمي وأنا وابن عمي على الغريب ROW

	Egypt	EU	Hamas	Hezbollah	Iran	Israel	Palestinian Authority	Qatar	Saudi Arabia	Syria	Turkey	US
Egypt		😊	😡	😡	😟	😊	😟	😊	😊	😟	😟	😊
EU	😊		😡	😡	😡	😊	😟	😊	😊	😊	😟	😊
Hamas	😡	😡		😟	😟	😡	😟	😊	😡	😡	😊	😡
Hezbollah	😡	😡	😟		😊	😡	😟	😟	😡	😡	😟	😡
Iran	😟	😡	😟	😊		😡	😟	😟	😡	😡	😟	😡
Israel	😊	😊	😡	😡	😡		😟	😡	😟	😡	😟	😊
Palestinian Authority	😟	😟	😟	😟	😟	😟		😟	😟	😟	😊	😟
Qatar	😊	😊	😊	😟	😟	😡	😟		😟	😊	😊	😊
Saudi Arabia	😊	😊	😡	😡	😡	😟	😟	😟		😊	😟	😟
Syria	😟	😊	😡	😡	😡	😡	😟	😊	😊		😊	😊
Turkey	😟	😟	😊	😟	😟	😟	😊	😊	😟	😊		😟
US	😊	😊	😡	😡	😡	😊	😟	😊	😟	😊	😟	

😊 Friends    😟 It's complicated    😡 Enemies

# Geo-eco-pol fragmentation provides incentives for greater MENA regional integration, driven by KSA & UAE

## Changes in Regional Landscape

- **Break up of the “Axis of Resistance”**
- **Potential Reconstruction & Re-development:** Gaza, Iraq, Lebanon, Libya, Syria, Sudan.
- **Greater regional integration:** foreign aid & financial support; e.g. Egypt Too Big to Fail.
- **Integration of GCC power-water-transport infrastructure**

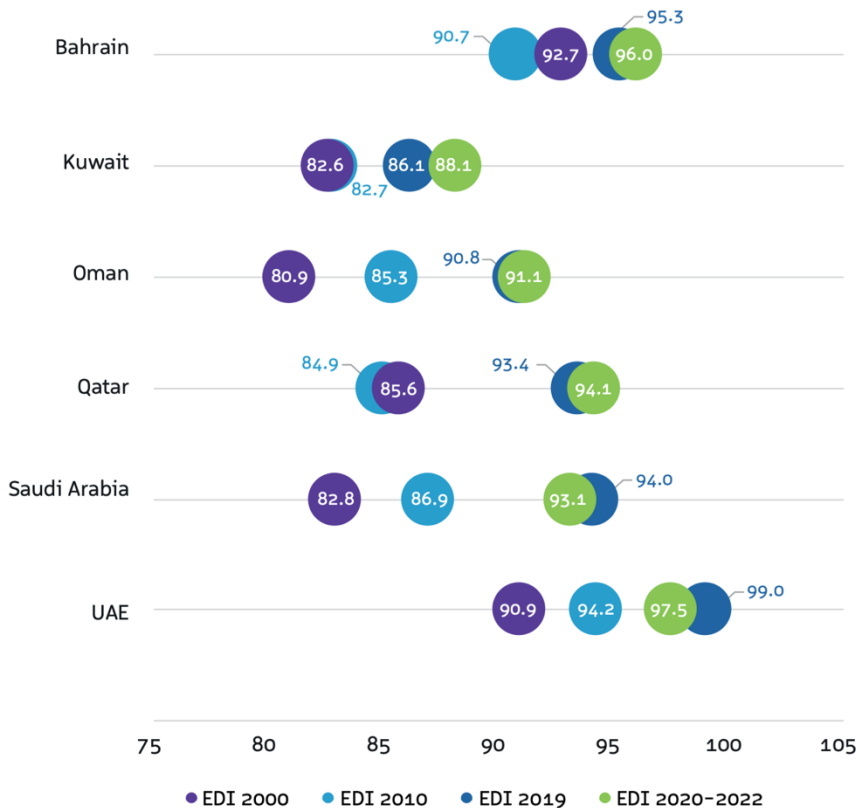
## Regionalised Globalisation

- Opening to **Africa & Asia:** AfCFTA, AFTA, APEC, RCEP, NEOM, Red Sea Council
- **Trade & investment agreements: GCC FTAs with New Zealand, Singapore & EFTA nations (India, NZ, JP in discussion). China? CEPAs (UAE signed 12 - with India, Turkey, Indonesia to latest Kenya, Malaysia & NZ)**
- **Economic partners integrated into GCC-connected Global Supply Chains**

# GCC can benefit from global fragmentation via increasingly diversified, integrated & globally connected economies => emerging “Middle Powers”

## Economic Diversification Index Across the GCC

Source: *Global Economic Diversification Index 2024*



GCC building of economic and financial power, having built **soft power** from international events & diplomacy

**Three strategic factors enabling the GCC** to benefit from global fragmentation:

- **GCC’s geography b/n Africa and Asia; participation in international blocs** (BRICS+, India-Middle East-Europe Economic Corridor)
- **Economic diversification of the GCC**
- Unique in being **Old and New/Renewable energy powerhouses**

GCC can use this as an opportunity to shape MENA region into **an interlinked trade and investment hub.**

Source: *“GCC can emerge as ‘Middle Powers’ in second Cold War”, Op-ed by Dr. Nasser Saidi in AGBI, Jan 2024*

# MENA highly climate stressed...

MAJOR CLIMATE RISKS



## LEGEND

- Precipitation variability
- Drought risk
- Heatwave
- Desertification
- Coastal erosion
- Urban heat land effect
- Emerging health risks
- Flooding
- Risks of water scarcity
- Agricultural productivity losses

