Energy transition and strategic asset allocation
Insights from IEA World Energy Investment and World Energy Outlook reports

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Energy investment was over USD 1.8 trillion in 2018. A rise in fossil fuel supply investment offset lower power and stable efficiency spend. Power was the largest sector for the third year in a row.
Today’s investment is concentrated in more developed regions

Energy investment and population by region, classified by income level

Energy investment by income group

- **High-income**
  - USD (2018) billion: 750

- **Upper-middle income**
  - USD (2018) billion: 750

- **Lower-middle to low-income**
  - USD (2018) billion: 250

Share of 2018 investment
- **High-income**: 42%
- **Upper-middle income**: 44%
- **Lower-middle to low-income**: 14%

Share of population
- **High-income**: 16%
- **Upper-middle income**: 41%
- **Lower-middle to low-income**: 42%

Lower income areas (e.g. sub-Saharan Africa) receive around 15% of investment, but are over 40% of the world’s population. A rebalancing of spending is essential to meet sustainable development goals.
State-backed capital has played a larger role in fossil fuels

In the SDGs, a growing role for clean energy & efficiency points to a needed mobilisation of more private capital. There is also an opportunity for engagement with SOEs on energy investment strategy.
Government policies underpin nearly all power sector investments

Global power sector investment by main remuneration model

- Wholesale market pricing
- Distributed generation based on retail or regulated tariffs
- Regulated networks
- Regulated/contracted utility-scale generation

Total power sector investment in 2017: USD 750 billion

Over 95% of power sector investments rely on regulation or contracts beyond short-term wholesale markets for their main remuneration, as regulators pursue adequacy and environmental aims.
How can we change the emissions trajectory?

Energy efficiency and renewables account for over 70% of the cumulative CO2 and CH4 emissions savings in the SDS as the share of low-carbon investment rises to nearly two-thirds.
Energy supply investment needs to rise, whatever the scenario

Global energy supply investment compared with annual average investment needs 2025-30 by IEA scenario

Today’s capital allocation would need to shift rapidly towards cleaner supply sources and grids to align with the goals of the Sustainable Development Scenario and the Paris Agreement.
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Global energy supply investment compared with annual average investment needs 2025-30 by IEA scenario

Today’s capital allocation would need to shift rapidly towards cleaner supply sources and grids to align with the goals of the Sustainable Development Scenario and the Paris Agreement.
The output expected from investment in low-carbon power levelled off in 2018 while demand growth soared. To meet sustainability goals, spending on renewable power and grids needs a boost.
Different risk-return profiles between fuel supply and power sectors

Return on invested capital (ROIC) and after-tax weighted average cost of capital (WACC) for listed energy companies

While recent financial metrics appear more favourable for power companies investing in energy transition, signals are not adequate for the major reallocation of capital that would align with the SDS.
Investment growth in energy efficiency has stalled

Energy efficiency spending was stable a second year in a row, with limited progress in expanding policy coverage. Despite soaring EV sales transport efficiency has stagnated, while spending in buildings fell.
A rapid acceleration in energy transitions is required to simultaneously tackle climate change, achieve universal energy access and reduce the impacts of air pollution.
Are today’s sustainable finance opportunities enough?

Scaling low-carbon investment would require a step-change in policy focus and new financial solutions and mechanisms to support development at both consumer and bulk power levels.

[Diagram: Green bond issuance in energy by intended use of proceeds]

[Diagram: Renewable power investment based on project finance]
Conclusions

• Energy investment stabilised in 2018 due to a bounce back in spending on oil, gas & coal supply while low-carbon (supply & demand) investment stalled

• Governments are playing a growing role in shaping energy investments; around 70% of future investments are underpinned by policy decisions

• There are few signs of the major shift of capital towards efficiency, renewables & innovative technologies that is needed to turn emissions around

• To meet SDGs, investment needs to rise and rebalance towards the fast-growing needs of emerging economies, where the cost of capital is higher and financial systems are less developed

• There is an opportunity for investors and companies to engage with governments in order to encourage financial decisions and policy making that are better aligned with sustainability goals