## SOCIO – ECONOMIC CONTEXT

- Oil export reliance
- Financial and or economic crisis
- Protests and social unrest
- High and medium intensity conflict (Libya, Syria, Iraq, Yemen)
- Food import dependency
- High institutional/social fragility (Lebanon, WB&G)
- Spill overs from conflict (Jordan, Lebanon)

## ECONOMIC STRUCTURE AND GHG FOOTPRINT

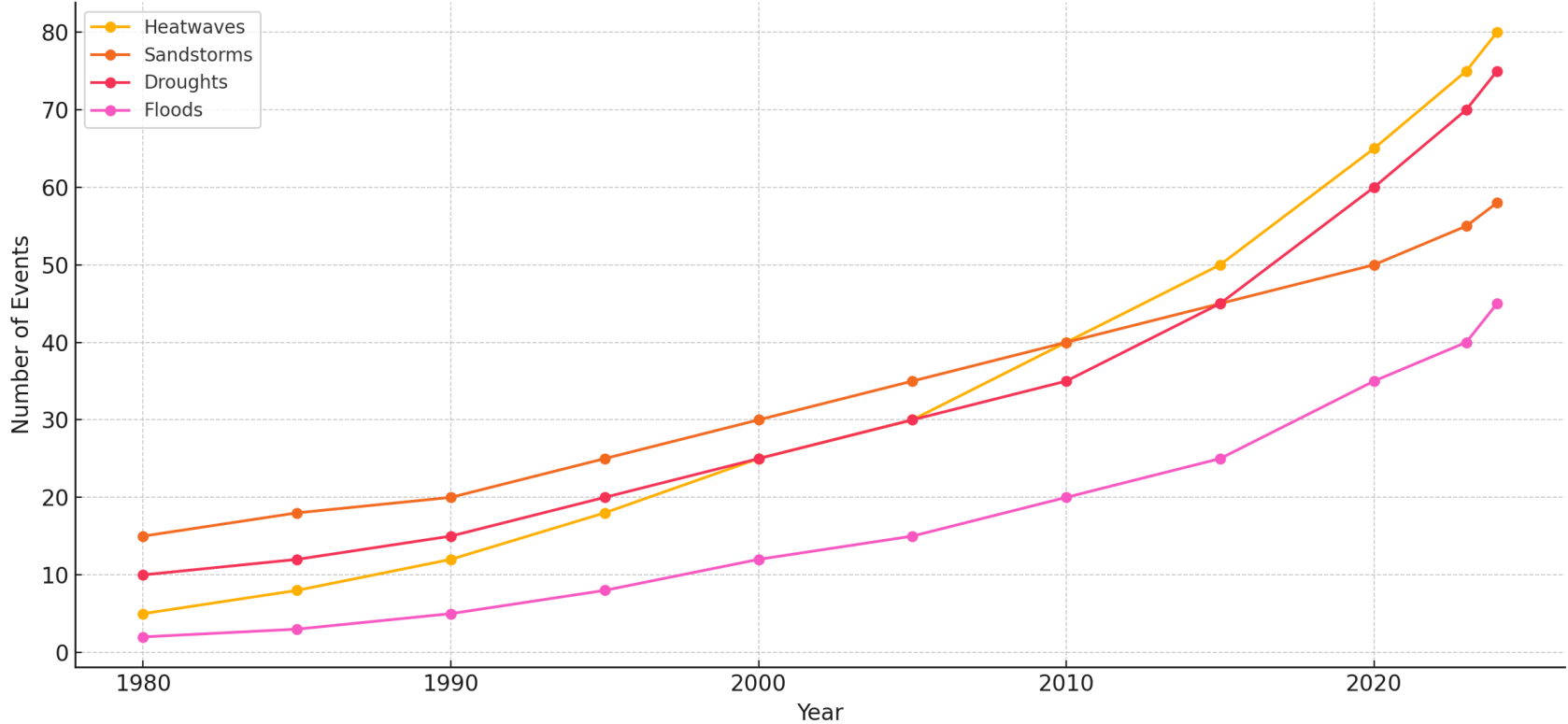
- Hydrocarbon importers, moderate GHG footprint
- Hydrocarbon exporters, moderate GHG footprint
- FCV, low GHG footprint
- Hydrocarbon exporters, high GHG footprint (GCC)
- Hydrocarbon exporter, high GHG footprint (Iran)

... climate action presents policymakers with difficult policy trade-offs

\* data unavailable

# Middle East: increased frequency & intensity of extreme weather events => invest in climate tech to mitigate / adapt

Frequency of Extreme Weather Events in the Middle East (1980-2024)

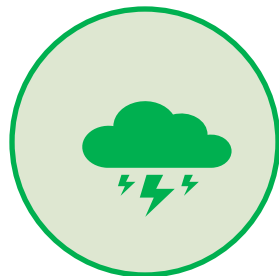


# Energy Transition is underway: but Climate Risk Mitigation & Adaptation will require economic transformation



## Fossil fuel assets

- Could become stranded
- **De-risk such assets** via privatisation, PPP



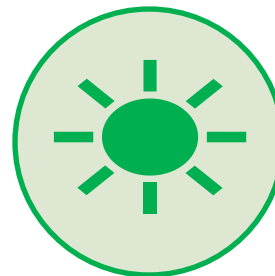
## Energy supply

- **Needs to be diversified**
- Renewable/solar, hydrogen, nuclear + O&G



## Electrification

- **E-transport system**
- transformation;
- Need investment in infrastructure



## Climate adaptation

- Require **investment in climate change resilient infras.** (retrofitting, climate tech investments)



## Market-based policy instruments

- Phase out subsidies
- Carbon taxes
- Electricity markets
- Voluntary carbon markets

**GCC will be at the Centre of a Transformed Global Energy Map: regional integration, diversifying into new markets with new products (clean energy, clean tech, hydrogen...)**

# NZ commitments & climate financing in the Middle East: Least Financially Developed Countries Face the Largest Financing Needs

## 5 out of 12

Countries are committed to net zero by around mid-century

## 44%

Share of renewables in power generation capacity in UAE by 2050 under the National Energy Strategy

## 5

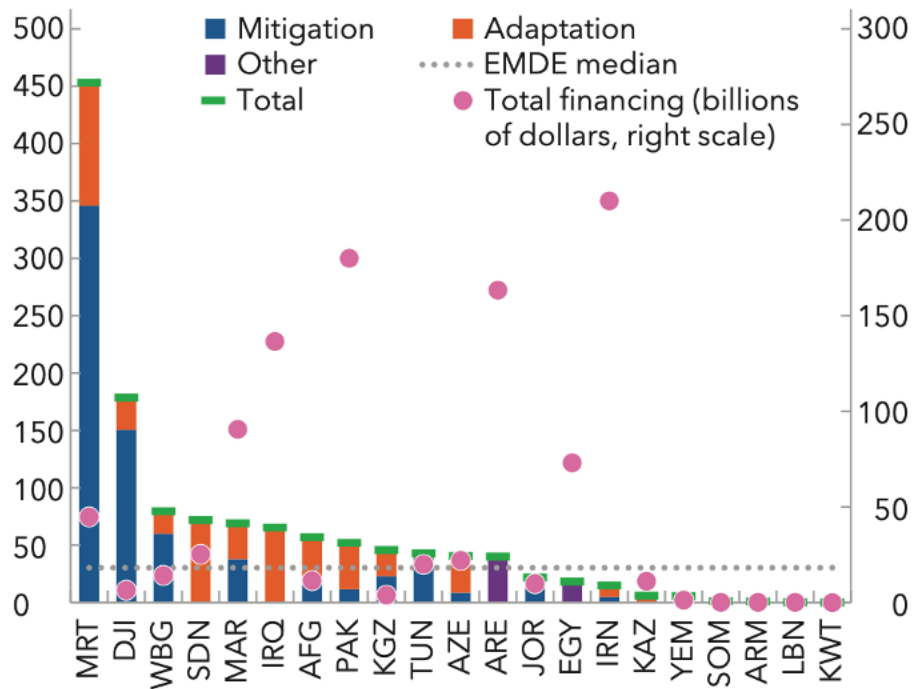
National oil companies in the region have signed the Oil and Gas Decarbonization Charter, committing to near zero upstream methane emissions by 2030

## 16 Mt CO2 per year

Operational and planned carbon capture capacity by 2030.

### ME&CA Financing Needs, Upper Range

(Percent of 2021 GDP, unless otherwise indicated)



Source: "Preparing Financial Sectors for a Greener Future" IMF Departmental Paper, Feb 2024

ME&CA countries require **1.0-2.8 trillion dollars for climate change-related financing by 2030** i.e. **between USD 150-450bn per year**

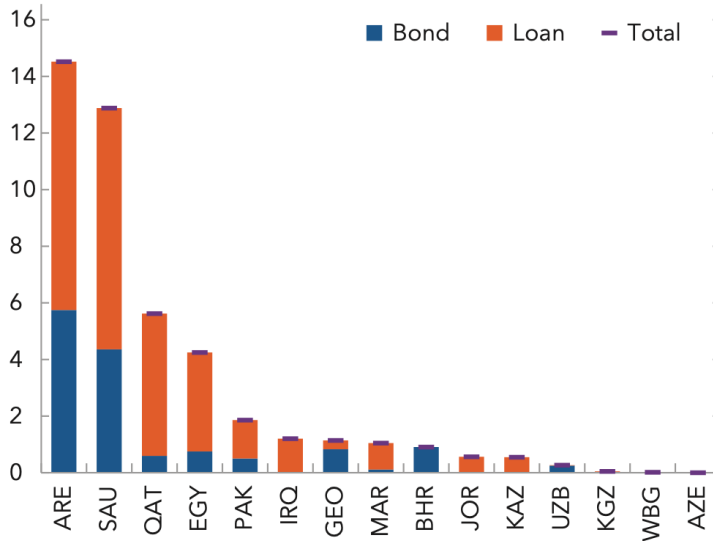
**Financing estimates for climate risk mitigation are 8-15 times higher than for climate adaptation**

# Growth of Green Finance for Climate Investment falls short of requirements: GCC are well-positioned to take a leading role

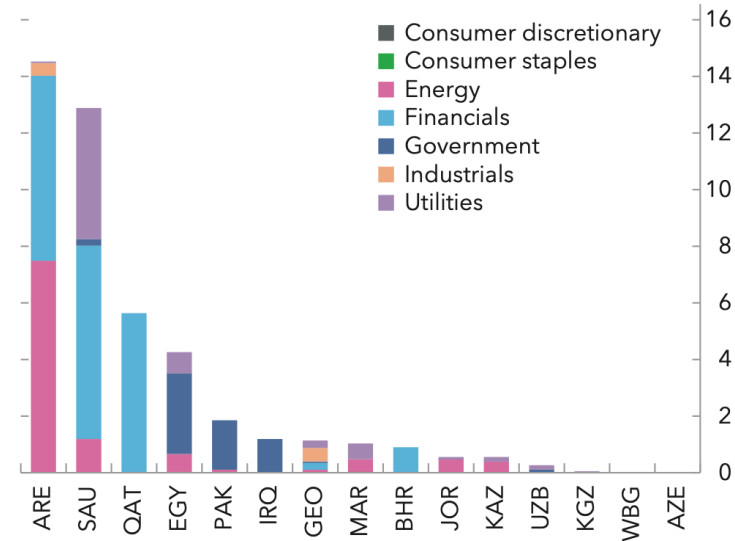
- **Private climate finance in ME&CA is notably low**, contributing only about 0.2% of GDP (about \$10bn/year), with a significant concentration in a few countries (GCC)
- Green bonds and loans remain confined to relatively large issuers and industries; in the GCC, **mostly companies in energy and utilities sectors**, along with **financial institutions** including sovereign wealth funds (SWFs), have been able to **tap green financing** to date

## Green Financing by Instruments & Industry, 2003–22 (USD bn)

1. Green Financing, by Instruments



2. Green Financing, by Industry



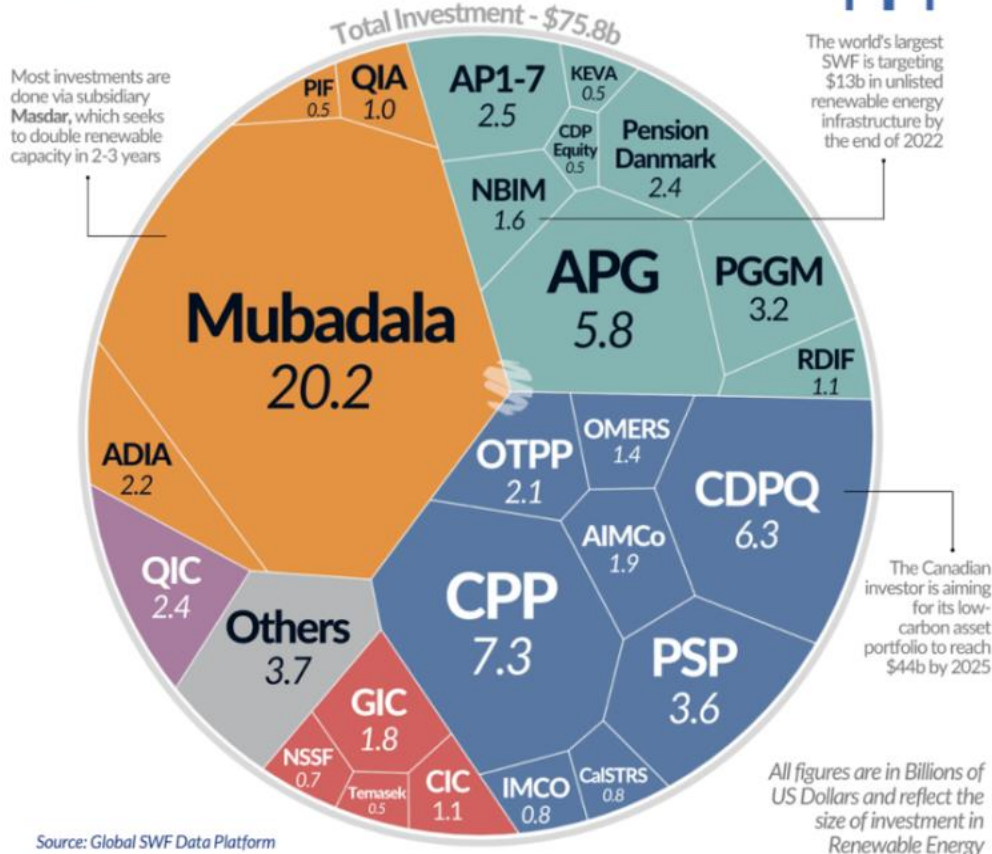
Source: "Preparing Financial Sectors for a Greener Future" IMF Departmental Paper, Feb 2024

# Sovereign wealth funds are mobilising funding for renewable energy & climate tech

In 2024, UAE's Mubadala topped global SWF spending



## Largest State-Owned Investors in Renewable Energy (2023)



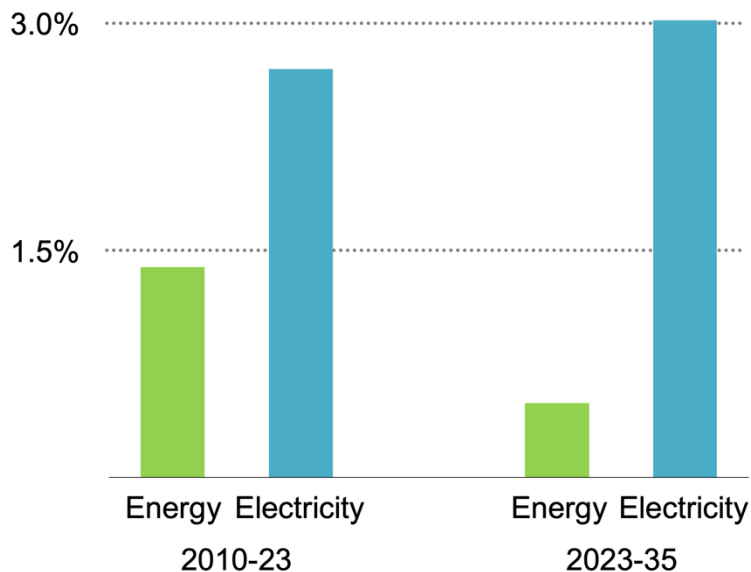
Source: Global SWF Data Platform

● North America ● Middle East & North Africa ● Europe ● Asia ● Oceania

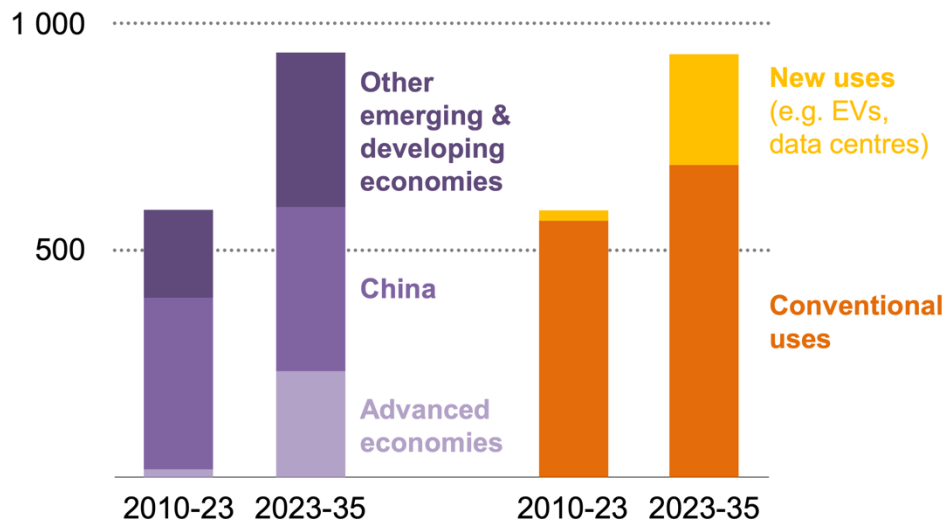
# Entering the Age of Electricity

*Electricity is growing faster than all other energy sources + it's growing across a wide range of economies, as conventional drivers of growth are supplemented by new ones like EVs, data centres & heat pumps*

**Annual demand growth under current policies (or STEPS, according to IEA)**



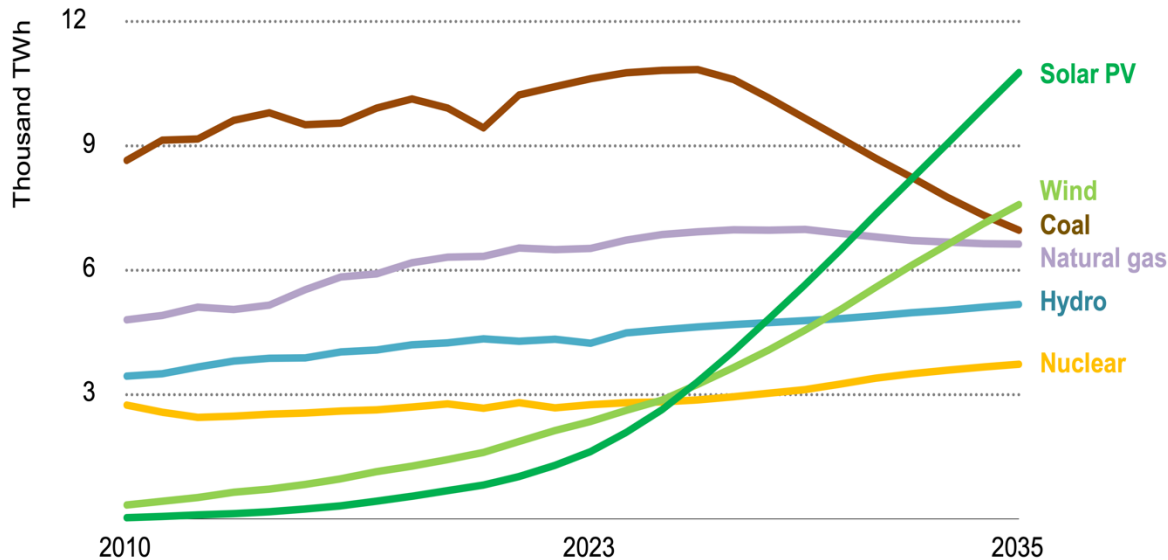
**Annual electricity demand growth (TWh)**



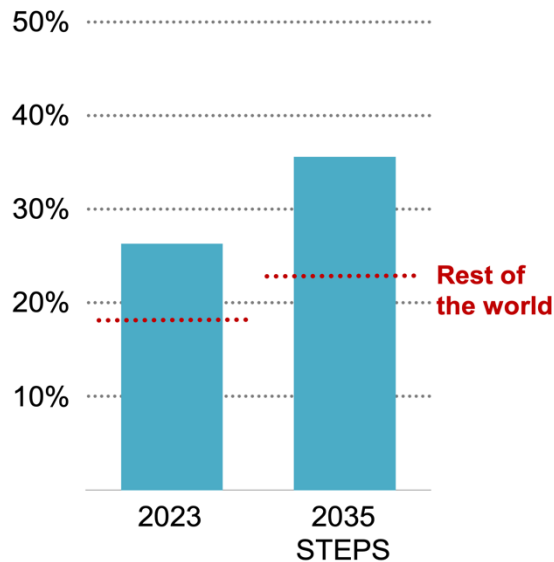
# Electricity use is growing fast, clean power is rising even faster. But Fossil fuels still account for close to 2/3-rds share of total electricity generation

Solar PV & wind hit their stride and become the largest sources of electricity before 2035, complementing other clean sources like hydro and nuclear, and pushing coal into decline

## World electricity generation, renewable sources

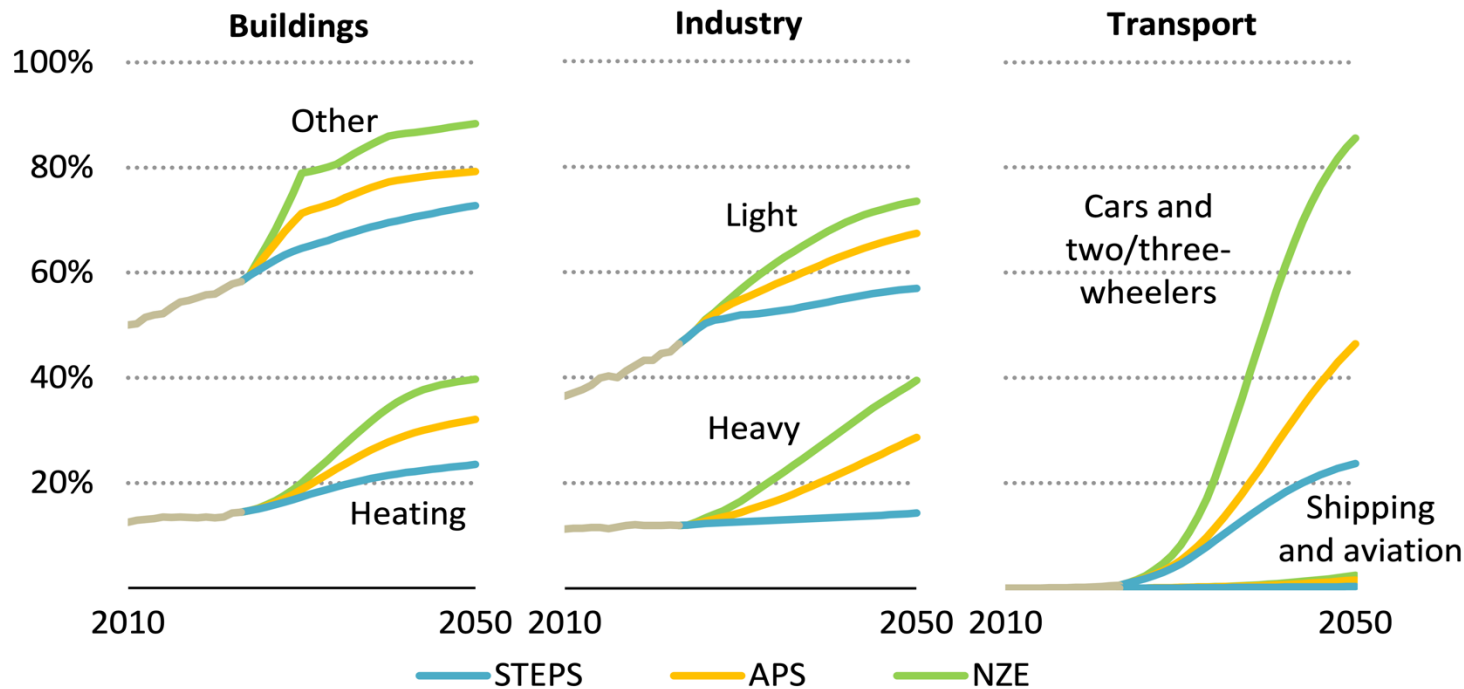


## China's extraordinary expansion of electrification (as % of final consumption)



Source: World Energy Outlook 2024 presentation, IEA.

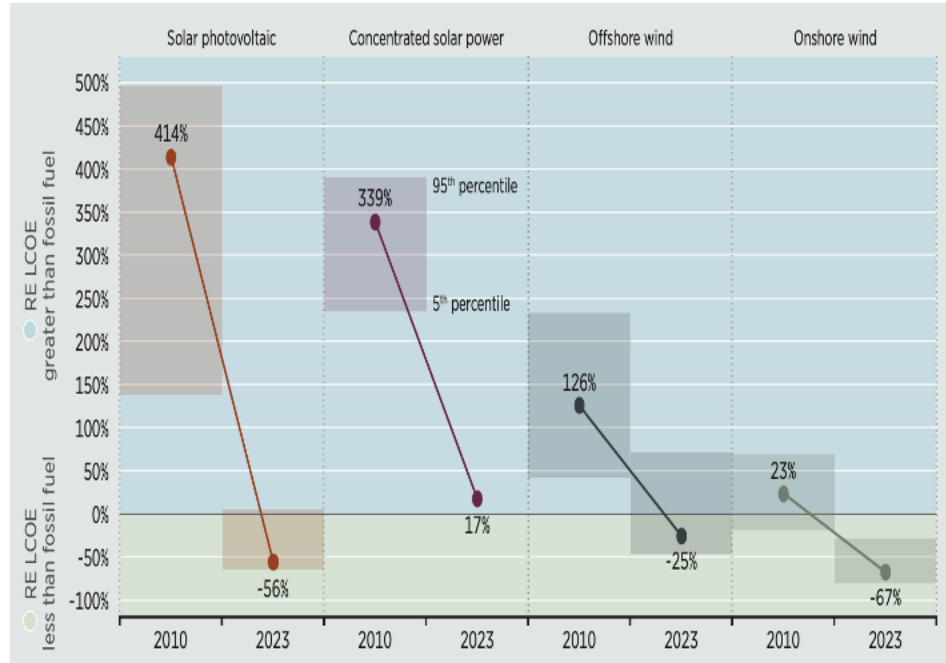
**Post-2030, electrification becomes the critical driver of shifting energy consumption patterns; uptake of electricity varies by end-use within sectors. Electrification** includes homes switching to heat pumps, the increased use of air conditioning, greater adoption of electric vehicles.



**Share of electricity in total final consumption by end-use sector and scenario, 2010-2050**

# Technological innovation has enabled renewable power to become increasingly cost-competitive with fossil fuels

Change in global weighted average LCOE for solar and wind vs fossil fuels, 2010-2023



Source: Renewable Power Generation Costs, Sep 2024, IRENA.

Comparative advantages for the GCC in...

Sustainable desalination

District cooling

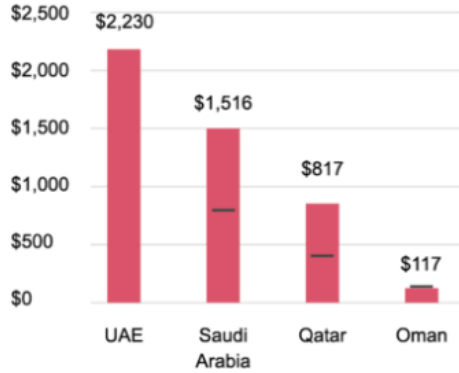
Desert Agriculture/ AgriTech

Hydrogen

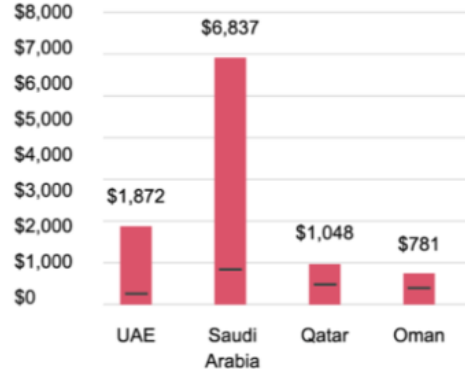
Green data centres

# Middle East investors directed USD 3.6bn into climate tech globally in the 12 months to Sep 2024; Mobility main sector of investment

2024 megadeals with Middle East investment  
(in \$millions)



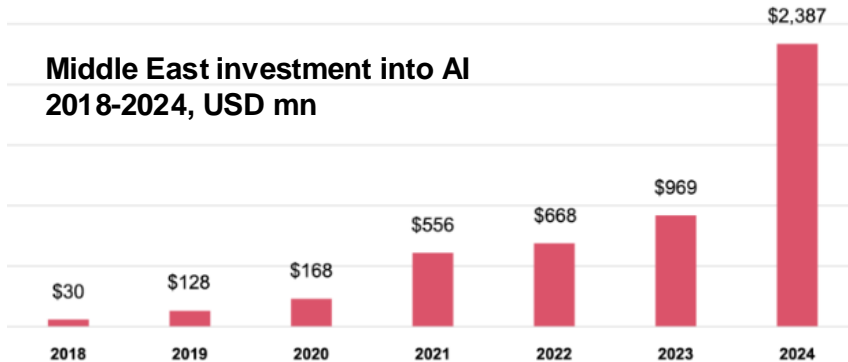
2023 megadeals with Middle East investment  
(in \$millions)



■ Total invested — Average value of investment

■ Total invested — Average value of investment

## Middle East investment into AI 2018-2024, USD mn



- A drop from USD 5bn a year ago, mirroring the global trend
- **Only USD 43.6mn** of the USD 3.6bn capital was **directed toward regional climate tech** firms = a missed opportunity!
- **China** became the **leading destination for ME investment** (surpassing North America)
- **UAE most active investor** – close to USD 2.5bn (& then KSA)
- Electric mobility & AI-driven climate tech (mostly autonomous vehicles) emerge priority areas. **Mobility represents 84% of the investment**

Source: 2024 Middle East Climate Tech report, PwC  
<https://www.pwc.com/m1/en/esg/2023-middle-east-climate-tech-report.html>

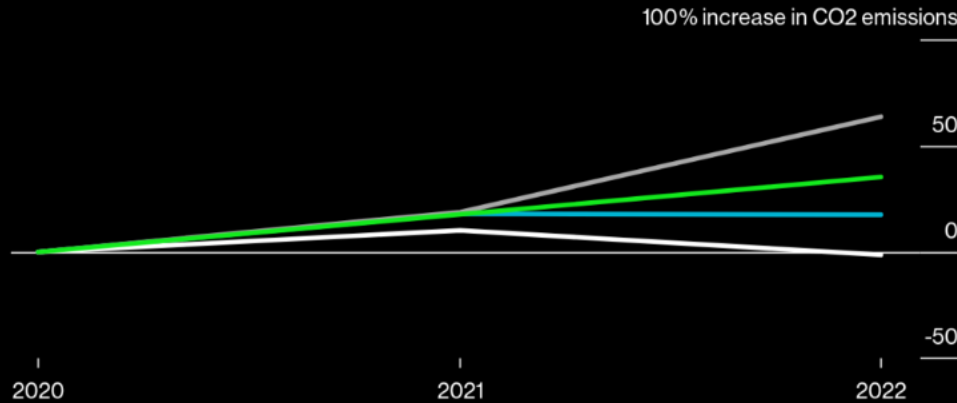
# Increased use of AI will rapidly increase the demand for electricity

AI demands more data centres - which are increasingly consuming more electricity

## Carbon-intensive AI

Artificial intelligence demands new and bigger data centers, which means more electricity use and more emissions from cement, steel and microchips

Microsoft Google Meta Amazon

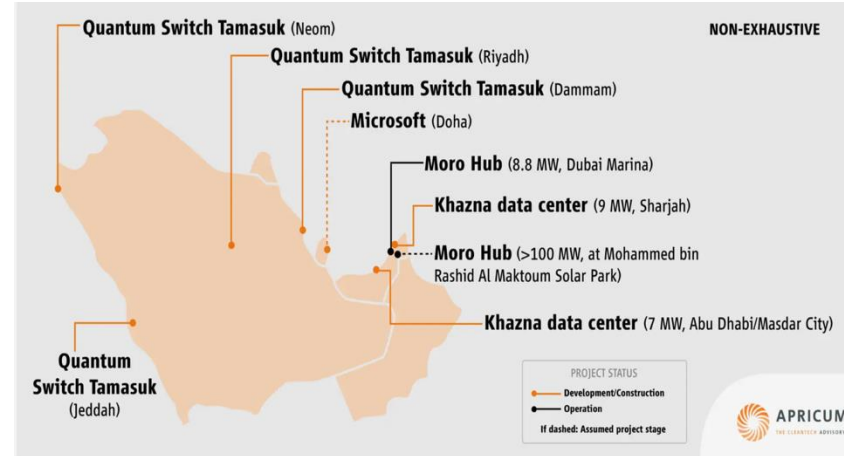


Source: Company reports where comparable data was available  
Note: Shows change since 2020

Bloomberg Green

- There are b/n **80-100 active data centres across GCC**, with UAE the highest share (32 to 38, \$3.1bn worth), followed by KSA (22-36, \$1.4bn) in various stages
- As of Nov 2024, \$3.1bn worth data centre projects are in execution stage in the GCC. \$4.9bn worth projects were awarded in 2017-Nov 2024, an annual avg of \$610mn+

## Overview of announced or existing green data centres in GCC



Source: "How Tech Companies Are Obscuring AI's Real Carbon Footprint", Bloomberg  
<https://www.bloomberg.com/news/articles/2024-08-21/ai-tech-giants-hide-dirty-energy-with-outdated-carbon-accounting-rules>

Source: Apricum. <https://apricum-group.com/big-data-goes-green/>

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# GCC are in a unique situation of becoming Global Hubs for “Old” & “New Energy”

Dependence on Middle East energy to grow. Diversified energy supply from investments in New Energy

## GCC New Energy & Climate Tech hubs

- **GCC moving to Solar Powered electrification, Digitisation, AI and Data Centres**
- **Integrated GCC power grid** powered by RE, extending to ME, Europe, Pakistan & India
- **GCC climate tech exports: desalination, district cooling, desert agriculture**
- **SOEs and SWFs investments** into clean & renewable energy projects

## Financing gaps need new institutions & instruments

- Develop a **Regional Financing Facility**
- A **GCC Climate Bank** for Climate Risk Mitigation & Adaptation
- UAE/ KSA can become **hubs for Climate Finance** (Green, Blue finance)
- **Market-based policy instruments:** carbon credits & trading

# How can ABB adjust to global fragmentation, climate transition & support GCC's plans?

## Opportunities

- **Market expansion:** shift towards emerging Asia, rise of Africa
- Embracing the digital transformation including **digitalization of energy systems**
- **Electrification & energy efficiency critical** for a low-carbon future, net-zero goals
- **Climate tech** will be a major investment sector in the future
- Focus on **sustainability:** AI in SCM, green data centres

## Supporting GCC efforts

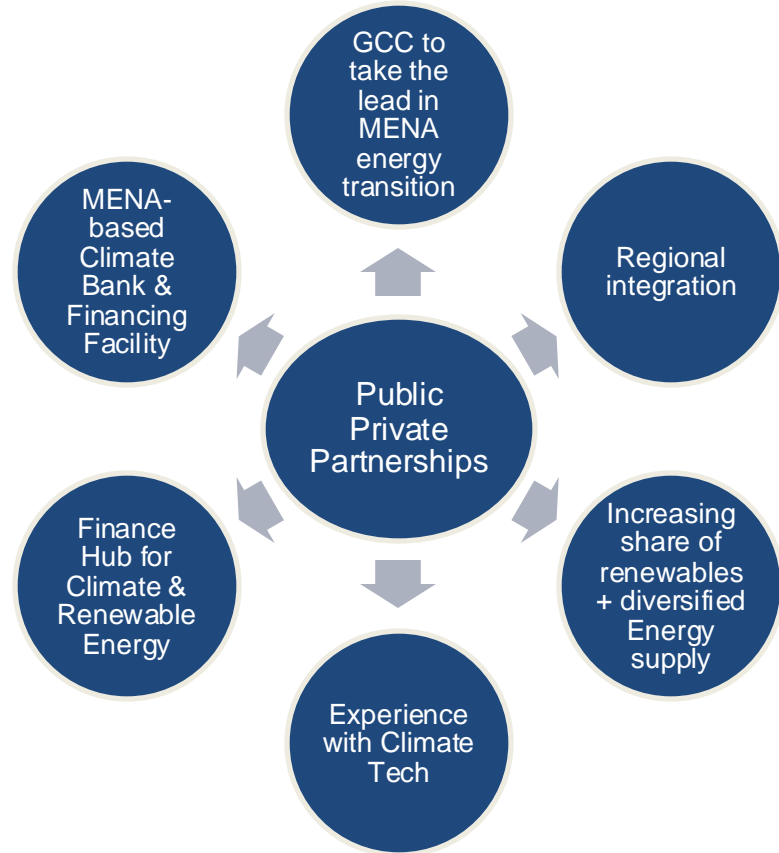
- **Investments** in energy transition & climate adaptation
- **Green financing**
- **Localised manufacturing** & production
- Prioritize the **use of robotics & AI** (to automate processes, improve prodn efficiency)
- **Transfer the technology** by going into local partnerships (e.g battery storage solutions, green hydrogen) – setup an **ABB Academy?**

***Electrification & efficiency are the two keys to hitting net zero*** **NS**  
***- Morten Wierod, CEO ABB @ WEF***

# Key Takeaways

- **Tectonic shift towards Asia** => growing energy, trade, payments, investment links. Creates **new opportunities for Gulf Falcon economies**.
- **Emerging “Middle Powers”**: **GCC Falcons driven by Saudi & UAE** are maturing economies.
- Climate change is forcing nations to **hasten low-carbon energy transition plans**. **Geopolitical forces also reconfiguring the global energy map**.
- **MENA highly climate stressed => need for collective action & cooperation for climate adaptation**
- **The Age of Electricity beckons for ABB**

## Levers for MENA decarbonisation



**“The Age of Electricity Beckons ABB” ©**

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